Anhang F

Experimentelle Daten zu Kapitel 9

Alle experimentellen Daten zu Kapitel 9, zu den spektroskopischen Untersuchungen am Cyanofulminat NCCNO finden sich auf der beigefügten *Compact Disc* unter NCCNO.i01. Wie bereits in Tabelle 4.3 aufgeführt, beinhaltet das Verzeichnis NCCNO.c01 im ASCII-Format sämtliche Spektren und Linienlisten zwischen 77 und 119 GHz, das Verzeichnis NCCNO.c02 alle Spektren und Linienlisten zwischen 210 und 230 GHz. Alle Spektren und Linienlisten zwischen 52 und 77 GHz sind im Verzeichnis NCCNO.c03 enthalten, und alle Spektren und Linienlisten zwischen 159 und 179 GHz im Verzeichnis NCCNO.c05. Die ursprünglichen Übersichtsspektren finden sich wieder geordnet nach der Startfrequenz jeweils in den Unterverzeichnissen rls, die geglätteten Übersichtsspektren in den Unterverzeichnissen xy. Entsprechend sind die unkalibrierten Linienlisten wieder in den Unterverzeichnissen pl enthalten. Das um $90\,\mathrm{cm}^{-1}$ aufgenommene Fourier-Transform-Infrarot-Spektrum des Bandensystems der tiefliegenden CCN-Knickschwingung ν_7 ist im OPUS-Format im Verzeichnis NCCNO.c04 abgelegt, wobei mit TNCFUES.1 das ursprüngliche Transmissionsspektrum und mit ZTNCFUES.1 das Transmissionsspektrum nach *Postzerofilling* bezeichnet ist. Die um eine leichte Schwebung des Untergrunds korrigierten Spektren tragen entsprechend die Bezeichnungen TNCFUEX.1 und ZTNCFUEX.1, und mit ZTNCFUEX.pli ist die letzten Endes resultierende Linienliste bezeichnet. Im Verzeichnis NCCNO.c06 befinden sich schließlich im IGOR-Format unter den Bezeichnungen NCCNO.pxp und NCCNO.pkl das später in Columbus aufgezeichnete Submillimeterwellen-Spektrum und die zugehörige Linienliste.

Das Verzeichnis Linc enthält sämtliche Eingabedateien für linc96 mit der Endung .lin und die entsprechenden Ausgabedateien mit der Endung .lot. In den Dateinamen bezeichnen die ersten drei Ziffern in der Terminologie eines linearen Moleküls die Vibrationsquantenzahlen v_4, v_5 und v_6, die letzte Ziffer die Vibrationsquantenzahl v_7. Bei den substituierten Isotopomeren steht an der Stelle der Vibrationsquantenzahl v_4 ein Kleinbuchstabe, wobei a für ^{15}NCCNO, b für N^{13}CCNO, d für NCC^{15}NO und e für NCCN^{18}O steht.

Sämtliche experimentellen Übergangsfrequenzen und -wellenzahlen ν_{exp} und $\tilde{\nu}_{\mathrm{exp}}$ sind in den nun folgenden Tabellen zusammengestellt, wobei immer auch deren Abweichungen von den berechneten Übergangsfrequenzen und -wellenzahlen ν_{calc} und $\tilde{\nu}_{\mathrm{calc}}$ angegeben sind, wie sie sich aus den mit linc96 bestimmten effektiven Konstanten in Tabelle 9.5 bis 9.8 ergeben. Ein Asterix hinter einer Abweichung deutet wieder an, daß der betreffende Übergang bei der Anpassung der effektiven Konstanten nicht berücksichtigt wurde.

Die genannten Konstanten wurden auch verwendet, um Übergangsfrequenzen und -wellenzahlen bei niedrigeren Rotationsquantenzahlen zu berechnen, die dann ihrerseits als Grundlage für die *semirigid bender* -Analyse dienten. Diese Übergangsfrequenzen und -wellenzahlen sind in den

später anschließenden Tabellen zusammengefaßt. Ferner sind dort auch deren Abweichungen von den Übergangsfrequenzen und -wellenzahlen ν_{srb} und $\tilde{\nu}_{\mathrm{srb}}$ eines halbstarren Knickschwingers mit den in Tabelle 9.10 aufgeführten, in Durchlauf II angepaßten Parametern angegeben.

Tabelle F.1 Zugeordnete Rotations-Vibrationsübergänge von NCCNO um $90\,\mathrm{cm}^{-1}$.

	$J' \leftarrow J''$	$\frac{\tilde{\nu}_{\mathrm{exp}}}{\mathrm{cm}^{-1}}$	$\frac{\tilde{\nu}_{\mathrm{exp}} - \tilde{\nu}_{\mathrm{calc}}}{\mathrm{cm}^{-1}}$	$J' \leftarrow J''$	$\frac{\tilde{\nu}_{\mathrm{exp}}}{\mathrm{cm}^{-1}}$	$\frac{\tilde{\nu}_{\mathrm{exp}} - \tilde{\nu}_{\mathrm{calc}}}{\mathrm{cm}^{-1}}$
$(\nu_7^1)^{1e} \leftarrow$	Grund, P-Zweig					
	5 ← 6	79.532 363	−0.000 031			
	6 ← 7	79.382 708	0.000 179			
	7 ← 8	79.233 154	−0.000 228			
	8 ← 9	79.084 921	−0.000 032			
	9 ← 10	78.937 083	−0.000 160			
	10 ← 11	78.790 118	−0.000 132			
	11 ← 12	78.643 905	−0.000 071			
	12 ← 13	78.498 397	−0.000 022			
	13 ← 14	78.353 530	−0.000 051			
	14 ← 15	78.209 471	0.000 011			
	15 ← 16	78.066 206	0.000 149			
	16 ← 17	77.923 376	0.000 004			
	17 ← 18	77.781 417	0.000 013			
	18 ← 19	77.640 147	−0.000 007			
	19 ← 20	77.499 704	0.000 084			
	20 ← 21	77.359 765	−0.000 039			
	21 ← 22	77.220 680	−0.000 024			
	22 ← 23	77.082 256	−0.000 065			
	23 ← 24	76.944 689	0.000 036			
	24 ← 25	76.807 696	−0.000 006			
	25 ← 26	76.671 439	−0.000 028			
	26 ← 27	76.535 969	0.000 022			
	27 ← 28	76.401 176	0.000 034			
	28 ← 29	76.266 986	−0.000 066			
	29 ← 30	76.133 639	−0.000 038			
	30 ← 31	76.001 028	0.000 013			
	31 ← 32	75.869 002	−0.000 065			
	32 ← 33	75.737 849	0.000 016			
	33 ← 34	75.607 302	−0.000 010			
	34 ← 35	75.477 518	0.000 015			
	35 ← 36	75.348 429	0.000 023			
	36 ← 37	75.219 977	−0.000 044			
	37 ← 38	75.092 349	0.000 002			
	38 ← 39	74.965 429	0.000 046			
	39 ← 40	74.839 126	−0.000 004			
	40 ← 41	74.713 550	−0.000 037			
	41 ← 42	74.588 710	−0.000 043			
	42 ← 43	74.464 686	0.000 059			
	43 ← 44	74.341 126	−0.000 084			
	44 ← 45	74.218 498	−0.000 002			
	45 ← 46	74.096 601	0.000 104			
	46 ← 47	73.975 166	−0.000 034			
	47 ← 48	73.854 536	−0.000 073			
	48 ← 49	73.734 713	−0.000 009			
	49 ← 50	73.615 454	−0.000 087			
	50 ← 51	73.497 091	0.000 028			
	51 ← 52	73.379 235	−0.000 053			

	$53 \leftarrow 54$	73.145 838	−0.000 006
	$54 \leftarrow 55$	73.030 255	0.000 081
	$55 \leftarrow 56$	72.915 308	0.000 104
	$56 \leftarrow 57$	72.801 002	0.000 068
	$57 \leftarrow 58$	72.687 435	0.000 073
	$58 \leftarrow 59$	72.574 429	−0.000 059
	$59 \leftarrow 60$	72.462 196	−0.000 114
	$60 \leftarrow 61$	72.350 624	−0.000 206
	$61 \leftarrow 62$	72.239 987	−0.000 057
	$62 \leftarrow 63$	72.129 972	0.000 019
	$63 \leftarrow 64$	72.020 510	−0.000 046
	$64 \leftarrow 65$	71.911 853	0.000 001
	$65 \leftarrow 66$	71.803 851	0.000 012
	$66 \leftarrow 67$	71.696 450	−0.000 068
	$67 \leftarrow 68$	71.589 767	−0.000 119
	$68 \leftarrow 69$	71.484 004	0.000 060
	$69 \leftarrow 70$	71.378 840	0.000 150
	$70 \leftarrow 71$	71.274 034	−0.000 089
	$71 \leftarrow 72$	71.170 134	−0.000 108
	$72 \leftarrow 73$	71.067 232	0.000 185
	$73 \leftarrow 74$	70.964 497	−0.000 039
	$74 \leftarrow 75$	70.862 794	0.000 086
	$75 \leftarrow 76$	70.761 341	−0.000 222
	$76 \leftarrow 77$	70.661 099	0.000 001
	$77 \leftarrow 78$	70.561 162	−0.000 152
	$78 \leftarrow 79$	70.462 338	0.000 129
	$79 \leftarrow 80$	70.363 701	−0.000 080
	$80 \leftarrow 81$	70.265 894	−0.000 137
	$81 \leftarrow 82$	70.168 902	−0.000 054
	$82 \leftarrow 83$	70.072 653	0.000 097
	$83 \leftarrow 84$	69.976 757	−0.000 072
	$84 \leftarrow 85$	69.882 077	0.000 302
	$85 \leftarrow 86$	69.787 418	0.000 027
	$86 \leftarrow 87$	69.693 670	−0.000 008
	$87 \leftarrow 88$	69.600 547	−0.000 086
	$88 \leftarrow 89$	69.508 249	−0.000 007
	$89 \leftarrow 90$	69.416 520	−0.000 026
	$90 \leftarrow 91$	69.325 562	0.000 062
	$91 \leftarrow 92$	69.234 799	−0.000 319 *
	$92 \leftarrow 93$	69.145 398	−0.000 001
	$93 \leftarrow 94$	69.056 262	−0.000 079
	$94 \leftarrow 95$	68.967 899	−0.000 044
	$95 \leftarrow 96$	68.880 287	0.000 084
	$96 \leftarrow 97$	68.792 856	−0.000 266
	$97 \leftarrow 98$	68.707 197	0.000 501 *
$(\nu_7^1)^{1f} \leftarrow$	Grund, Q-Zweig		
	$4 \leftarrow 4$	80.456 699	−0.000 034
	$5 \leftarrow 5$	80.461 791	0.000 024
	$6 \leftarrow 6$	80.467 896	0.000 088
	$7 \leftarrow 7$	80.474 802	−0.000 053
	$8 \leftarrow 8$	80.482 905	−0.000 003
	$9 \leftarrow 9$	80.491 932	−0.000 034
	$10 \leftarrow 10$	80.502 109	0.000 078
	$11 \leftarrow 11$	80.513 101	0.000 001
	$12 \leftarrow 12$	80.525 222	0.000 048
	$13 \leftarrow 13$	80.538 230	−0.000 022
	$14 \leftarrow 14$	80.552 330	−0.000 004
	$15 \leftarrow 15$	80.567 424	0.000 004
	$16 \leftarrow 16$	80.583 616	0.000 107

$17 \leftarrow 17$	80.600 574	−0.000 026
$18 \leftarrow 18$	80.618 695	0.000 002
$19 \leftarrow 19$	80.637 835	0.000 048
$20 \leftarrow 20$	80.657 851	−0.000 031
$21 \leftarrow 21$	80.678 978	0.000 001
$22 \leftarrow 22$	80.701 106	0.000 035
$23 \leftarrow 23$	80.724 164	0.000 000
$24 \leftarrow 24$	80.748 249	−0.000 005
$25 \leftarrow 25$	80.773 341	−0.000 001
$26 \leftarrow 26$	80.799 423	−0.000 002
$27 \leftarrow 27$	80.826 465	−0.000 039
$28 \leftarrow 28$	80.854 569	−0.000 009
$29 \leftarrow 29$	80.883 639	−0.000 005
$30 \leftarrow 30$	80.913 633	−0.000 071
$31 \leftarrow 31$	80.944 749	−0.000 006
$32 \leftarrow 32$	80.976 747	−0.000 049
$33 \leftarrow 33$	81.009 928	0.000 101
$34 \leftarrow 34$	81.043 839	−0.000 007
$35 \leftarrow 35$	81.078 812	−0.000 041
$36 \leftarrow 36$	81.114 842	−0.000 004
$38 \leftarrow 38$	81.189 726	−0.000 059
$39 \leftarrow 39$	81.228 641	−0.000 088
$40 \leftarrow 40$	81.268 613	−0.000 042
$41 \leftarrow 41$	81.309 526	−0.000 034
$42 \leftarrow 42$	81.351 556	0.000 112
$43 \leftarrow 43$	81.394 503	0.000 197
$44 \leftarrow 44$	81.438 144	0.000 001
$45 \leftarrow 45$	81.482 981	0.000 026
$46 \leftarrow 46$	81.528 668	−0.000 072
$47 \leftarrow 47$	81.575 515	0.000 019
$48 \leftarrow 48$	81.623 201	−0.000 022
$49 \leftarrow 49$	81.671 628	−0.000 290
$50 \leftarrow 50$	81.721 590	0.000 010
$51 \leftarrow 51$	81.772 179	−0.000 029
$52 \leftarrow 52$	81.823 794	−0.000 005
$53 \leftarrow 53$	81.876 326	−0.000 027
$54 \leftarrow 54$	81.929 903	0.000 036
$55 \leftarrow 55$	81.984 355	0.000 015
$56 \leftarrow 56$	82.039 683	−0.000 087
$57 \leftarrow 57$	82.096 169	0.000 014
$60 \leftarrow 60$	82.270 982	−0.000 043
$61 \leftarrow 61$	82.331 247	0.000 034
$62 \leftarrow 62$	82.392 369	0.000 021
$63 \leftarrow 63$	82.454 390	−0.000 037
$64 \leftarrow 64$	82.517 360	−0.000 088
$65 \leftarrow 65$	82.581 512	0.000 103
$66 \leftarrow 66$	82.646 268	−0.000 041
$67 \leftarrow 67$	82.712 140	−0.000 006
$68 \leftarrow 68$	82.778 894	−0.000 022
$69 \leftarrow 69$	82.846 795	0.000 176
$70 \leftarrow 70$	82.915 257	0.000 005
$71 \leftarrow 71$	82.984 835	0.000 022
$72 \leftarrow 72$	83.055 458	0.000 158
$73 \leftarrow 73$	83.126 685	−0.000 026
$74 \leftarrow 74$	83.199 064	0.000 020
$75 \leftarrow 75$	83.272 500	0.000 204
$76 \leftarrow 76$	83.346 582	0.000 117
$77 \leftarrow 77$	83.421 593	0.000 044
$78 \leftarrow 78$	83.497 618	0.000 072

	$79 \leftarrow 79$	83.574 531	0.000 078
	$80 \leftarrow 80$	83.652 343	0.000 075
	$81 \leftarrow 81$	83.730 698	−0.000 292
	$82 \leftarrow 82$	83.810 394	−0.000 220
	$83 \leftarrow 83$	83.891 230	0.000 090
	$84 \leftarrow 84$	83.972 681	0.000 117
	$86 \leftarrow 86$	84.138 199	0.000 099
	$88 \leftarrow 88$	84.307 211	0.000 010
	$89 \leftarrow 89$	84.393 172	0.000 090
	$90 \leftarrow 90$	84.479 760	−0.000 088
	$92 \leftarrow 92$	84.656 209	0.000 188
	$93 \leftarrow 93$	84.745 508	0.000 084
	$95 \leftarrow 95$	84.927 111	0.000 263
	$96 \leftarrow 96$	85.018 837	−0.000 027
	$97 \leftarrow 97$	85.111 558	−0.000 189
$(\nu_7^1)^{1e} \leftarrow$	Grund, R-Zweig		
	$2 \leftarrow 1$	80.757 333	0.000 170
	$3 \leftarrow 2$	80.913 633	0.000 144
	$4 \leftarrow 3$	81.070 579	0.000 046
	$5 \leftarrow 4$	81.228 641	0.000 348 *
	$6 \leftarrow 5$	81.386 547	−0.000 223
	$7 \leftarrow 6$	81.546 155	0.000 191
	$8 \leftarrow 7$	81.705 534	−0.000 340 *
	$9 \leftarrow 8$	81.866 548	0.000 047
	$10 \leftarrow 9$	82.027 816	−0.000 027
	$11 \leftarrow 10$	82.189 760	−0.000 141
	$12 \leftarrow 11$	82.352 543	−0.000 132
	$14 \leftarrow 13$	82.680 257	−0.000 109
	$16 \leftarrow 15$	83.010 857	−0.000 059
	$18 \leftarrow 17$	83.344 457	0.000 137
	$19 \leftarrow 18$	83.511 894	−0.000 198
	$20 \leftarrow 19$	83.680 562	−0.000 014
	$21 \leftarrow 20$	83.849 767	−0.000 005
	$22 \leftarrow 21$	84.019 739	0.000 060
	$23 \leftarrow 22$	84.190 266	−0.000 032
	$24 \leftarrow 23$	84.361 548	−0.000 079
	$25 \leftarrow 24$	84.533 645	−0.000 022
	$26 \leftarrow 25$	84.706 382	−0.000 034
	$27 \leftarrow 26$	84.880 011	0.000 137
	$28 \leftarrow 27$	85.054 076	0.000 035
	$29 \leftarrow 28$	85.228 895	−0.000 020
	$30 \leftarrow 29$	85.404 154	−0.000 343 *
	$31 \leftarrow 30$	85.580 784	−0.000 002
	$32 \leftarrow 31$	85.757 782	0.000 001
	$33 \leftarrow 32$	85.935 523	0.000 042
	$34 \leftarrow 33$	86.113 722	−0.000 165
	$35 \leftarrow 34$	86.292 905	−0.000 091
	$36 \leftarrow 35$	86.472 686	−0.000 123
	$37 \leftarrow 36$	86.653 287	−0.000 038
	$38 \leftarrow 37$	86.834 414	−0.000 130
	$39 \leftarrow 38$	87.016 561	0.000 098
	$40 \leftarrow 39$	87.199 058	−0.000 026
	$41 \leftarrow 40$	87.382 116	−0.000 288
	$42 \leftarrow 41$	87.566 346	−0.000 078
	$43 \leftarrow 42$	87.751 432	0.000 290
	$44 \leftarrow 43$	87.936 543	−0.000 014
	$45 \leftarrow 44$	88.122 583	−0.000 087
	$46 \leftarrow 45$	88.309 444	−0.000 034
	$47 \leftarrow 46$	88.496 927	−0.000 055

$48 \leftarrow 47$	88.685 297	0.000 117
$49 \leftarrow 48$	88.874 072	0.000 000
$53 \leftarrow 52$	89.636 431	−0.000 123
$54 \leftarrow 53$	89.829 075	0.000 176
$55 \leftarrow 54$	90.022 027	0.000 095
$56 \leftarrow 55$	90.215 546	−0.000 106
$57 \leftarrow 56$	90.410 380	0.000 323 *
$58 \leftarrow 57$	90.605 294	0.000 146
$59 \leftarrow 58$	90.800 859	−0.000 064
$60 \leftarrow 59$	90.997 517	0.000 136
$61 \leftarrow 60$	91.194 319	−0.000 201
$62 \leftarrow 61$	91.392 468	0.000 128
$63 \leftarrow 62$	91.590 840	0.000 000
$64 \leftarrow 63$	91.789 961	−0.000 058
$67 \leftarrow 66$	92.391 717	0.000 101
$68 \leftarrow 67$	92.593 378	−0.000 120
$69 \leftarrow 68$	92.795 674	−0.000 379 *
$70 \leftarrow 69$	92.999 593	0.000 314 *
$71 \leftarrow 70$	93.202 987	−0.000 190
$72 \leftarrow 71$	93.407 818	0.000 074
$73 \leftarrow 72$	93.612 944	−0.000 035
$74 \leftarrow 73$	93.819 272	0.000 391 *
$75 \leftarrow 74$	94.024 869	−0.000 580 *
$76 \leftarrow 75$	94.232 338	−0.000 343 *
$77 \leftarrow 76$	94.441 219	0.000 642 *
$78 \leftarrow 77$	94.649 273	0.000 138
$79 \leftarrow 78$	94.858 413	0.000 060
$80 \leftarrow 79$	95.068 284	0.000 053
$81 \leftarrow 80$	95.279 012	0.000 245
$86 \leftarrow 85$	96.341 381	0.000 111
$87 \leftarrow 86$	96.555 791	0.000 065
$88 \leftarrow 87$	96.771 076	0.000 245
$89 \leftarrow 88$	96.986 826	0.000 243
$91 \leftarrow 90$	97.420 161	0.000 140
$(2\nu_7^0)^{0e} \leftarrow (\nu_7^1)^{1e}$, P-Zweig		
$4 \leftarrow 5$	84.906 112	0.000 112
$5 \leftarrow 6$	84.755 793	0.000 248
$6 \leftarrow 7$	84.605 904	−0.000 076
$7 \leftarrow 8$	84.457 251	−0.000 056
$9 \leftarrow 10$	84.162 790	0.000 147
$10 \leftarrow 11$	84.016 594	−0.000 062
$13 \leftarrow 14$	83.584 068	−0.000 040
$14 \leftarrow 15$	83.441 796	0.000 057
$15 \leftarrow 16$	83.300 327	0.000 045
$16 \leftarrow 17$	83.159 672	−0.000 069
$17 \leftarrow 18$	83.020 285	0.000 165
$18 \leftarrow 19$	82.881 424	0.000 001
$19 \leftarrow 20$	82.743 576	−0.000 078
$20 \leftarrow 21$	82.607 057	0.000 239
$21 \leftarrow 22$	82.470 742	−0.000 178
$24 \leftarrow 25$	82.069 024	0.000 123
$25 \leftarrow 26$	81.936 748	−0.000 058
$26 \leftarrow 27$	81.805 673	−0.000 003
$27 \leftarrow 28$	81.675 588	0.000 071
$28 \leftarrow 29$	81.546 155	−0.000 180
$29 \leftarrow 30$	81.418 074	−0.000 063
$30 \leftarrow 31$	81.290 995	0.000 065
$31 \leftarrow 32$	81.164 767	0.000 047
$32 \leftarrow 33$	81.039 607	0.000 092

$35 \leftarrow 36$	80.670 074	0.000 072
$36 \leftarrow 37$	80.548 965	0.000 075
$37 \leftarrow 38$	80.428 755	−0.000 064
$38 \leftarrow 39$	80.309 804	0.000 005
$39 \leftarrow 40$	80.191 842	0.000 005
$40 \leftarrow 41$	80.074 916	−0.000 026
$41 \leftarrow 42$	79.959 055	−0.000 065
$42 \leftarrow 43$	79.844 374	−0.000 006
$43 \leftarrow 44$	79.730 686	−0.000 045
$44 \leftarrow 45$	79.618 308	0.000 128
$45 \leftarrow 46$	79.506 812	0.000 076
$46 \leftarrow 47$	79.396 323	−0.000 083
$47 \leftarrow 48$	79.287 213	0.000 014
$48 \leftarrow 49$	79.179 049	−0.000 073
$49 \leftarrow 50$	79.071 964	−0.000 218
$50 \leftarrow 51$	78.966 395	0.000 006
$51 \leftarrow 52$	78.861 834	0.000 086
$52 \leftarrow 53$	78.757 927	−0.000 340 *
$53 \leftarrow 54$	78.655 802	−0.000 151
$54 \leftarrow 55$	78.554 745	−0.000 067
$55 \leftarrow 56$	78.454 958	0.000 106
$56 \leftarrow 57$	78.355 989	−0.000 090
$57 \leftarrow 58$	78.258 412	−0.000 085
$58 \leftarrow 59$	78.162 292	0.000 178
$60 \leftarrow 61$	77.972 929	−0.000 032
$61 \leftarrow 62$	77.880 117	−0.000 085
$62 \leftarrow 63$	77.788 543	−0.000 116
$63 \leftarrow 64$	77.698 505	0.000 168
$67 \leftarrow 68$	77.349 141	−0.000 176
$69 \leftarrow 70$	77.182 441	0.000 240
$(2\nu_7^0)^{0e} \leftarrow (\nu_7^1)^{1f}$, Q-Zweig		
$7 \leftarrow 7$	85.688 403	0.000 077
$8 \leftarrow 8$	85.692 978	−0.000 142
$9 \leftarrow 9$	85.698 465	−0.000 055
$10 \leftarrow 10$	85.704 459	−0.000 068
$11 \leftarrow 11$	85.710 972	−0.000 173
$12 \leftarrow 12$	85.718 390	0.000 015
$13 \leftarrow 13$	85.726 213	−0.000 009
$14 \leftarrow 14$	85.734 682	−0.000 007
$16 \leftarrow 16$	85.753 599	0.000 106
$17 \leftarrow 17$	85.763 740	−0.000 100
$18 \leftarrow 18$	85.775 046	0.000 225
$19 \leftarrow 19$	85.786 448	0.000 006
$20 \leftarrow 20$	85.798 629	−0.000 078
$21 \leftarrow 21$	85.811 540	−0.000 082
$22 \leftarrow 22$	85.825 134	−0.000 057
$23 \leftarrow 23$	85.839 427	0.000 008
$24 \leftarrow 24$	85.854 391	0.000 077
$25 \leftarrow 25$	85.869 554	−0.000 326 *
$26 \leftarrow 26$	85.886 062	−0.000 062
$27 \leftarrow 27$	85.903 084	0.000 031
$28 \leftarrow 28$	85.920 601	−0.000 071
$29 \leftarrow 29$	85.939 030	0.000 040
$30 \leftarrow 30$	85.957 983	−0.000 029
$31 \leftarrow 31$	85.977 800	0.000 054
$32 \leftarrow 32$	85.998 299	0.000 098
$33 \leftarrow 33$	86.019 353	−0.000 029
$34 \leftarrow 34$	86.041 391	0.000 092
$35 \leftarrow 35$	86.063 912	−0.000 046

	$36 \leftarrow 36$	86.087 495	0.000 126
	$37 \leftarrow 37$	86.111 507	−0.000 032
	$38 \leftarrow 38$	86.136 454	−0.000 023
	$39 \leftarrow 39$	86.162 156	−0.000 036
	$40 \leftarrow 40$	86.188 691	0.000 000
	$41 \leftarrow 41$	86.215 944	−0.000 039
	$42 \leftarrow 42$	86.244 181	0.000 103
	$43 \leftarrow 43$	86.272 974	−0.000 009
	$44 \leftarrow 44$	86.302 732	0.000 025
	$45 \leftarrow 45$	86.333 299	0.000 039
	$46 \leftarrow 46$	86.364 723	0.000 074
	$47 \leftarrow 47$	86.396 836	−0.000 047
	$48 \leftarrow 48$	86.430 064	0.000 093
	$49 \leftarrow 49$	86.463 952	0.000 032
	$50 \leftarrow 50$	86.498 732	−0.000 008
	$51 \leftarrow 51$	86.534 454	0.000 016
	$52 \leftarrow 52$	86.570 822	−0.000 199
	$53 \leftarrow 53$	86.608 644	0.000 145
	$54 \leftarrow 54$	86.646 907	0.000 030
	$55 \leftarrow 55$	86.686 203	0.000 039
	$56 \leftarrow 56$	86.726 313	−0.000 054
	$57 \leftarrow 57$	86.767 461	−0.000 030
	$58 \leftarrow 58$	86.809 473	−0.000 070
	$59 \leftarrow 59$	86.852 529	−0.000 001
	$60 \leftarrow 60$	86.896 188	−0.000 269
	$61 \leftarrow 61$	86.941 242	−0.000 087
	$62 \leftarrow 62$	86.987 068	−0.000 083
	$63 \leftarrow 63$	87.034 011	0.000 082
	$64 \leftarrow 64$	87.081 667	0.000 001
	$65 \leftarrow 65$	87.130 336	−0.000 030
	$66 \leftarrow 66$	87.179 821	−0.000 211
	$67 \leftarrow 67$	87.230 742	0.000 073
	$68 \leftarrow 68$	87.282 254	−0.000 024
	$69 \leftarrow 69$	87.334 908	0.000 047
	$70 \leftarrow 70$	87.388 551	0.000 129
	$72 \leftarrow 72$	87.498 288	−0.000 192
	$73 \leftarrow 73$	87.555 179	0.000 199
	$74 \leftarrow 74$	87.612 468	0.000 007
	$75 \leftarrow 75$	87.670 958	0.000 035
	$77 \leftarrow 77$	87.790 896	0.000 106
	$78 \leftarrow 78$	87.852 356	0.000 162
$(2\nu_7^0)^{0e} \leftarrow (\nu_7^1)^{1e}$, R-Zweig			
	$17 \leftarrow 16$	88.441 346	0.000 278
	$18 \leftarrow 17$	88.612 247	0.000 137
	$19 \leftarrow 18$	88.783 994	−0.000 082
	$20 \leftarrow 19$	88.957 105	0.000 136
	$21 \leftarrow 20$	89.130 680	−0.000 115
	$22 \leftarrow 21$	89.305 548	−0.000 010
	$24 \leftarrow 23$	89.657 962	0.000 047
	$26 \leftarrow 25$	90.014 119	0.000 036
	$27 \leftarrow 26$	90.193 858	0.000 248
	$28 \leftarrow 27$	90.374 055	−0.000 053
	$29 \leftarrow 28$	90.555 411	−0.000 171
	$30 \leftarrow 29$	90.738 041	0.000 002
	$31 \leftarrow 30$	90.921 353	−0.000 133
	$32 \leftarrow 31$	91.106 022	0.000 093
	$33 \leftarrow 32$	91.291 393	0.000 017
	$37 \leftarrow 36$	92.043 606	0.000 264
	$38 \leftarrow 37$	92.233 907	−0.000 009

39 ← 38	92.425 259	−0.000 279
40 ← 39	92.618 332	0.000 117
41 ← 40	92.812 038	0.000 082
45 ← 44	93.597 522	−0.000 193
46 ← 45	93.796 896	0.000 004
48 ← 47	94.198 626	0.000 041
49 ← 48	94.401 169	0.000 053

$(2\nu_7^2)^{2e} \leftarrow (\nu_7^1)^{1e}$, P-Zweig

9 ← 10		
10 ← 11	82.194 045	−0.000 203
11 ← 12	82.049 546	−0.000 209
12 ← 13	81.906 012	−0.000 184
13 ← 14	81.763 595	0.000 028
14 ← 15		
15 ← 16		
16 ← 17	81.341 348	0.000 126
17 ← 18	81.202 119	−0.000 154
18 ← 19	81.064 156	−0.000 078
19 ← 20	80.927 063	−0.000 036
20 ← 21	80.791 045	0.000 182
21 ← 22	80.655 557	0.000 036
22 ← 23	80.521 120	0.000 054
23 ← 24	80.387 453	−0.000 040
24 ← 25	80.254 721	−0.000 073
25 ← 26	80.122 891	−0.000 074
26 ← 27	79.992 061	0.000 064
27 ← 28	79.861 801	−0.000 082
28 ← 29	79.732 723	0.000 106
29 ← 30	79.604 135	−0.000 055
30 ← 31	79.476 513	−0.000 081
31 ← 32	79.349 751	−0.000 071
32 ← 33	79.223 837	−0.000 028
33 ← 34	79.098 741	0.000 026
34 ← 35	78.974 399	0.000 037
35 ← 36	78.850 742	−0.000 056
36 ← 37	78.728 085	0.000 071
37 ← 38	78.605 989	−0.000 011
38 ← 39	78.484 719	−0.000 028
39 ← 40	78.364 241	−0.000 005
40 ← 41	78.244 490	0.000 004
41 ← 42	78.125 451	−0.000 007
42 ← 43	78.007 106	−0.000 047
43 ← 44	77.889 579	0.000 020
44 ← 45	77.772 731	0.000 063
45 ← 46	77.656 387	−0.000 083
46 ← 47	77.540 904	−0.000 050
47 ← 48	77.425 834	−0.000 276
48 ← 49	77.311 968	0.000 039
49 ← 50	77.198 464	0.000 063
50 ← 51	77.085 555	0.000 038
51 ← 52	76.973 288	0.000 022
52 ← 53	76.861 617	−0.000 022
53 ← 54	76.750 582	−0.000 046
54 ← 55	76.640 187	−0.000 036
55 ← 56	76.530 271	−0.000 144
56 ← 57	76.421 177	−0.000 019
57 ← 58	76.312 559	0.000 001
58 ← 59	76.204 440	−0.000 052

$(2\nu_7^2)^{2f} \leftarrow (\nu_7^1)^{1f}$, P-Zweig

9 ← 10	82.324 203	0.000 344 *
10 ← 11	82.174 959	−0.000 336 *
11 ← 12	82.027 816	0.000 423 *
12 ← 13	81.880 214	0.000 062
13 ← 14	81.733 276	−0.000 298
14 ← 15	81.587 847	0.000 189
15 ← 16	81.442 291	−0.000 112
16 ← 17	81.297 876	0.000 065
17 ← 18	81.154 445	0.000 565 *
18 ← 19		
19 ← 20	80.868 084	0.000 079
20 ← 21	80.726 301	0.000 240
21 ← 22		
22 ← 23	80.443 800	−0.000 356 *
23 ← 24	80.304 407	0.000 211
24 ← 25	80.164 915	0.000 018
25 ← 26	80.026 168	−0.000 092
26 ← 27	79.888 197	−0.000 087
27 ← 28	79.751 215	0.000 246
28 ← 29	79.614 258	−0.000 057
29 ← 30	79.478 520	0.000 199
30 ← 31	79.343 024	0.000 036
31 ← 32	79.208 345	0.000 030
32 ← 33	79.074 261	−0.000 042
33 ← 34	78.940 959	0.000 009
34 ← 35	78.808 163	−0.000 094
35 ← 36	78.676 268	0.000 045
36 ← 37	78.545 138	0.000 289
37 ← 38	78.414 238	0.000 104
38 ← 39	78.284 032	−0.000 045
39 ← 40	78.154 614	−0.000 064
40 ← 41	78.025 975	0.000 037
41 ← 42	77.897 821	−0.000 035
42 ← 43	77.770 410	−0.000 021
43 ← 44	77.643 760	0.000 097
44 ← 45	77.517 574	0.000 022
45 ← 46	77.392 076	−0.000 021
46 ← 47	77.267 345	0.000 047
47 ← 48	77.143 040	−0.000 116
48 ← 49	77.019 731	0.000 063
49 ← 50	76.896 986	0.000 150
50 ← 51	76.774 587	−0.000 071
51 ← 52	76.653 140	0.000 006
52 ← 53	76.532 381	0.000 117
53 ← 54	76.412 059	0.000 012
54 ← 55	76.292 571	0.000 089
55 ← 56	76.173 589	0.000 018
56 ← 57	76.055 299	−0.000 012
57 ← 58	75.937 560	−0.000 142
58 ← 59	75.820 710	−0.000 034

59 ← 60	76.096 927	−0.000 064
60 ← 61	75.990 075	0.000 029
61 ← 62	75.883 818	0.000 166
62 ← 63	75.777 750	−0.000 051
63 ← 64	75.672 317	−0.000 170
64 ← 65	75.567 578	−0.000 126
65 ← 66	75.463 427	−0.000 018
66 ← 67	75.359 605	−0.000 101
67 ← 68	75.256 553	0.000 073
68 ← 69	75.153 766	0.000 001
69 ← 70	75.051 635	0.000 081
70 ← 71	74.949 902	0.000 057
71 ← 72	74.848 567	−0.000 066
72 ← 73	74.747 920	0.000 004
73 ← 74	74.647 533	−0.000 156
74 ← 75	74.548 081	0.000 130
75 ← 76	74.448 720	0.000 021
76 ← 77	74.350 035	0.000 105
77 ← 78	74.251 492	−0.000 152
78 ← 79	74.153 848	0.000 009
79 ← 80	74.056 551	0.000 039
80 ← 81	73.959 762	0.000 097
81 ← 82	73.863 404	0.000 110
82 ← 83	73.767 299	−0.000 102
83 ← 84	73.671 849	−0.000 136
84 ← 85	73.576 714	−0.000 331
85 ← 86	73.482 390	−0.000 192
86 ← 87	73.388 678	0.000 083
87 ← 88	73.294 849	−0.000 237
88 ← 89	73.202 110	0.000 056
89 ← 90	73.109 525	0.000 025
90 ← 91	73.017 549	0.000 124
91 ← 92	72.926 246	0.000 416 *
92 ← 93	72.834 877	0.000 161
93 ← 94	72.744 138	0.000 055
94 ← 95	72.653 967	0.000 035
96 ← 97	72.474 959	−0.000 125
98 ← 99	72.298 106	−0.000 073
99 ← 100	72.210 328	−0.000 130

$(2\nu_7^2)^{2f} \leftarrow (\nu_7^1)^{1e}$, Q-Zweig

5 ← 5		
6 ← 6		
7 ← 7		
8 ← 8		
9 ← 9		
10 ← 10		
11 ← 11	83.908 517	−0.000 074
12 ← 12	83.920 064	0.000 079
13 ← 13	83.932 541	0.000 214
14 ← 14	83.945 790	0.000 173
15 ← 15	83.959 601	−0.000 254
16 ← 16	83.974 933	−0.000 106
17 ← 17	83.991 194	0.000 025
18 ← 18	84.008 180	−0.000 066
19 ← 19		
20 ← 20	84.045 393	0.000 159
21 ← 21	84.065 083	−0.000 062
22 ← 22	84.085 932	−0.000 067

59 ← 60	75.704 324	−0.000 113
60 ← 61	75.588 707	−0.000 072
61 ← 62	75.473 619	−0.000 152
62 ← 63	75.359 605	0.000 194
63 ← 64	75.245 600	−0.000 100
64 ← 65	75.132 649	0.000 013
65 ← 66	75.020 343	0.000 124
66 ← 67	74.908 409	−0.000 040
67 ← 68	74.797 235	−0.000 089
68 ← 69	74.686 946	0.000 101
69 ← 70	74.576 988	−0.000 022
70 ← 71	74.467 966	0.000 147
71 ← 72	74.359 210	−0.000 062
72 ← 73	74.251 492	0.000 125
73 ← 74	74.144 018	−0.000 086
74 ← 75	74.037 628	0.000 146
75 ← 76	73.931 473	−0.000 028
76 ← 77		
77 ← 78	73.721 581	0.000 123
78 ← 79	73.617 660	0.000 265
79 ← 80	73.514 119	0.000 150
80 ← 81	73.411 079	−0.000 101
81 ← 82	73.308 932	−0.000 095
82 ← 83	73.207 763	0.000 253
83 ← 84		
84 ← 85	73.006 602	0.000 224
85 ← 86	72.906 719	−0.000 043
86 ← 87	72.807 859	0.000 081
87 ← 88		
88 ← 89		
89 ← 90		
90 ← 91		
91 ← 92		
92 ← 93		
93 ← 94		
94 ← 95		
96 ← 97		
98 ← 99		
99 ← 100		

$(2\nu_7^2)^{2e} \leftarrow (\nu_7^1)^{1f}$, Q-Zweig

5 ← 5	83.855 628	−0.000 174
6 ← 6	83.859 962	0.000 204
7 ← 7	83.864 254	−0.000 116
8 ← 8	83.869 693	0.000 057
9 ← 9	83.875 596	0.000 044
10 ← 10	83.882 163	0.000 045
11 ← 11		
12 ← 12		
13 ← 13	83.905 837	0.000 156
14 ← 14	83.915 006	0.000 192
15 ← 15	83.924 585	0.000 006
16 ← 16	83.934 937	−0.000 037
17 ← 17	83.945 790	−0.000 203
18 ← 18	83.957 609	−0.000 024
19 ← 19	83.969 929	0.000 042
20 ← 20	83.982 768	0.000 015
21 ← 21	83.996 289	0.000 066
22 ← 22	84.010 365	0.000 072

23 ← 23	84.107 414	−0.000 383 *
24 ← 24	84.130 545	0.000 008
25 ← 25	84.154 213	−0.000 005
26 ← 26	84.178 701	−0.000 140
27 ← 27	84.204 488	0.000 084
28 ← 28	84.230 884	−0.000 023
29 ← 29	84.258 469	0.000 121
30 ← 30	84.286 688	−0.000 039
31 ← 31	84.315 951	−0.000 093
32 ← 32	84.346 325	0.000 028
33 ← 33	84.377 598	0.000 113
34 ← 34	84.409 518	−0.000 089
35 ← 35	84.442 620	−0.000 043
36 ← 36	84.476 579	−0.000 073
37 ← 37	84.511 384	−0.000 188
38 ← 38	84.547 250	−0.000 173
39 ← 39	84.584 156	−0.000 047
40 ← 40	84.621 966	0.000 055
41 ← 41	84.660 724	0.000 177
42 ← 42	84.700 152	0.000 043
43 ← 43	84.740 661	0.000 065
44 ← 44	84.782 014	0.000 007
45 ← 45	84.824 219	−0.000 121
46 ← 46	84.867 601	0.000 006
47 ← 47	84.911 424	−0.000 346 *
48 ← 48	84.956 815	−0.000 049
49 ← 49	85.002 847	−0.000 028
50 ← 50	85.049 754	−0.000 049
51 ← 51	85.097 554	−0.000 091
52 ← 52	85.146 387	−0.000 014
53 ← 53	85.196 058	−0.000 011
54 ← 54	85.246 605	−0.000 043
55 ← 55	85.298 184	0.000 048
56 ← 56	85.350 602	0.000 070
57 ← 57	85.404 154	0.000 320 *
58 ← 58	85.458 118	0.000 077
59 ← 59	85.513 095	−0.000 056
60 ← 60	85.569 128	−0.000 034
61 ← 61	85.626 061	−0.000 013
62 ← 62	85.683 900	0.000 016
63 ← 63	85.742 789	0.000 198
64 ← 64	85.802 226	0.000 032
65 ← 65	85.862 811	0.000 122
66 ← 66	85.923 758	−0.000 319 *
67 ← 67	85.986 275	−0.000 079
68 ← 68	86.049 364	−0.000 156
69 ← 69	86.113 722	0.000 150
70 ← 70	86.178 574	0.000 064
71 ← 71	86.244 181	−0.000 149
72 ← 72	86.310 923	−0.000 108
73 ← 73	86.378 558	−0.000 054
74 ← 74	86.446 942	−0.000 128
75 ← 75	86.516 285	−0.000 119

$(2\nu_7^2)^{2e} \leftarrow (\nu_7^1)^{1e}$, R-Zweig

5 ← 4	84.634 443	−0.000 149
6 ← 5	84.795 197	0.000 025
7 ← 6	84.956 815	0.000 119
8 ← 7	85.118 934	−0.000 227

23 ← 23	84.025 401	0.000 445 *
24 ← 24	84.040 166	−0.000 041
25 ← 25	84.055 817	−0.000 222
26 ← 26	84.072 465	0.000 020
27 ← 27	84.089 487	0.000 068
28 ← 28	84.107 414	0.000 460 *
29 ← 29	84.124 967	−0.000 075
30 ← 30	84.143 770	0.000 094
31 ← 31	84.162 790	−0.000 058
32 ← 32	84.182 516	−0.000 034
33 ← 33	84.202 773	−0.000 001
34 ← 34	84.223 284	−0.000 228
35 ← 35	84.244 701	−0.000 053
36 ← 36	84.266 618	0.000 125
37 ← 37	84.288 674	−0.000 046
38 ← 38	84.311 297	−0.000 128
39 ← 39	84.334 579	−0.000 021
40 ← 40	84.358 210	−0.000 025
41 ← 41	84.382 210	−0.000 112
42 ← 42	84.406 910	0.000 060
43 ← 43	84.431 743	−0.000 068
44 ← 44	84.457 251	0.000 056
45 ← 45	84.482 808	−0.000 185
46 ← 46	84.509 199	0.000 003
47 ← 47	84.535 860	0.000 066
48 ← 48	84.562 836	0.000 058
49 ← 49	84.590 143	0.000 004
50 ← 50	84.617 873	0.000 005
51 ← 51	84.645 966	0.000 010
52 ← 52	84.674 275	−0.000 119
53 ← 53	84.702 784	−0.000 390 *
54 ← 54	84.732 283	−0.000 005
55 ← 55	84.761 630	−0.000 097
56 ← 56	84.791 304	−0.000 180
57 ← 57	84.821 406	−0.000 145
58 ← 58		
59 ← 59		
60 ← 60		
61 ← 61	84.944 695	−0.000 084
62 ← 62	84.976 131	−0.000 163
63 ← 63	85.008 050	−0.000 029
64 ← 64	85.040 253	0.000 122
65 ← 65	85.072 450	0.000 007
66 ← 66	85.105 190	0.000 178
67 ← 67	85.137 839	0.000 007
68 ← 68	85.170 827	−0.000 074
69 ← 69		
70 ← 70		
71 ← 71		
72 ← 72		
73 ← 73		
74 ← 74		
75 ← 75		

$(2\nu_7^2)^{2f} \leftarrow (\nu_7^1)^{1f}$, R-Zweig

5 ← 4		
6 ← 5		
7 ← 6		
8 ← 7		

9 ← 8	85.282 321	−0.000 245
10 ← 9	85.446 939	0.000 033
11 ← 10		
12 ← 11	85.778 547	0.000 163
13 ← 12	85.945 458	−0.000 056
14 ← 13	86.113 722	0.000 155
15 ← 14	86.282 408	−0.000 131
16 ← 15	86.452 133	−0.000 292
17 ← 16	86.623 390	0.000 169
18 ← 17	86.794 980	0.000 059
20 ← 19	87.140 719	−0.000 296
21 ← 20	87.315 495	0.000 099
22 ← 21	87.491 069	0.000 409 *
23 ← 22		
24 ← 23	87.844 310	0.000 502 *
25 ← 24	88.021 942	0.000 264
26 ← 25	88.200 389	−0.000 015
27 ← 26	88.379 741	−0.000 236
28 ← 27	88.560 681	0.000 291
29 ← 28	88.741 590	−0.000 045
30 ← 29	88.923 562	−0.000 141
31 ← 30	89.106 705	0.000 117
32 ← 31	89.290 258	−0.000 021
33 ← 32		
34 ← 33		
35 ← 34		
36 ← 35		
37 ← 36		
39 ← 38	90.597 791	−0.000 155
40 ← 39	90.787 736	−0.000 024
41 ← 40	90.978 364	0.000 069
42 ← 41	91.169 571	0.000 029
43 ← 42	91.361 491	0.000 002
44 ← 43	91.554 013	−0.000 116
45 ← 44	91.747 671	0.000 223
46 ← 45	91.941 480	0.000 041
47 ← 46	92.136 152	0.000 062
48 ← 47	92.331 385	−0.000 007
49 ← 48	92.527 246	−0.000 088
50 ← 49	92.723 862	−0.000 045
51 ← 50		
52 ← 51	93.118 994	0.000 089
53 ← 52	93.317 306	−0.000 006
54 ← 53	93.516 070	−0.000 241
55 ← 54	93.715 843	−0.000 050
56 ← 55	93.916 146	0.000 096
57 ← 56	94.117 192	0.000 419 *
58 ← 57	94.317 460	−0.000 593 *
59 ← 58	94.520 063	0.000 179 *
60 ← 59	94.722 727	0.000 471 *
61 ← 60	94.925 306	0.000 143
62 ← 61	95.128 803	0.000 206
63 ← 62	95.332 812	0.000 259
64 ← 63	95.537 142	0.000 119
65 ← 64	95.741 931	−0.000 070
66 ← 65	95.947 607	0.000 125
68 ← 67	96.360 123	0.000 192
69 ← 68	96.567 084	0.000 194
70 ← 69	96.774 245	−0.000 087

9 ← 8	85.272 265	0.000 025
10 ← 9	85.433 997	−0.000 024
11 ← 10	85.596 321	−0.000 140
12 ← 11	85.759 768	0.000 208
13 ← 12	85.923 758	0.000 441 *
14 ← 13	86.087 495	−0.000 237
15 ← 14	86.252 807	0.000 003
16 ← 15	86.418 548	0.000 013
17 ← 16	86.584 638	−0.000 284
18 ← 17	86.752 057	0.000 091
20 ← 19		
21 ← 20	87.257 240	0.000 206
22 ← 21	87.426 603	−0.000 098
23 ← 22	87.596 889	−0.000 135
24 ← 23	87.768 044	0.000 044
25 ← 24		
26 ← 25		
27 ← 26	88.284 786	−0.000 067
28 ← 27	88.458 465	0.000 022
29 ← 28	88.632 475	−0.000 211
30 ← 29	88.807 414	−0.000 166
31 ← 30	88.983 302	0.000 176
32 ← 31	89.159 346	0.000 023
33 ← 32	89.336 145	−0.000 025
34 ← 33	89.513 360	−0.000 307
35 ← 34	89.691 753	−0.000 060
36 ← 35	89.870 755	0.000 147
37 ← 36	90.049 781	−0.000 271
39 ← 38		
40 ← 39	90.592 280	0.000 014
41 ← 40	90.774 215	−0.000 081
42 ← 41	90.957 075	0.000 102
43 ← 42	91.140 380	0.000 087
44 ← 43	91.324 706	0.000 447 *
45 ← 44	91.509 117	0.000 250
46 ← 45	91.694 167	0.000 048
47 ← 46		
48 ← 47	92.066 489	−0.000 059
49 ← 48	92.253 706	−0.000 018
50 ← 49	92.441 708	0.000 168
51 ← 50	92.629 939	−0.000 057
52 ← 51	92.818 816	−0.000 275
53 ← 52		
54 ← 53		
55 ← 54	93.390 494	0.000 293
56 ← 55	93.582 081	0.000 237
57 ← 56	93.774 405	0.000 283
58 ← 57	93.967 103	0.000 069
59 ← 58		
60 ← 59		
61 ← 60		
62 ← 61		
63 ← 62		
64 ← 63		
65 ← 64		
66 ← 65		
68 ← 67		
69 ← 68		
70 ← 69		

$75 \leftarrow 74$	97.818 535	−0.000 137	$75 \leftarrow 74$
$76 \leftarrow 75$	98.028 998	0.000 053	$76 \leftarrow 75$
$77 \leftarrow 76$	98.239 822	0.000 141	$77 \leftarrow 76$
$78 \leftarrow 77$	98.450 949	0.000 071	$78 \leftarrow 77$
$79 \leftarrow 78$	98.662 401	−0.000 134	$79 \leftarrow 78$
$80 \leftarrow 79$	98.874 777	0.000 127	$80 \leftarrow 79$
$85 \leftarrow 84$	99.942 294	0.000 217	$85 \leftarrow 84$
$86 \leftarrow 85$	100.156 916	−0.000 014	$86 \leftarrow 85$
$87 \leftarrow 86$	100.372 509	0.000 271	$87 \leftarrow 86$
$88 \leftarrow 87$	100.587 788	−0.000 215	$88 \leftarrow 87$
$90 \leftarrow 89$	101.020 574	−0.000 327	$90 \leftarrow 89$
$91 \leftarrow 90$	101.238 220	0.000 184	$91 \leftarrow 90$
$92 \leftarrow 91$	101.455 430	−0.000 199	$92 \leftarrow 91$
$93 \leftarrow 92$	101.673 921	0.000 240	$93 \leftarrow 92$
$94 \leftarrow 93$	101.892 309	0.000 117	$94 \leftarrow 93$
$95 \leftarrow 94$	102.111 029	−0.000 136	$95 \leftarrow 94$
$(3\nu_7^1)^{1e} \leftarrow (2\nu_7^0)^{0e}$, P-Zweig			
$8 \leftarrow 9$	86.452 133	0.000 059	
$10 \leftarrow 11$	86.149 021	−0.000 121	
$11 \leftarrow 12$	85.998 299	−0.000 049	
$12 \leftarrow 13$	85.847 993	−0.000 007	
$13 \leftarrow 14$	85.698 465	0.000 368 *	
$14 \leftarrow 15$	85.548 630	−0.000 005	
$15 \leftarrow 16$	85.399 724	0.000 110	
$16 \leftarrow 17$	85.250 776	−0.000 255	
$17 \leftarrow 18$	85.102 945	0.000 061	
$19 \leftarrow 20$	84.807 831	−0.000 058	
$20 \leftarrow 21$	84.660 724	−0.000 312	
$21 \leftarrow 22$	84.514 510	−0.000 098	
$22 \leftarrow 23$	84.368 484	−0.000 120	
$23 \leftarrow 24$	84.223 284	0.000 264	
$24 \leftarrow 25$	84.077 982	0.000 129	
$25 \leftarrow 26$	83.932 541	−0.000 560 *	
$26 \leftarrow 27$	83.788 675	−0.000 085	
$27 \leftarrow 28$	83.644 888	0.000 061	
$28 \leftarrow 29$	83.501 379	0.000 079	
$29 \leftarrow 30$	83.358 225	0.000 050	
$30 \leftarrow 31$	83.215 483	0.000 035	
$31 \leftarrow 32$	83.072 957	−0.000 161	
$32 \leftarrow 33$	82.931 192	0.000 012	
$33 \leftarrow 34$	82.789 656	0.000 024	
$34 \leftarrow 35$	82.648 525	0.000 055	
$35 \leftarrow 36$	82.507 690	−0.000 002	
$36 \leftarrow 37$	82.367 325	0.000 030	
$37 \leftarrow 38$	82.227 238	−0.000 039	
$38 \leftarrow 39$	82.087 785	0.000 151	
$39 \leftarrow 40$	81.948 410	0.000 045	
$40 \leftarrow 41$	81.809 633	0.000 166	
$42 \leftarrow 43$	81.532 797	0.000 019	
$43 \leftarrow 44$	81.394 503	−0.000 481 *	
$44 \leftarrow 45$	81.257 464	−0.000 092	
$45 \leftarrow 46$	81.120 582	0.000 089	
$46 \leftarrow 47$	80.983 749	−0.000 045	
$47 \leftarrow 48$	80.847 241	−0.000 219	
$48 \leftarrow 49$	80.711 374	−0.000 117	
$49 \leftarrow 50$	80.575 895	0.000 006	
$50 \leftarrow 51$	80.440 586	−0.000 068	
$52 \leftarrow 53$	80.171 310	0.000 012	
$53 \leftarrow 54$	80.037 093	−0.000 090	

$54 \leftarrow 55$	79.903 317	−0.000 130
$55 \leftarrow 56$	79.770 561	0.000 465 *
$56 \leftarrow 57$	79.637 386	0.000 253
$57 \leftarrow 58$	79.504 548	−0.000 018
$58 \leftarrow 59$	79.372 390	−0.000 011
$59 \leftarrow 60$	79.240 696	0.000 052
$60 \leftarrow 61$	79.109 325	0.000 021
$61 \leftarrow 62$	78.978 754	0.000 365 *
$62 \leftarrow 63$	78.848 071	0.000 163
$63 \leftarrow 64$	78.717 802	−0.000 068
$64 \leftarrow 65$	78.588 357	0.000 069
$65 \leftarrow 66$	78.459 108	−0.000 063
$66 \leftarrow 67$	78.330 695	0.000 164
$67 \leftarrow 68$	78.202 397	0.000 016
$68 \leftarrow 69$	78.074 702	−0.000 032
$69 \leftarrow 70$	77.947 605	0.000 003
$70 \leftarrow 71$	77.820 879	−0.000 121
$71 \leftarrow 72$	77.694 747	−0.000 195
$72 \leftarrow 73$	77.569 401	−0.000 042
$73 \leftarrow 74$	77.444 531	0.000 014

$(3\nu_7^1)^{1f} \leftarrow (2\nu_7^0)^{0e}$, Q-Zweig

$8 \leftarrow 8$	87.873 574	0.000 022
$9 \leftarrow 9$	87.882 320	−0.000 189
$10 \leftarrow 10$	87.892 449	−0.000 008
$11 \leftarrow 11$	87.903 477	0.000 085
$12 \leftarrow 12$	87.914 976	−0.000 338 *
$13 \leftarrow 13$	87.928 352	0.000 131
$14 \leftarrow 14$	87.942 138	0.000 029
$15 \leftarrow 15$	87.957 223	0.000 246
$16 \leftarrow 16$	87.973 025	0.000 203
$17 \leftarrow 17$	87.989 878	0.000 237
$18 \leftarrow 18$	88.007 534	0.000 102
$19 \leftarrow 19$	88.026 385	0.000 194
$20 \leftarrow 20$	88.046 135	0.000 220
$23 \leftarrow 23$	88.110 915	0.000 077
$24 \leftarrow 24$	88.134 287	−0.000 097
$25 \leftarrow 25$	88.158 788	−0.000 087
$26 \leftarrow 26$	88.184 302	−0.000 005
$27 \leftarrow 27$	88.210 638	−0.000 037
$28 \leftarrow 28$	88.237 849	−0.000 125
$29 \leftarrow 29$	88.266 153	−0.000 046
$30 \leftarrow 30$	88.295 277	−0.000 069
$31 \leftarrow 31$	88.325 452	0.000 044
$32 \leftarrow 32$	88.356 363	−0.000 017
$33 \leftarrow 33$	88.388 119	−0.000 138
$34 \leftarrow 34$	88.421 095	0.000 063
$35 \leftarrow 35$	88.454 674	−0.000 026
$36 \leftarrow 36$	88.489 231	−0.000 024
$37 \leftarrow 37$	88.524 675	−0.000 014
$38 \leftarrow 38$	88.560 681	−0.000 316 *
$39 \leftarrow 39$	88.598 232	0.000 059
$40 \leftarrow 40$	88.636 253	0.000 044
$41 \leftarrow 41$	88.675 072	−0.000 027
$42 \leftarrow 42$	88.714 796	−0.000 041
$43 \leftarrow 43$	88.755 455	0.000 040
$44 \leftarrow 44$	88.796 785	−0.000 042
$45 \leftarrow 45$	88.839 026	−0.000 040
$46 \leftarrow 46$	88.881 931	−0.000 193
$47 \leftarrow 47$	88.925 958	−0.000 039

$48 \leftarrow 48$	88.970 626	−0.000 050
$49 \leftarrow 49$	89.016 217	0.000 063
$50 \leftarrow 50$	89.062 556	0.000 130
$51 \leftarrow 51$	89.109 427	−0.000 058
$52 \leftarrow 52$	89.157 306	−0.000 018
$53 \leftarrow 53$	89.205 824	−0.000 114
$54 \leftarrow 54$	89.255 568	0.000 249
$55 \leftarrow 55$	89.305 548	0.000 085
$56 \leftarrow 56$	89.356 414	0.000 051
$57 \leftarrow 57$	89.407 969	−0.000 044
$58 \leftarrow 58$	89.460 399	−0.000 011
$59 \leftarrow 59$	89.513 360	−0.000 186
$60 \leftarrow 60$	89.567 529	0.000 111
$61 \leftarrow 61$	89.622 035	0.000 014
$62 \leftarrow 62$	89.677 296	−0.000 055
$63 \leftarrow 63$	89.733 450	0.000 048
$64 \leftarrow 64$	89.790 335	0.000 162
$65 \leftarrow 65$	89.847 503	−0.000 156
$66 \leftarrow 66$	89.905 933	0.000 077
$67 \leftarrow 67$	89.965 045	0.000 283
$68 \leftarrow 68$	90.024 423	0.000 049
$69 \leftarrow 69$	90.084 857	0.000 167
$70 \leftarrow 70$	90.145 949	0.000 241
$71 \leftarrow 71$	90.207 373	−0.000 051
$72 \leftarrow 72$	90.269 786	−0.000 053
$73 \leftarrow 73$	90.333 051	0.000 101
$74 \leftarrow 74$	90.396 847	0.000 091
$75 \leftarrow 75$	90.461 458	0.000 201
$76 \leftarrow 76$	90.526 600	0.000 149
$77 \leftarrow 77$	90.592 280	−0.000 058
$78 \leftarrow 78$	90.659 052	0.000 134
$79 \leftarrow 79$	90.726 137	−0.000 053
$80 \leftarrow 80$	90.793 984	−0.000 171
$81 \leftarrow 81$	90.862 639	−0.000 173
$82 \leftarrow 82$	90.932 139	−0.000 022
$83 \leftarrow 83$	91.001 917	−0.000 287
$(3\nu_7^1)^{1e} \leftarrow (2\nu_7^0)^{0e}$, R-Zweig		
$4 \leftarrow 3$	88.464 887	−0.000 460 *
$5 \leftarrow 4$	88.622 835	−0.000 569 *
$6 \leftarrow 5$	88.781 978	0.000 063
$7 \leftarrow 6$	88.940 729	−0.000 152
$8 \leftarrow 7$	89.100 379	0.000 079
$9 \leftarrow 8$	89.260 361	0.000 190
$10 \leftarrow 9$	89.420 723	0.000 230
$11 \leftarrow 10$	89.581 194	−0.000 071
$12 \leftarrow 11$	89.742 245	−0.000 241
$13 \leftarrow 12$	89.903 971	−0.000 182
$14 \leftarrow 13$	90.066 477	0.000 212
$15 \leftarrow 14$	90.229 332	0.000 512 *
$16 \leftarrow 15$	90.391 324	−0.000 493 *
$17 \leftarrow 16$	90.555 411	0.000 157 *
$18 \leftarrow 17$	90.719 467	0.000 340 *
$19 \leftarrow 18$	90.883 409	−0.000 027
$20 \leftarrow 19$	91.047 973	−0.000 204
$21 \leftarrow 20$	91.213 285	−0.000 063
$22 \leftarrow 21$	91.378 343	−0.000 604 *
$23 \leftarrow 22$	91.544 941	−0.000 030
$24 \leftarrow 23$	91.711 557	0.000 140
$25 \leftarrow 24$	91.878 408	0.000 126

$26 \leftarrow 25$	92.045 749	0.000 185
$27 \leftarrow 26$	92.213 457	0.000 198
$28 \leftarrow 27$	92.380 719	−0.000 646 *
$29 \leftarrow 28$	92.549 725	−0.000 154
$30 \leftarrow 29$	92.718 767	−0.000 030
$31 \leftarrow 30$	92.888 371	0.000 254
$32 \leftarrow 31$	93.057 317	−0.000 518 *
$33 \leftarrow 32$	93.227 802	−0.000 147 *
$34 \leftarrow 33$	93.398 788	0.000 332 *
$35 \leftarrow 34$	93.569 273	−0.000 079
$36 \leftarrow 35$	93.740 675	0.000 039
$37 \leftarrow 36$	93.912 174	−0.000 129
$38 \leftarrow 37$	94.084 235	−0.000 117
$39 \leftarrow 38$	94.256 802	0.000 021
$40 \leftarrow 39$	94.429 183	−0.000 403 *
$41 \leftarrow 40$	94.602 855	0.000 089
$42 \leftarrow 41$	94.776 286	−0.000 034
$43 \leftarrow 42$	94.950 537	0.000 292 *
$44 \leftarrow 43$	95.124 445	−0.000 095
$45 \leftarrow 44$	95.299 209	0.000 005
$46 \leftarrow 45$	95.474 137	−0.000 100
$47 \leftarrow 46$	95.649 747	0.000 109
$48 \leftarrow 47$	95.825 477	0.000 069
$49 \leftarrow 48$	96.001 189	−0.000 357 *
$50 \leftarrow 49$	96.178 393	0.000 339 *
$51 \leftarrow 50$	96.354 775	−0.000 159
$52 \leftarrow 51$	96.532 280	0.000 093
$53 \leftarrow 52$	96.709 876	0.000 060
$54 \leftarrow 53$	96.887 773	−0.000 051
$55 \leftarrow 54$	97.066 105	−0.000 110
$56 \leftarrow 55$	97.245 083	0.000 090
$57 \leftarrow 56$	97.424 302	0.000 139
$58 \leftarrow 57$	97.603 341	−0.000 389 *
$59 \leftarrow 58$	97.783 520	−0.000 181
$60 \leftarrow 59$	97.964 091	0.000 008
$61 \leftarrow 60$	98.145 007	0.000 125
$62 \leftarrow 61$	98.325 807	−0.000 301
$63 \leftarrow 62$	98.507 616	−0.000 153
$64 \leftarrow 63$	98.689 986	0.000 111
$65 \leftarrow 64$	98.872 278	−0.000 157
$66 \leftarrow 65$	99.055 463	0.000 003

$(3\nu_7^3)^{3e} \leftarrow (2\nu_7^2)^{2e}$, P-Zweig

$8 \leftarrow 9$	85.429 542	0.000 184
$9 \leftarrow 10$	85.280 232	−0.000 186
$21 \leftarrow 22$	83.554 008	0.000 054
$22 \leftarrow 23$	83.415 303	0.000 086
$23 \leftarrow 24$	83.277 214	−0.000 067
$24 \leftarrow 25$	83.140 121	−0.000 030
$25 \leftarrow 26$	83.003 626	−0.000 201
$26 \leftarrow 27$	82.868 265	−0.000 050
$27 \leftarrow 28$	82.733 822	0.000 207
$28 \leftarrow 29$	82.599 777	0.000 045
$29 \leftarrow 30$	82.466 620	−0.000 048
$30 \leftarrow 31$	82.334 295	−0.000 132
$31 \leftarrow 32$	82.202 417	−0.000 593 *
$32 \leftarrow 33$	82.072 459	0.000 037
$33 \leftarrow 34$	81.942 694	0.000 030
$34 \leftarrow 35$	81.813 701	−0.000 038

$(3\nu_7^3)^{3f} \leftarrow (2\nu_7^2)^{2f}$, P-Zweig

$8 \leftarrow 9$	85.429 542	0.000 267
$9 \leftarrow 10$	85.280 232	−0.000 061
$21 \leftarrow 22$	83.551 437	0.000 146
$22 \leftarrow 23$	83.412 068	0.000 016
$23 \leftarrow 24$		
$24 \leftarrow 25$	83.135 787	0.000 012
$25 \leftarrow 26$	82.998 610	−0.000 123
$26 \leftarrow 27$	82.862 277	−0.000 141
$27 \leftarrow 28$	82.726 880	0.000 053
$28 \leftarrow 29$	82.591 906	−0.000 051
$29 \leftarrow 30$	82.457 704	−0.000 101
$30 \leftarrow 31$	82.324 203	−0.000 165
$31 \leftarrow 32$	82.191 667	0.000 024
$32 \leftarrow 33$	82.059 548	−0.000 078
$33 \leftarrow 34$		
$34 \leftarrow 35$	81.797 681	−0.000 025

35 ← 36	81.685 608	−0.000 043
36 ← 37	81.558 439	0.000 038
37 ← 38	81.431 987	−0.000 005
38 ← 39	81.306 381	−0.000 045
39 ← 40	81.181 771	0.000 066
40 ← 41	81.057 849	0.000 019
41 ← 42	80.934 808	0.000 004
42 ← 43	80.812 690	0.000 063
43 ← 44	80.691 255	−0.000 045
44 ← 45	80.571 003	0.000 179
45 ← 46	80.451 201	0.000 002
46 ← 47	80.332 415	−0.000 010
47 ← 48	80.214 544	0.000 043
48 ← 49	80.097 542	0.000 116
49 ← 50	79.981 153	−0.000 045
50 ← 51	79.865 902	0.000 087
51 ← 52	79.751 215	−0.000 059
52 ← 53	79.637 386	−0.000 187
53 ← 54	79.524 688	−0.000 020
54 ← 55	79.412 750	0.000 077
55 ← 56	79.301 435	−0.000 029
56 ← 57	79.191 190	0.000 115
57 ← 58	79.081 486	−0.000 013
58 ← 59		
59 ← 60		
60 ← 61		
61 ← 62		
62 ← 63		
63 ← 64	78.440 676	−0.000 003
64 ← 65	78.336 465	−0.000 093
65 ← 66	78.233 184	0.000 010
66 ← 67	78.130 298	−0.000 217
67 ← 68	78.028 577	0.000 011
68 ← 69	77.927 435	0.000 121
69 ← 70	77.826 661	−0.000 084
70 ← 71	77.726 878	0.000 034
71 ← 72	77.627 951	0.000 355 *
72 ← 73	77.528 961	−0.000 025
73 ← 74	77.430 964	−0.000 033
74 ← 75	77.333 514	−0.000 098
75 ← 76	77.236 790	−0.000 027
76 ← 77	77.140 749	0.000 154
77 ← 78	77.044 938	0.000 010
78 ← 79		
79 ← 80	76.855 209	0.000 012
80 ← 81	76.761 115	0.000 014
81 ← 82	76.667 391	−0.000 104
82 ← 83		
83 ← 84		
84 ← 85		
85 ← 86		
88 ← 89		
89 ← 90		

$(3\nu_7^3)^{3f} \leftarrow (2\nu_7^2)^{2e}$, Q-Zweig

8 ← 8	86.831 891	0.000 012
9 ← 9	86.838 676	−0.000 085
10 ← 10	86.846 414	0.000 001
11 ← 11	86.854 774	−0.000 060

35 ← 36	81.667 832	0.000 037
36 ← 37	81.538 863	0.000 284
37 ← 38	81.410 046	−0.000 008
38 ← 39	81.282 134	−0.000 083
39 ← 40		
40 ← 41	81.028 531	−0.000 062
41 ← 42	80.902 665	−0.000 132
42 ← 43	80.777 705	0.000 030
43 ← 44	80.653 306	0.000 083
44 ← 45	80.529 453	0.000 017
45 ← 46	80.406 376	0.000 066
46 ← 47	80.283 884	0.000 041
47 ← 48	80.162 120	0.000 089
48 ← 49	80.040 863	−0.000 005
49 ← 50	79.920 303	−0.000 050
50 ← 51	79.800 407	−0.000 073
51 ← 52	79.681 099	−0.000 148
52 ← 53	79.562 682	0.000 033
53 ← 54	79.444 645	−0.000 038
54 ← 55	79.327 426	0.000 081
55 ← 56	79.210 669	0.000 038
56 ← 57	79.094 588	0.000 050
57 ← 58	78.978 754	−0.000 308
58 ← 59	78.864 472	0.000 272
59 ← 60	78.749 996	0.000 048
60 ← 61	78.636 329	0.000 027
61 ← 62	78.523 290	0.000 030
62 ← 63	78.410 783	−0.000 034
63 ← 64	78.298 899	−0.000 073
64 ← 65	78.187 747	0.000 028
65 ← 66	78.077 086	0.000 029
66 ← 67	77.966 932	−0.000 049
67 ← 68	77.857 563	0.000 073
68 ← 69	77.748 490	−0.000 089
69 ← 70	77.640 147	−0.000 100
70 ← 71	77.532 649	0.000 159
71 ← 72		
72 ← 73	77.318 457	−0.000 233
73 ← 74	77.212 583	−0.000 058
74 ← 75	77.107 056	−0.000 102
75 ← 76	77.002 334	0.000 098
76 ← 77		
77 ← 78	76.793 797	−0.000 272
78 ← 79	76.690 815	−0.000 003
79 ← 80	76.587 898	−0.000 223
80 ← 81	76.485 978	0.000 004
81 ← 82	76.384 368	−0.000 008
82 ← 83	76.283 302	−0.000 022
83 ← 84	76.183 063	0.000 246
84 ← 85	76.082 829	−0.000 023
85 ← 86	75.983 637	0.000 208
88 ← 89	75.688 593	0.000 206
89 ← 90	75.591 188	0.000 077

$(3\nu_7^3)^{3e} \leftarrow (2\nu_7^2)^{2f}$, Q-Zweig

8 ← 8	86.831 891	0.000 066
9 ← 9	86.838 676	−0.000 001
10 ← 10	86.846 414	0.000 128
11 ← 11	86.854 774	0.000 123

12 ← 12	86.863 756	−0.000 271
13 ← 13	86.873 854	−0.000 138
14 ← 14	86.884 502	−0.000 230
15 ← 15	86.896 188	−0.000 061
19 ← 19	86.950 399	0.000 280
20 ← 20	86.965 664	0.000 115
21 ← 21	86.981 829	0.000 060
22 ← 22	86.998 670	−0.000 112
23 ← 23	87.016 561	−0.000 030
24 ← 24		
25 ← 25	87.054 516	−0.000 093
26 ← 26	87.074 750	−0.000 075
27 ← 27	87.095 786	−0.000 064
28 ← 28	87.117 642	−0.000 046
30 ← 30	87.163 940	0.000 122
31 ← 31	87.188 253	0.000 136
32 ← 32	87.213 267	0.000 021
33 ← 33	87.238 951	−0.000 257
34 ← 34	87.265 854	−0.000 153
35 ← 35	87.293 662	0.000 014
36 ← 36	87.322 038	−0.000 099
37 ← 37	87.351 447	−0.000 030
38 ← 38		
39 ← 39		
41 ← 41	87.477 578	0.000 130
42 ← 42	87.511 163	0.000 044
43 ← 43	87.545 630	−0.000 040
44 ← 44	87.581 074	−0.000 033
45 ← 45	87.617 641	0.000 205
46 ← 46	87.654 763	0.000 103
47 ← 47	87.692 719	−0.000 065
48 ← 48		
49 ← 49		
50 ← 50	87.812 657	0.000 048
51 ← 51	87.854 572	0.000 190
52 ← 52	87.897 121	0.000 042
53 ← 53	87.940 207	−0.000 496 *
54 ← 54	87.985 381	0.000 123
55 ← 55	88.030 725	−0.000 022
56 ← 56	88.076 986	−0.000 189
57 ← 57	88.124 285	−0.000 260
58 ← 58	88.172 985	0.000 126
59 ← 59	88.221 956	−0.000 163
60 ← 60	88.272 080	−0.000 250
61 ← 61	88.323 309	−0.000 183
62 ← 62	88.375 552	−0.000 055
63 ← 63	88.428 640	−0.000 038
64 ← 64	88.482 591	−0.000 114
65 ← 65	88.537 894	0.000 206
66 ← 66	88.593 704	0.000 074
67 ← 67	88.650 336	−0.000 193
68 ← 68	88.708 283	−0.000 104
69 ← 69	88.767 020	−0.000 182
70 ← 70	88.827 128	0.000 154
71 ← 71	88.887 671	−0.000 031
72 ← 72	88.949 240	−0.000 146
73 ← 73	89.012 028	0.000 006
74 ← 74	89.075 739	0.000 129
75 ← 75	89.140 109	−0.000 039

12 ← 12	86.863 756	−0.000 015
13 ← 13	86.873 854	0.000 211
14 ← 14	86.884 502	0.000 237
15 ← 15		
19 ← 19		
20 ← 20	86.963 636	−0.000 017
21 ← 21	86.979 433	−0.000 036
22 ← 22	86.996 050	0.000 033
23 ← 23	87.013 132	−0.000 160
24 ← 24	87.031 386	0.000 094
25 ← 25	87.050 122	0.000 109
26 ← 26	87.069 311	−0.000 139
27 ← 27	87.089 508	−0.000 093
28 ← 28	87.110 435	−0.000 025
30 ← 30	87.154 240	−0.000 047
31 ← 31	87.177 249	0.000 004
32 ← 32	87.200 905	0.000 012
33 ← 33	87.225 140	−0.000 085
34 ← 34	87.250 275	0.000 038
35 ← 35	87.276 127	0.000 206
36 ← 36	87.302 264	−0.000 008
37 ← 37	87.329 354	0.000 071
38 ← 38	87.357 018	0.000 069
39 ← 39	87.385 273	0.000 011
41 ← 41		
42 ← 42	87.473 854	−0.000 154
43 ← 43	87.504 771	−0.000 062
44 ← 44	87.536 280	0.000 014
45 ← 45	87.568 428	0.000 129
46 ← 46	87.600 824	−0.000 097
47 ← 47	87.634 120	−0.000 003
48 ← 48	87.667 795	−0.000 101
49 ← 49	87.702 183	−0.000 047
50 ← 50	87.737 096	−0.000 017
51 ← 51		
52 ← 52		
53 ← 53		
54 ← 54		
55 ← 55	87.919 448	0.000 070
56 ← 56	87.957 223	−0.000 093
57 ← 57	87.995 733	0.000 015
58 ← 58	88.034 721	0.000 148
59 ← 59	88.073 980	0.000 116
60 ← 60		
61 ← 61	88.153 518	−0.000 183
62 ← 62	88.194 232	0.000 015
63 ← 63	88.235 115	0.000 005
64 ← 64	88.276 366	0.000 000
65 ← 65	88.317 816	−0.000 151
66 ← 66	88.359 804	−0.000 094
67 ← 67	88.402 407	0.000 264
68 ← 68	88.444 696	0.000 012
69 ← 69	88.487 233	−0.000 272
70 ← 70	88.530 693	0.000 104
71 ← 71	88.573 731	−0.000 188
72 ← 72	88.617 505	0.000 027
73 ← 73	88.661 563	0.000 315 *
74 ← 74	88.705 234	0.000 020
75 ← 75	88.749 316	−0.000 042

76 ← 76	89.205 824	0.000 190
77 ← 77	89.271 987	−0.000 077

$(3\nu_7^3)^{3e} \leftarrow (2\nu_7^2)^{2e}$, R-Zweig

9 ← 8	88.241 085	−0.000 197
10 ← 9	88.404 713	−0.000 042
11 ← 10	88.568 986	−0.000 008
12 ← 11	88.733 870	−0.000 130
22 ← 21	90.426 412	−0.000 083
23 ← 22	90.600 115	0.000 092
24 ← 23	90.774 215	−0.000 121
25 ← 24	90.949 801	0.000 364 *
26 ← 25	91.125 338	0.000 012
27 ← 26	91.302 107	0.000 099
28 ← 27	91.479 527	0.000 043
29 ← 28	91.657 799	0.000 044
30 ← 29	91.836 916	0.000 091
31 ← 30	92.016 582	−0.000 113
34 ← 33	92.561 079	−0.000 050
35 ← 34	92.744 185	−0.000 037
36 ← 35	92.927 696	−0.000 430 *
37 ← 36	93.112 910	0.000 068 *
38 ← 37	93.298 751	0.000 379 *
39 ← 38	93.484 465	−0.000 252
40 ← 39	93.671 930	0.000 050
41 ← 40	93.859 551	−0.000 309
42 ← 41	94.048 531	−0.000 127
43 ← 42	94.238 308	0.000 032
44 ← 43	94.429 183	0.000 469 *
45 ← 44	94.619 943	−0.000 027
46 ← 45	94.812 110	0.000 064
47 ← 46	95.005 001	0.000 061
48 ← 47	95.198 647	−0.000 003
49 ← 48	95.393 047	−0.000 129
50 ← 49	95.588 443	−0.000 071
51 ← 50	95.784 805	0.000 142
52 ← 51	95.981 687	0.000 068
53 ← 52		
54 ← 53	96.377 918	−0.000 020
55 ← 54	96.577 243	−0.000 048 *
56 ← 55	96.776 967	−0.000 465 *
57 ← 56	96.978 490	0.000 134
58 ← 57		
59 ← 58	97.382 321	−0.000 202
60 ← 59	97.585 552	−0.000 199
61 ← 60	97.789 665	−0.000 064
62 ← 61		
63 ← 62		
64 ← 63		
66 ← 65		
68 ← 67		
69 ← 68		
70 ← 69		
71 ← 70		
72 ← 71		
73 ← 72		
74 ← 73		
76 ← 75		
78 ← 77		

76 ← 76	88.793 911	0.000 247
77 ← 77		

$(3\nu_7^3)^{3f} \leftarrow (2\nu_7^2)^{2f}$, R-Zweig

9 ← 8	88.241 085	−0.000 143
10 ← 9	88.404 713	0.000 041
11 ← 10	88.568 986	0.000 116
12 ← 11	88.733 870	0.000 050
22 ← 21		
23 ← 22		
24 ← 23		
25 ← 24	90.945 950	0.000 199
26 ← 25	91.121 240	0.000 229
27 ← 26	91.296 928	−0.000 058
28 ← 27	91.473 546	−0.000 128
29 ← 28	91.651 075	0.000 005
30 ← 29	91.829 189	0.000 016
31 ← 30		
34 ← 33		
35 ← 34		
36 ← 35	92.912 365	−0.000 042
37 ← 36	93.095 556	0.000 208
38 ← 37	93.279 006	0.000 042
39 ← 38	93.463 030	−0.000 223
40 ← 39	93.648 196	−0.000 014
41 ← 40	93.833 976	0.000 144
42 ← 41	94.020 427	0.000 314
43 ← 42	94.207 173	0.000 122
44 ← 43	94.394 511	−0.000 129
45 ← 44	94.582 374	−0.000 503 *
46 ← 45	94.771 644	−0.000 115 *
47 ← 46	94.960 865	−0.000 415 *
48 ← 47	95.151 275	−0.000 161
49 ← 48	95.342 259	0.000 034
50 ← 49		
51 ← 50	95.725 929	0.000 249
52 ← 51	95.918 621	0.000 282
53 ← 52	96.111 687	0.000 074
54 ← 53	96.305 804	0.000 305
55 ← 54	96.500 035	0.000 043
56 ← 55	96.694 906	−0.000 183
57 ← 56	96.890 586	−0.000 200
58 ← 57	97.087 057	−0.000 021
59 ← 58	97.283 829	−0.000 133
60 ← 59	97.481 579	0.000 144
61 ← 60	97.679 595	0.000 103
62 ← 61	97.878 541	0.000 410 *
63 ← 62	98.077 317	−0.000 029
64 ← 63	98.277 235	0.000 099
66 ← 65	98.678 355	−0.000 068
68 ← 67	99.081 823	−0.000 141
69 ← 68	99.284 771	0.000 199
70 ← 69	99.487 344	−0.000 390 *
71 ← 70	99.691 408	−0.000 039
72 ← 71	99.895 448	−0.000 260
73 ← 72	100.100 761	0.000 247
74 ← 73	100.305 858	−0.000 004
76 ← 75	100.718 338	0.000 163
78 ← 77	101.132 647	0.000 024

$79 \leftarrow 78$		
$80 \leftarrow 79$		
$(4\nu_7^2)^{2e} \leftarrow (3\nu_7^1)^{1e}$, P-Zweig		
$11 \leftarrow 12$		
$12 \leftarrow 13$		
$13 \leftarrow 14$		
$14 \leftarrow 15$		
$15 \leftarrow 16$		
$16 \leftarrow 17$		
$17 \leftarrow 18$		
$18 \leftarrow 19$		
$19 \leftarrow 20$	86.984 654	0.000 100
$20 \leftarrow 21$	86.846 414	−0.000 062
$21 \leftarrow 22$	86.709 188	0.000 035
$22 \leftarrow 23$		
$23 \leftarrow 24$		
$24 \leftarrow 25$		
$25 \leftarrow 26$	86.166 593	−0.000 373 *
$26 \leftarrow 27$	86.033 568	0.000 487 *
$27 \leftarrow 28$	85.900 133	0.000 320 *
$28 \leftarrow 29$	85.766 909	−0.000 229
$29 \leftarrow 30$	85.635 079	0.000 048
$30 \leftarrow 31$	85.503 437	−0.000 032
$31 \leftarrow 32$	85.372 434	0.000 007
$32 \leftarrow 33$	85.242 156	0.000 274
$33 \leftarrow 34$	85.111 558	−0.000 253
$34 \leftarrow 35$	84.982 040	−0.000 151
$36 \leftarrow 37$	84.724 110	−0.000 106
$37 \leftarrow 38$	84.595 842	0.000 022
$38 \leftarrow 39$	84.467 603	−0.000 189
$39 \leftarrow 40$	84.340 174	0.000 060
$40 \leftarrow 41$	84.212 643	−0.000 127
$41 \leftarrow 42$	84.085 932	0.000 191
$42 \leftarrow 43$		
$43 \leftarrow 44$	83.832 341	−0.000 237
$44 \leftarrow 45$	83.706 499	0.000 083
$45 \leftarrow 46$	83.580 434	−0.000 085
$46 \leftarrow 47$	83.454 810	−0.000 066
$47 \leftarrow 48$	83.329 518	0.000 039
$48 \leftarrow 49$	83.204 388	0.000 069
$49 \leftarrow 50$	83.079 446	0.000 057
$50 \leftarrow 51$	82.954 757	0.000 073
$51 \leftarrow 52$	82.830 316	0.000 118
$52 \leftarrow 53$	82.705 971	0.000 045
$53 \leftarrow 54$		
$54 \leftarrow 55$		
$55 \leftarrow 56$		
$57 \leftarrow 58$	82.087 785	0.000 099
$58 \leftarrow 59$	81.964 780	0.000 132
$59 \leftarrow 60$	81.841 890	0.000 078
$60 \leftarrow 61$	81.719 266	0.000 088
$61 \leftarrow 62$	81.596 992	0.000 246
$64 \leftarrow 65$	81.230 845	0.000 171
$65 \leftarrow 66$	81.108 987	−0.000 076
$68 \leftarrow 69$	80.745 339	−0.000 164
$69 \leftarrow 70$	80.624 658	−0.000 093
$70 \leftarrow 71$	80.504 599	0.000 375 *
$71 \leftarrow 72$	80.384 163	0.000 238 *

$79 \leftarrow 78$	101.340 810	0.000 167
$80 \leftarrow 79$	101.549 190	0.000 001
$(4\nu_7^2)^{2f} \leftarrow (3\nu_7^1)^{1f}$, P-Zweig		
$11 \leftarrow 12$	88.076 986	−0.000 247
$12 \leftarrow 13$	87.925 593	−0.000 135
$13 \leftarrow 14$	87.774 919	0.000 255
$14 \leftarrow 15$	87.624 081	0.000 041
$15 \leftarrow 16$	87.473 854	−0.000 003
$16 \leftarrow 17$	87.324 374	0.000 259
$17 \leftarrow 18$	87.174 968	0.000 154
$18 \leftarrow 19$	87.025 832	−0.000 123
$19 \leftarrow 20$		
$20 \leftarrow 21$		
$21 \leftarrow 22$		
$22 \leftarrow 23$	86.435 026	0.000 082
$23 \leftarrow 24$	86.288 354	0.000 054
$24 \leftarrow 25$	86.141 953	−0.000 148
$25 \leftarrow 26$	85.996 168	−0.000 179
$26 \leftarrow 27$	85.850 884	−0.000 156
$27 \leftarrow 28$	85.706 559	0.000 379 *
$28 \leftarrow 29$	85.561 879	0.000 112
$29 \leftarrow 30$	85.417 838	0.000 035
$30 \leftarrow 31$	85.274 625	0.000 336 *
$31 \leftarrow 32$	85.131 483	0.000 257
$32 \leftarrow 33$	84.988 572	−0.000 043
$33 \leftarrow 34$	84.846 529	0.000 072
$34 \leftarrow 35$		
$36 \leftarrow 37$	84.422 646	−0.000 070
$37 \leftarrow 38$	84.282 481	0.000 096
$38 \leftarrow 39$		
$39 \leftarrow 40$		
$40 \leftarrow 41$	83.864 254	0.000 089
$41 \leftarrow 42$	83.725 646	−0.000 042
$42 \leftarrow 43$	83.587 732	0.000 052
$43 \leftarrow 44$	83.450 313	0.000 169
$44 \leftarrow 45$	83.312 960	−0.000 120
$45 \leftarrow 46$	83.176 863	0.000 371 *
$46 \leftarrow 47$	83.040 621	0.000 238
$47 \leftarrow 48$	82.904 476	−0.000 278
$48 \leftarrow 49$	82.769 653	0.000 043
$49 \leftarrow 50$	82.635 203	0.000 251
$50 \leftarrow 51$	82.500 633	−0.000 151
$51 \leftarrow 52$	82.367 325	0.000 216
$52 \leftarrow 53$	82.233 751	−0.000 179
$53 \leftarrow 54$	82.101 125	−0.000 126
$54 \leftarrow 55$	81.969 054	−0.000 021
$55 \leftarrow 56$	81.837 532	0.000 126
$57 \leftarrow 58$	81.575 515	−0.000 089
$58 \leftarrow 59$	81.445 261	−0.000 218
$59 \leftarrow 60$	81.315 683	−0.000 192
$60 \leftarrow 61$		
$61 \leftarrow 62$		
$64 \leftarrow 65$		
$65 \leftarrow 66$		
$68 \leftarrow 69$		
$69 \leftarrow 70$		
$70 \leftarrow 71$		
$71 \leftarrow 72$		

72 ← 73	80.263 823	−0.000 039
73 ← 74	80.144 129	0.000 090

$(4\nu_7^2)^{2f} \leftarrow (3\nu_7^1)^{1e}$, Q-Zweig

26 ← 26	90.272 810	−0.000 145
27 ← 27	90.299 382	0.000 056
28 ← 28	90.326 617	−0.000 049
30 ← 30	90.384 111	−0.000 138
31 ← 31	90.414 497	0.000 008
32 ← 32	90.445 595	−0.000 097
33 ← 33	90.477 931	0.000 073
34 ← 34	90.511 160	0.000 176
35 ← 35	90.545 017	−0.000 051
36 ← 36	90.579 960	−0.000 150
37 ← 37	90.616 038	−0.000 068
38 ← 38	90.652 816	−0.000 238
39 ← 39	90.690 929	−0.000 023
40 ← 40	90.729 777	−0.000 020
41 ← 41	90.769 604	0.000 018
42 ← 42	90.810 378	0.000 061
43 ← 43	90.852 003	0.000 017
44 ← 44	90.894 709	0.000 119
45 ← 45	90.938 375	0.000 251
46 ← 46	90.982 511	−0.000 075
47 ← 47	91.028 035	0.000 065
48 ← 48	91.074 013	−0.000 260
49 ← 49	91.121 240	−0.000 250
50 ← 50	91.169 571	−0.000 044
52 ← 52	91.268 413	−0.000 156
53 ← 53	91.319 527	0.000 139
54 ← 54	91.371 003	−0.000 088
55 ← 55	91.423 627	−0.000 047
56 ← 56	91.477 372	0.000 244
57 ← 57	91.531 595	0.000 148
58 ← 58	91.586 880	0.000 256
59 ← 59	91.642 654	0.000 005
74 ← 74	92.578 306	−0.000 229
75 ← 75	92.647 058	0.000 243
76 ← 76	92.715 640	−0.000 126
77 ← 77	92.785 237	−0.000 142
78 ← 78	92.855 522	−0.000 119

$(4\nu_7^2)^{2e} \leftarrow (3\nu_7^1)^{1e}$, R-Zweig

15 ← 14		
16 ← 15		
17 ← 16		
18 ← 17		
20 ← 19		
21 ← 20		
22 ← 21		
23 ← 22		
24 ← 23	93.956 703	−0.000 052
25 ← 24	94.134 697	0.000 020
26 ← 25	94.313 313	0.000 073
27 ← 26	94.492 659	0.000 241
28 ← 27	94.672 096	−0.000 093
30 ← 29	95.033 492	0.000 081
31 ← 30	95.214 752	−0.000 063
32 ← 31	95.396 645	−0.000 069

72 ← 73		
73 ← 74		

$(4\nu_7^2)^{2e} \leftarrow (3\nu_7^1)^{1f}$, Q-Zweig

26 ← 26		
27 ← 27		
28 ← 28		
30 ← 30		
31 ← 31		
32 ← 32		
33 ← 33		
34 ← 34		
35 ← 35		
36 ← 36		
37 ← 37		
38 ← 38		
39 ← 39		
40 ← 40		
41 ← 41		
42 ← 42		
43 ← 43		
44 ← 44		
45 ← 45		
46 ← 46		
47 ← 47		
48 ← 48		
49 ← 49		
50 ← 50		
52 ← 52		
53 ← 53		
54 ← 54		
55 ← 55		
56 ← 56		
57 ← 57		
58 ← 58		
59 ← 59		
74 ← 74		
75 ← 75		
76 ← 76		
77 ← 77		
78 ← 78		

$(4\nu_7^2)^{2f} \leftarrow (3\nu_7^1)^{1f}$, R-Zweig

15 ← 14	92.333 697	−0.000 079
16 ← 15	92.497 578	0.000 013
17 ← 16	92.661 629	−0.000 164
18 ← 17	92.826 337	−0.000 123
20 ← 19	93.157 396	0.000 283
21 ← 20	93.323 275	0.000 176
22 ← 21	93.489 372	−0.000 154
23 ← 22	93.656 640	0.000 247
24 ← 23	93.823 546	−0.000 155
25 ← 24	93.991 526	0.000 075
26 ← 25		
27 ← 26		
28 ← 27		
30 ← 29		
31 ← 30		
32 ← 31		

33 ← 32	95.579 100	0.000 013
34 ← 33		
35 ← 34		
36 ← 35		
37 ← 36		
38 ← 37	96.497 319	0.000 023
39 ← 38	96.682 037	−0.000 030
40 ← 39	96.867 009	−0.000 162
41 ← 40	97.052 367	−0.000 227
42 ← 41	97.238 329	0.000 008
43 ← 42	97.424 302	−0.000 037
44 ← 43	97.610 699	0.000 063
45 ← 44	97.797 180	−0.000 020
46 ← 45	97.984 083	0.000 062
47 ← 46	98.170 866	−0.000 226
48 ← 47	98.358 445	0.000 040
49 ← 48	98.545 867	−0.000 085
50 ← 49	98.733 724	−0.000 005
51 ← 50	98.921 757	0.000 026
52 ← 51	99.109 891	−0.000 062
53 ← 52	99.298 599	0.000 207
54 ← 53	99.487 344	0.000 298
55 ← 54	99.675 961	0.000 047
56 ← 55	99.865 080	0.000 087
57 ← 56	100.054 513	0.000 231
58 ← 57	100.243 879	0.000 096
59 ← 58	100.433 510	0.000 016
60 ← 59	100.623 546	0.000 130
61 ← 60	100.813 564	0.000 014
62 ← 61	101.003 878	−0.000 020
63 ← 62	101.194 820	0.000 360 *
64 ← 63	101.385 460	0.000 222
65 ← 64	101.576 190	−0.000 046
66 ← 65		
67 ← 66	101.958 864	−0.000 033
68 ← 67	102.150 789	0.000 222
69 ← 68	102.342 382	−0.000 086
70 ← 69	102.534 260	−0.000 345
71 ← 70	102.727 163	0.000 182

$(4\nu_7^4)^{4e} \leftarrow (3\nu_7^3)^{3e}$, P-Zweig

17 ← 18	86.718 544	0.000 174
18 ← 19	86.574 974	0.000 039
19 ← 20	86.432 226	−0.000 007
20 ← 21	86.290 382	0.000 119
21 ← 22	86.149 021	−0.000 005
22 ← 23	86.008 439	−0.000 083
24 ← 25	85.729 799	0.000 088
25 ← 26	85.591 263	−0.000 142
26 ← 27	85.453 687	−0.000 145
27 ← 28	85.316 974	−0.000 019
40 ← 41	83.604 863	−0.000 116
41 ← 42	83.478 357	−0.000 095
42 ← 43	83.352 552	−0.000 115
43 ← 44	83.227 609	−0.000 018
44 ← 45	83.103 470	0.000 140
45 ← 46	82.979 699	−0.000 081
46 ← 47	82.856 863	−0.000 115
47 ← 48		

33 ← 32		
34 ← 33	95.521 291	0.000 108
35 ← 34	95.693 551	0.000 163
36 ← 35	95.866 058	0.000 013
37 ← 36	96.039 042	−0.000 112
38 ← 37	96.212 684	−0.000 033
39 ← 38		
40 ← 39	96.561 308	0.000 098
41 ← 40	96.736 236	0.000 092
42 ← 41	96.911 598	0.000 060
43 ← 42		
44 ← 43		
45 ← 44		
46 ← 45		
47 ← 46		
48 ← 47		
49 ← 48		
50 ← 49		
51 ← 50		
52 ← 51		
53 ← 52		
54 ← 53		
55 ← 54		
56 ← 55	99.416 401	−0.000 257
57 ← 56	99.599 200	−0.000 048
58 ← 57	99.782 493	0.000 152
59 ← 58	99.965 896	−0.000 045
60 ← 59	100.150 022	−0.000 030
61 ← 60		
62 ← 61		
63 ← 62	100.705 264	−0.000 226
64 ← 63	100.891 787	0.000 103
65 ← 64	101.078 781	0.000 373 *
66 ← 65	101.265 902	0.000 236
67 ← 66		
68 ← 67		
69 ← 68		
70 ← 69		
71 ← 70		

$(4\nu_7^4)^{4f} \leftarrow (3\nu_7^3)^{3f}$, P-Zweig

17 ← 18	86.718 544	0.000 192
18 ← 19	86.574 974	0.000 063
19 ← 20	86.432 226	0.000 026
20 ← 21	86.290 382	0.000 162
21 ← 22	86.149 021	0.000 052
22 ← 23	86.008 439	−0.000 008
24 ← 25	85.729 799	0.000 210
25 ← 26	85.591 263	0.000 012
26 ← 27	85.453 687	0.000 047
27 ← 28	85.316 974	0.000 219
40 ← 41	83.602 750	0.000 006
41 ← 42	83.475 804	−0.000 076
42 ← 43	83.349 322	−0.000 394 *
43 ← 44	83.224 169	−0.000 083
44 ← 45	83.099 552	0.000 067
45 ← 46	82.975 522	0.000 112
46 ← 47	82.851 931	−0.000 096
47 ← 48	82.729 253	−0.000 077

48 ← 49	82.613 600	−0.000 020
49 ← 50	82.493 070	0.000 001
50 ← 51	82.373 096	−0.000 175
51 ← 52	82.254 177	−0.000 052
52 ← 53	82.136 038	0.000 095
53 ← 54	82.018 369	−0.000 048
54 ← 55	81.901 612	−0.000 039
55 ← 56	81.785 682	0.000 035
56 ← 57		
57 ← 58	81.556 012	0.000 077
58 ← 59	81.442 291	0.000 061
59 ← 60	81.329 409	0.000 116
60 ← 61	81.217 076	−0.000 052
61 ← 62	81.105 661	−0.000 073
62 ← 63	80.994 898	−0.000 216
63 ← 64		
64 ← 65		
65 ← 66		
67 ← 68		
68 ← 69	80.347 605	−0.000 058
69 ← 70	80.242 606	0.000 142
70 ← 71	80.138 142	0.000 106
71 ← 72	80.034 329	−0.000 047
72 ← 73	79.931 364	−0.000 117
73 ← 74	79.829 233	−0.000 113
74 ← 75		
75 ← 76		
76 ← 77		
78 ← 79		
79 ← 80		
80 ← 81		
81 ← 82		
82 ← 83		
83 ← 84		
84 ← 85		

$(4\nu_7^4)^{4f} \leftarrow (3\nu_7^3)^{3e}$, Q-Zweig

13 ← 13	89.491 823	0.000 065
14 ← 14	89.501 867	−0.000 100
15 ← 15	89.513 360	0.000 456 *
16 ← 16	89.524 503	−0.000 066
17 ← 17	89.536 931	−0.000 030
18 ← 18	89.550 084	0.000 004
19 ← 19	89.563 859	−0.000 067
20 ← 20	89.578 539	0.000 040
21 ← 21	89.593 599	−0.000 198
22 ← 22	89.609 788	−0.000 034
23 ← 23	89.626 435	−0.000 137
24 ← 24	89.644 019	−0.000 029
25 ← 25	89.662 109	−0.000 140
26 ← 26	89.681 038	−0.000 138
27 ← 27	89.700 668	−0.000 160
28 ← 28	89.721 155	−0.000 050
29 ← 29	89.742 245	−0.000 062
30 ← 30	89.763 878	−0.000 256
31 ← 31	89.786 442	−0.000 245
32 ← 32	89.809 705	−0.000 260
49 ← 49	90.317 472	0.000 073
50 ← 50	90.354 148	0.000 246

48 ← 49	82.607 057	−0.000 261
49 ← 50	82.485 966	−0.000 022
50 ← 51	82.365 134	−0.000 200
51 ← 52	82.245 202	−0.000 153
52 ← 53	82.126 120	0.000 074
53 ← 54	82.007 395	−0.000 008
54 ← 55	81.889 365	−0.000 057
55 ← 56	81.772 179	0.000 079
56 ← 57	81.655 446	0.000 015
57 ← 58		
58 ← 59	81.424 008	−0.000 031
59 ← 60	81.309 526	0.000 220
60 ← 61	81.195 201	−0.000 008
61 ← 62	81.081 450	−0.000 293
62 ← 63	80.968 846	−0.000 057
63 ← 64	80.856 718	0.000 033
64 ← 65	80.745 339	0.000 256
65 ← 66	80.634 005	−0.000 086
67 ← 68	80.413 906	−0.000 016
68 ← 69	80.304 407	−0.000 326
69 ← 70	80.196 049	−0.000 085
70 ← 71	80.087 879	−0.000 240
71 ← 72		
72 ← 73		
73 ← 74		
74 ← 75	79.661 702	−0.000 100
75 ← 76	79.556 456	−0.000 174
76 ← 77	79.452 100	0.000 088
78 ← 79	79.244 595	0.000 185
79 ← 80	79.141 585	0.000 168
80 ← 81	79.038 838	−0.000 118
81 ← 82	78.937 084	0.000 062
82 ← 83	78.835 800	0.000 191
83 ← 84	78.734 607	−0.000 106
84 ← 85	78.634 057	−0.000 272

$(4\nu_7^4)^{4e} \leftarrow (3\nu_7^3)^{3f}$, Q-Zweig

13 ← 13	89.491 823	0.000 068
14 ← 14	89.501 867	−0.000 096
15 ← 15	89.513 360	0.000 462 *
16 ← 16	89.524 503	−0.000 057
17 ← 17	89.536 931	−0.000 017
18 ← 18	89.550 084	0.000 022
19 ← 19	89.563 859	−0.000 042
20 ← 20	89.578 539	0.000 074
21 ← 21	89.593 599	−0.000 153
22 ← 22	89.609 788	0.000 026
23 ← 23	89.626 435	−0.000 060
24 ← 24	89.644 019	0.000 071
25 ← 25	89.662 109	−0.000 013
26 ← 26	89.681 038	0.000 023
27 ← 27	89.700 668	0.000 042
28 ← 28	89.721 155	0.000 202
29 ← 29	89.742 245	0.000 248
30 ← 30	89.763 878	0.000 124
31 ← 31	89.786 442	0.000 219
32 ← 32	89.809 705	0.000 301
49 ← 49	90.309 715	−0.000 114
50 ← 50	90.345 359	0.000 033

$51 \leftarrow 51$	90.391 324	0.000 165
$52 \leftarrow 52$	90.429 080	−0.000 095
$53 \leftarrow 53$	90.467 965	0.000 013
$54 \leftarrow 54$	90.507 496	0.000 000
$55 \leftarrow 55$	90.547 781	−0.000 030
$56 \leftarrow 56$	90.588 749	−0.000 152
$57 \leftarrow 57$	90.630 821	0.000 049
$58 \leftarrow 58$	90.673 400	−0.000 029
$59 \leftarrow 59$	90.716 830	−0.000 047
$60 \leftarrow 60$	90.761 208	0.000 085
$61 \leftarrow 61$	90.806 225	0.000 053
$62 \leftarrow 62$	90.852 003	−0.000 030
$63 \leftarrow 63$	90.898 801	0.000 091
$64 \leftarrow 64$	90.945 950	−0.000 263
$65 \leftarrow 65$	90.995 096	0.000 549 *
$66 \leftarrow 66$	91.043 778	0.000 057
$67 \leftarrow 67$	91.093 534	−0.000 209
$68 \leftarrow 68$	91.144 527	−0.000 094
$69 \leftarrow 69$	91.196 474	0.000 111
$70 \leftarrow 70$	91.249 176	0.000 199

$(4\nu_7^4)^{4e} \leftarrow (3\nu_7^3)^{3e}$, R-Zweig

$6 \leftarrow 5$	90.380 453	0.000 149
$7 \leftarrow 6$	90.542 053	0.000 042
$8 \leftarrow 7$	90.704 395	−0.000 049
$9 \leftarrow 8$	90.867 395	−0.000 210
$10 \leftarrow 9$	91.031 446	−0.000 046
$11 \leftarrow 10$	91.196 474	0.000 369 *
$12 \leftarrow 11$	91.361 491	0.000 048
$13 \leftarrow 12$	91.527 557	0.000 051
$14 \leftarrow 13$	91.694 167	−0.000 126
$15 \leftarrow 14$	91.862 093	0.000 289
$16 \leftarrow 15$	92.030 236	0.000 199
$17 \leftarrow 16$	92.199 151	0.000 157
$21 \leftarrow 20$	92.881 991	−0.000 040
$22 \leftarrow 21$	93.054 691	0.000 100
$23 \leftarrow 22$	93.227 802	−0.000 067
$41 \leftarrow 40$	96.469 347	0.000 067
$42 \leftarrow 41$	96.656 057	−0.000 083
$43 \leftarrow 42$	96.843 709	−0.000 004
$44 \leftarrow 43$	97.032 128	0.000 128
$45 \leftarrow 44$	97.221 210	0.000 208
$46 \leftarrow 45$	97.410 830	0.000 112
$47 \leftarrow 46$	97.601 107	−0.000 042
$48 \leftarrow 47$	97.792 073	−0.000 222
$49 \leftarrow 48$	97.984 083	−0.000 075
$50 \leftarrow 49$	98.176 823	0.000 086
$51 \leftarrow 50$	98.369 932	−0.000 101
$52 \leftarrow 51$	98.563 922	−0.000 126
$53 \leftarrow 52$	98.758 853	0.000 072
$54 \leftarrow 53$	98.954 491	0.000 257
$55 \leftarrow 54$	99.150 273	−0.000 134
$56 \leftarrow 55$	99.347 136	−0.000 164
$57 \leftarrow 56$		
$58 \leftarrow 57$	99.743 536	0.000 282
$59 \leftarrow 58$	99.942 295	−0.000 019
$60 \leftarrow 59$		
$61 \leftarrow 60$		
$63 \leftarrow 62$	100.745 658	−0.000 134

$51 \leftarrow 51$		
$52 \leftarrow 52$	90.418 191	−0.000 053
$53 \leftarrow 53$	90.455 718	0.000 066
$54 \leftarrow 54$	90.493 884	0.000 200
$55 \leftarrow 55$	90.532 142	−0.000 190
$56 \leftarrow 56$	90.571 552	−0.000 037
$57 \leftarrow 57$	90.611 529	0.000 083
$58 \leftarrow 58$		
$59 \leftarrow 59$	90.692 902	−0.000 022
$60 \leftarrow 60$	90.734 310	−0.000 217
$61 \leftarrow 61$	90.776 588	−0.000 104
$62 \leftarrow 62$	90.819 631	0.000 224
$63 \leftarrow 63$	90.862 639	−0.000 023
$64 \leftarrow 64$	90.906 377	−0.000 068
$65 \leftarrow 65$		
$66 \leftarrow 66$		
$67 \leftarrow 67$	91.040 953	0.000 124
$68 \leftarrow 68$	91.086 411	−0.000 178
$69 \leftarrow 69$	91.132 938	0.000 132
$70 \leftarrow 70$	91.179 404	−0.000 061

$(4\nu_7^4)^{4f} \leftarrow (3\nu_7^3)^{3f}$, R-Zweig

$6 \leftarrow 5$	90.380 453	0.000 149
$7 \leftarrow 6$	90.542 053	0.000 042
$8 \leftarrow 7$	90.704 395	−0.000 049
$9 \leftarrow 8$	90.867 395	−0.000 210
$10 \leftarrow 9$	91.031 446	−0.000 046
$11 \leftarrow 10$	91.196 474	0.000 370 *
$12 \leftarrow 11$	91.361 491	0.000 049
$13 \leftarrow 12$	91.527 557	0.000 053
$14 \leftarrow 13$	91.694 167	−0.000 123
$15 \leftarrow 14$	91.862 093	0.000 293
$16 \leftarrow 15$	92.030 236	0.000 205
$17 \leftarrow 16$	92.199 151	0.000 166
$21 \leftarrow 20$	92.881 991	−0.000 008
$22 \leftarrow 21$	93.054 691	0.000 143
$23 \leftarrow 22$	93.227 802	−0.000 011
$41 \leftarrow 40$	96.467 482	0.000 082
$42 \leftarrow 41$	96.653 933	−0.000 037
$43 \leftarrow 42$		
$44 \leftarrow 43$		
$45 \leftarrow 44$		
$46 \leftarrow 45$	97.406 985	−0.000 011
$47 \leftarrow 46$	97.596 930	0.000 006
$48 \leftarrow 47$	97.787 522	0.000 009
$49 \leftarrow 48$	97.978 674	−0.000 086
$50 \leftarrow 49$	98.170 866	0.000 204
$51 \leftarrow 50$	98.363 213	−0.000 001
$52 \leftarrow 51$	98.556 515	0.000 103
$53 \leftarrow 52$	98.750 119	−0.000 134
$54 \leftarrow 53$	98.944 748	0.000 016
$55 \leftarrow 54$	99.139 957	0.000 113
$56 \leftarrow 55$	99.335 498	−0.000 088
$57 \leftarrow 56$	99.531 969	0.000 016
$58 \leftarrow 57$		
$59 \leftarrow 58$	99.926 395	−0.000 146
$60 \leftarrow 59$	100.124 918	0.000 164
$61 \leftarrow 60$	100.323 357	−0.000 215
$63 \leftarrow 62$		

64 ← 63	100.948 316	−0.000 155	64 ← 63		
65 ← 64	101.151 788	−0.000 085	65 ← 64		
67 ← 66	101.560 955	0.000 111	67 ← 66		
68 ← 67	101.766 654	0.000 244	68 ← 67		
75 ← 74			75 ← 74	103.167 729	0.000 082
76 ← 75			76 ← 75	103.374 812	−0.000 097
77 ← 76			77 ← 76	103.582 666	−0.000 024
78 ← 77			78 ← 77	103.790 811	−0.000 174
79 ← 78			79 ← 78	103.999 891	0.000 103
$(5\nu_7^5)^{5e} \leftarrow (4\nu_7^4)^{4e}$, P-Zweig			$(5\nu_7^5)^{5f} \leftarrow (4\nu_7^4)^{4f}$, P-Zweig		
21 ← 22	88.480 050	−0.000 016	21 ← 22	88.480 050	−0.000 015
22 ← 23	88.338 140	−0.000 089	22 ← 23	88.338 140	−0.000 088
23 ← 24	88.196 809	−0.000 286	23 ← 24	88.196 809	−0.000 284
24 ← 25	88.056 885	0.000 221	24 ← 25	88.056 885	0.000 225
25 ← 26	87.917 010	0.000 077	25 ← 26	87.917 010	0.000 081
26 ← 27	87.777 834	−0.000 070	26 ← 27	87.777 834	−0.000 065
27 ← 28	87.639 582	0.000 006	27 ← 28	87.639 582	0.000 014
28 ← 29	87.502 344	0.000 396 *	28 ← 29	87.502 344	0.000 406 *
29 ← 30	87.365 245	0.000 226	29 ← 30	87.365 245	0.000 239
30 ← 31	87.228 587	−0.000 202	30 ← 31	87.228 587	−0.000 186
31 ← 32	87.093 564	0.000 306	31 ← 32	87.093 564	0.000 327
32 ← 33	86.958 578	0.000 153	32 ← 33	86.958 578	0.000 181
33 ← 34	86.824 581	0.000 292	33 ← 34	86.824 581	0.000 327
34 ← 35	86.690 512	−0.000 337	34 ← 35	86.690 512	−0.000 293
35 ← 36	86.557 989	−0.000 116	35 ← 36	86.557 989	−0.000 061
36 ← 37	86.425 984	−0.000 072	36 ← 37	86.425 984	−0.000 003
42 ← 43	85.648 226	−0.000 094	42 ← 43	85.648 226	0.000 130
43 ← 44	85.520 918	−0.000 198	43 ← 44	85.520 918	0.000 070
44 ← 45	85.394 817	0.000 214	44 ← 45	85.394 817	0.000 534 *
45 ← 46	85.268 655	−0.000 122	45 ← 46	85.268 655	0.000 258
53 ← 54	84.286 688	−0.000 205	53 ← 54		
54 ← 55	84.167 492	0.000 253	54 ← 55		
55 ← 56	84.048 357	0.000 089	55 ← 56		
56 ← 57	83.930 030	0.000 050	56 ← 57		
57 ← 58	83.812 699	0.000 324 *	57 ← 58		
58 ← 59	83.695 393	−0.000 060	58 ← 59		
62 ← 63	83.234 551	−0.000 040	62 ← 63		
63 ← 64	83.120 715	−0.000 368 *	63 ← 64		
64 ← 65	83.008 491	0.000 234	64 ← 65		
65 ← 66	82.896 104	−0.000 011	65 ← 66		
66 ← 67	82.784 453	−0.000 204	66 ← 67		
67 ← 68	82.673 907	0.000 024	67 ← 68		
68 ← 69	82.563 657	−0.000 137	68 ← 69		
69 ← 70	82.454 390	0.000 001	69 ← 70		
70 ← 71	82.345 770	0.000 100	70 ← 71		
72 ← 73	82.130 370	0.000 081	72 ← 73		
73 ← 74	82.023 826	0.000 198	73 ← 74		
74 ← 75	81.917 783	0.000 131	74 ← 75		
$(5\nu_7^5)^{5f} \leftarrow (4\nu_7^4)^{4e}$, Q-Zweig			$(5\nu_7^5)^{5e} \leftarrow (4\nu_7^4)^{4f}$, Q-Zweig		
6 ← 6	91.793 570	0.000 144	6 ← 6	91.793 570	0.000 144
7 ← 7	91.798 097	−0.000 251	7 ← 7	91.798 097	−0.000 251
8 ← 8	91.804 067	0.000 094	8 ← 8	91.804 067	0.000 094
9 ← 9	91.810 224	−0.000 076	9 ← 9	91.810 224	−0.000 076
10 ← 10	91.817 582	0.000 253	10 ← 10	91.817 582	0.000 253
11 ← 11	91.825 079	0.000 020	11 ← 11	91.825 079	0.000 020
13 ← 13	91.842 638	0.000 014	13 ← 13	91.842 638	0.000 014
14 ← 14	91.852 562	0.000 105	14 ← 14	91.852 562	0.000 105

$16 \leftarrow 16$	91.874 274	0.000 051
$17 \leftarrow 17$	91.886 056	−0.000 099
$18 \leftarrow 18$	91.898 949	0.000 164
$19 \leftarrow 19$	91.912 138	0.000 025
$20 \leftarrow 20$	91.926 178	0.000 040
$22 \leftarrow 22$	91.956 311	0.000 033
$23 \leftarrow 23$	91.972 246	−0.000 145
$24 \leftarrow 24$	91.989 262	0.000 063
$25 \leftarrow 25$	92.007 153	0.000 453 *
$26 \leftarrow 26$	92.024 924	0.000 030
$27 \leftarrow 27$	92.043 606	−0.000 175
$28 \leftarrow 28$	92.063 386	0.000 028
$29 \leftarrow 29$	92.083 692	0.000 066
$30 \leftarrow 30$	92.104 492	−0.000 091
$31 \leftarrow 31$	92.126 229	0.000 000
$32 \leftarrow 32$	92.148 375	−0.000 187
$33 \leftarrow 33$	92.171 318	−0.000 264
$34 \leftarrow 34$	92.195 216	−0.000 071
$35 \leftarrow 35$	92.219 493	−0.000 184
$36 \leftarrow 36$	92.244 706	−0.000 044
$37 \leftarrow 37$	92.270 486	−0.000 020
$38 \leftarrow 38$	92.297 058	0.000 114
$39 \leftarrow 39$	92.323 792	−0.000 270
$40 \leftarrow 40$	92.351 860	0.000 001
$42 \leftarrow 42$	92.409 499	0.000 011
$43 \leftarrow 43$	92.439 312	−0.000 005
$56 \leftarrow 56$	92.888 371	0.000 061
$57 \leftarrow 57$	92.927 696	0.000 154
$58 \leftarrow 58$	92.967 294	−0.000 151
$59 \leftarrow 59$		
$60 \leftarrow 60$		
$61 \leftarrow 61$	93.091 312	0.000 122
$62 \leftarrow 62$	93.133 994	0.000 204
$63 \leftarrow 63$	93.176 983	−0.000 084
$64 \leftarrow 64$	93.221 156	0.000 130
$65 \leftarrow 65$	93.265 516	−0.000 153
$66 \leftarrow 66$	93.310 950	−0.000 048
$67 \leftarrow 67$	93.356 825	−0.000 194
$68 \leftarrow 68$	93.403 659	−0.000 075
$69 \leftarrow 69$	93.451 025	−0.000 124
$70 \leftarrow 70$	93.499 217	−0.000 053
$71 \leftarrow 71$	93.547 838	−0.000 263
$72 \leftarrow 72$	93.597 522	−0.000 127
$73 \leftarrow 73$	93.648 196	0.000 275
$74 \leftarrow 74$	93.698 796	−0.000 129
$75 \leftarrow 75$	93.750 490	−0.000 178

$(5\nu_7^5)^{5e} \leftarrow (4\nu_7^4)^{4e}$, R-Zweig

$6 \leftarrow 5$	92.737 407	−0.000 013
$7 \leftarrow 6$	92.899 568	−0.000 102
$8 \leftarrow 7$	93.062 550	−0.000 070
$10 \leftarrow 9$	93.390 494	−0.000 124
$11 \leftarrow 10$	93.555 631	−0.000 035
$12 \leftarrow 11$	93.721 420	0.000 009
$13 \leftarrow 12$	93.887 589	−0.000 265
$17 \leftarrow 16$	94.560 638	0.000 059
$18 \leftarrow 17$	94.730 471	−0.000 024
$19 \leftarrow 18$	94.901 083	−0.000 021
$20 \leftarrow 19$	95.072 504	0.000 101

$16 \leftarrow 16$	91.874 274	0.000 051
$17 \leftarrow 17$	91.886 056	−0.000 098
$18 \leftarrow 18$	91.898 949	0.000 164
$19 \leftarrow 19$	91.912 138	0.000 025
$20 \leftarrow 20$	91.926 178	0.000 040
$22 \leftarrow 22$	91.956 311	0.000 034
$23 \leftarrow 23$	91.972 246	−0.000 144
$24 \leftarrow 24$	91.989 262	0.000 065
$25 \leftarrow 25$	92.007 153	0.000 456 *
$26 \leftarrow 26$	92.024 924	0.000 034
$27 \leftarrow 27$	92.043 606	−0.000 169
$28 \leftarrow 28$	92.063 386	0.000 036
$29 \leftarrow 29$	92.083 692	0.000 077
$30 \leftarrow 30$	92.104 492	−0.000 077
$31 \leftarrow 31$	92.126 229	0.000 018
$32 \leftarrow 32$	92.148 375	−0.000 163
$33 \leftarrow 33$	92.171 318	−0.000 234
$34 \leftarrow 34$	92.195 216	−0.000 033
$35 \leftarrow 35$	92.219 493	−0.000 135
$36 \leftarrow 36$	92.244 706	0.000 017
$37 \leftarrow 37$	92.270 486	0.000 056
$38 \leftarrow 38$	92.297 058	0.000 209
$39 \leftarrow 39$	92.323 792	−0.000 153
$40 \leftarrow 40$	92.351 860	0.000 145
$42 \leftarrow 42$	92.409 499	0.000 226
$43 \leftarrow 43$	92.439 312	0.000 254
$56 \leftarrow 56$	92.885 981	−0.000 014
$57 \leftarrow 57$	92.925 228	0.000 371 *
$58 \leftarrow 58$	92.964 185	−0.000 154
$59 \leftarrow 59$	93.004 102	−0.000 333 *
$60 \leftarrow 60$	93.045 257	0.000 117
$61 \leftarrow 61$		
$62 \leftarrow 62$		
$63 \leftarrow 63$		
$64 \leftarrow 64$		
$65 \leftarrow 65$		
$66 \leftarrow 66$		
$67 \leftarrow 67$		
$68 \leftarrow 68$		
$69 \leftarrow 69$		
$70 \leftarrow 70$		
$71 \leftarrow 71$		
$72 \leftarrow 72$		
$73 \leftarrow 73$		
$74 \leftarrow 74$		
$75 \leftarrow 75$		

$(5\nu_7^5)^{5f} \leftarrow (4\nu_7^4)^{4f}$, R-Zweig

$6 \leftarrow 5$	92.737 407	−0.000 013
$7 \leftarrow 6$	92.899 568	−0.000 102
$8 \leftarrow 7$	93.062 550	−0.000 070
$10 \leftarrow 9$	93.390 494	−0.000 124
$11 \leftarrow 10$	93.555 631	−0.000 035
$12 \leftarrow 11$	93.721 420	0.000 009
$13 \leftarrow 12$	93.887 589	−0.000 265
$17 \leftarrow 16$	94.560 638	0.000 059
$18 \leftarrow 17$	94.730 471	−0.000 024
$19 \leftarrow 18$	94.901 083	−0.000 020
$20 \leftarrow 19$	95.072 504	0.000 101

21 ← 20	95.244 341	−0.000 052	21 ← 20	95.244 341	−0.000 052
22 ← 21	95.417 119	0.000 047	22 ← 21	95.417 119	0.000 047
23 ← 22	95.590 466	0.000 026	23 ← 22	95.590 466	0.000 027
24 ← 23	95.764 554	0.000 059	24 ← 23	95.764 554	0.000 061
25 ← 24	95.938 818	−0.000 417 *	25 ← 24	95.938 818	−0.000 415 *
26 ← 25	96.114 579	−0.000 082	26 ← 25	96.114 579	−0.000 079
27 ← 26	96.290 792	0.000 022	27 ← 26	96.290 792	0.000 026
28 ← 27	96.467 482	−0.000 080	28 ← 27	96.467 482	−0.000 075
29 ← 28	96.645 041	0.000 006	29 ← 28	96.645 041	0.000 013
30 ← 29	96.823 150	−0.000 039	30 ← 29	96.823 150	−0.000 029
31 ← 30	97.001 887	−0.000 134	31 ← 30	97.001 887	−0.000 121
32 ← 31	97.181 504	−0.000 027	32 ← 31	97.181 504	−0.000 010
33 ← 32	97.361 659	−0.000 057	33 ← 32	97.361 659	−0.000 036
34 ← 33	97.542 557	−0.000 020	34 ← 33	97.542 557	0.000 007
35 ← 34	97.723 768	−0.000 343 *	35 ← 34	97.723 768	−0.000 309
36 ← 35	97.906 223	−0.000 094	36 ← 35	97.906 223	−0.000 051
37 ← 36	98.089 166	−0.000 027	37 ← 36	98.089 166	0.000 026
38 ← 37	98.272 653	−0.000 085	38 ← 37	98.272 653	−0.000 019
39 ← 38	98.456 973	0.000 022	39 ← 38	98.456 973	0.000 103
40 ← 39	98.641 860	0.000 030	40 ← 39	98.641 860	0.000 129
41 ← 40	98.827 321	−0.000 053	41 ← 40	98.827 321	0.000 068
42 ← 41	99.013 693	0.000 112	42 ← 41	99.013 693	0.000 260
43 ← 42	99.200 518	0.000 069	43 ← 42	99.200 518	0.000 247
44 ← 43	99.388 013	0.000 035	44 ← 43	99.388 013	0.000 249
45 ← 44	99.576 057	−0.000 108	45 ← 44	99.576 057	0.000 149
61 ← 60	102.675 252	−0.000 240	61 ← 60	102.672 409	−0.000 264
62 ← 61	102.874 704	0.000 055	62 ← 61	102.871 662	0.000 208
63 ← 62	103.074 453	0.000 014	63 ← 62	103.070 729	−0.000 098
64 ← 63	103.275 082	0.000 220	64 ← 63	103.270 954	0.000 167
65 ← 64	103.475 947	0.000 031	65 ← 64	103.471 293	−0.000 036
66 ← 65			66 ← 65	103.672 617	0.000 168
67 ← 66	103.879 808	−0.000 105	67 ← 66	103.873 971	−0.000 171
68 ← 67	104.082 894	0.000 041	68 ← 67	104.076 592	0.000 190
69 ← 68	104.286 614	0.000 194	69 ← 68	104.279 262	0.000 039
70 ← 69	104.490 606	−0.000 007	70 ← 69	104.482 463	−0.000 138

Tabelle F.2 Zugeordnete *a*-Typ-Rotationsübergänge von NCCNO im Frequenzbereich zwischen 52 und 510 GHz.

	$J' \leftarrow J''$	ν_{exp} / MHz	$\nu_{\mathrm{exp}} - \nu_{\mathrm{calc}}$ / MHz	$J' \leftarrow J''$	ν_{exp} / MHz	$\nu_{\mathrm{exp}} - \nu_{\mathrm{calc}}$ / MHz
Grund						
	12 ← 11	55 462.968 3	-0.000 9			
	13 ← 12	60 084.698 1	0.001 1			
	14 ← 13	64 706.376 5	-0.003 7			
	15 ← 14	69 328.011 2	-0.004 1			
	16 ← 15	73 949.599 3	0.000 4			
	17 ← 16	78 571.125 9	-0.001 6			
	18 ← 17	83 192.603 5	0.005 7			
	19 ← 18	87 814.004 0	-0.002 3			
	20 ← 19	92 435.349 1	-0.000 4			
	21 ← 20	97 056.621 7	-0.002 5			
	22 ← 21	101 677.833 8	0.007 0			
	23 ← 22	106 298.953 0	-0.001 0			
	24 ← 23	110 919.994 8	-0.007 6			
	25 ← 24	115 540.970 1	0.001 6			
	35 ← 34	161 745.366 1	0.004 7			
	36 ← 35	166 365.196 2	-0.003 4			

37 ← 36	170 984.914 7	-0.000 3
38 ← 37	175 604.492 4	-0.012 0
46 ← 45	212 556.282 4	0.001 5
47 ← 46	217 174.583 9	-0.002 0
48 ← 47	221 792.737 6	0.005 8
49 ← 48	226 410.722 1	0.007 0
105 ← 104	484 661.138 0	0.001 5
106 ← 105	489 264.650 0	-0.077 5
107 ← 106	493 867.877 0	-0.105 2
108 ← 107	498 471.103 0	0.204 8
109 ← 108	503 073.322 0	-0.150 7
110 ← 109	507 675.921 0	0.217 8

$(\nu_7^1)^{1e}$

12 ← 11	55 721.027 8	0.001 5
13 ← 12	60 364.235 7	0.003 1
14 ← 13	65 007.387 1	-0.000 8
15 ← 14	69 650.485 5	-0.002 9
16 ← 15	74 293.531 7	0.001 7
17 ← 16	78 936.509 3	0.000 3
18 ← 17	83 579.426 7	0.005 4
19 ← 18	88 222.268 8	0.005 7
20 ← 19	92 865.031 7	0.001 2
21 ← 20	97 507.720 9	0.001 3
22 ← 21	102 150.331 6	0.005 0
23 ← 22	106 792.837 8	-0.009 6
24 ← 23	111 435.274 6	-0.003 7
25 ← 24	116 077.616 0	0.000 7
34 ← 33		
35 ← 34	162 494.960 7	-0.013 8
36 ← 35	167 136.028 1	0.003 5
37 ← 36	171 776.937 3	0.002 5
38 ← 37	176 417.712 3	0.011 3
45 ← 44		
46 ← 45	213 538.194 9	-0.003 5
47 ← 46	218 177.499 9	0.000 1
48 ← 47	222 816.617 2	-0.002 5
49 ← 48	227 455.551 4	-0.002 9
104 ← 103		
105 ← 104	486 829.710 0	0.079 9
106 ← 105	491 451.935 0	-0.246 0
107 ← 106	496 074.515 0	0.165 0
108 ← 107	500 695.970 0	-0.164 0
109 ← 108	505 317.544 0	0.013 9

$(2\nu_7^0)^{0e}$

12 ← 11	56 041.713 2	0.001 9
13 ← 12	60 712.024 8	0.004 9
14 ← 13	65 382.367 6	-0.001 1
15 ← 14	70 052.748 2	-0.012 4
16 ← 15	74 723.202 8	0.003 9
17 ← 16	79 393.685 8	-0.000 9
18 ← 17	84 064.234 6	0.007 6
19 ← 18	88 734.828 9	0.005 9
20 ← 19	93 405.479 8	0.002 0
21 ← 20	98 076.201 2	0.006 9
22 ← 21	102 746.972 1	-0.003 4
23 ← 22	107 417.819 5	-0.004 7
24 ← 23	112 088.740 0	-0.003 4
25 ← 24	116 759.736 9	0.001 3
35 ← 34	163 474.129 0	-0.024 7

$(\nu_7^1)^{1f}$

12 ← 11	56 399.123 8	0.000 9
13 ← 12	61 098.946 4	0.006 0
14 ← 13	65 798.729 6	-0.001 3
15 ← 14	70 498.490 6	-0.001 8
16 ← 15	75 198.226 6	0.004 3
17 ← 16	79 897.917 1	-0.001 2
18 ← 17	84 597.581 5	0.003 5
19 ← 18	89 297.197 1	-0.001 7
20 ← 19	93 996.779 2	0.001 0
21 ← 20	98 696.321 4	0.008 0
22 ← 21	103 395.794 9	-0.006 9
23 ← 22	108 095.234 1	-0.006 4
24 ← 23	112 794.627 0	0.000 3
25 ← 24	117 493.955 0	-0.002 4
34 ← 33	159 784.890 5	-0.009 7
35 ← 34	164 483.500 8	0.009 0
36 ← 35	169 182.002 7	0.014 0
37 ← 36	173 880.387 6	0.000 7
38 ← 37	178 578.763 4	0.081 5 *
45 ← 44	211 463.462 6	-0.007 3
46 ← 45	216 160.760 8	-0.008 5
47 ← 46	220 857.933 8	0.012 6
48 ← 47	225 554.919 9	-0.000 1
49 ← 48		
104 ← 103	488 139.710 0	0.088 9
105 ← 104	492 816.639 0	-0.311 1
106 ← 105	497 493.751 0	-0.001 3
107 ← 106	502 169.945 0	-0.077 9
108 ← 107	506 845.600 0	-0.157 1
109 ← 108		

36 ← 35	168 146.105 9	0.029 4	
37 ← 36	172 818.038 9	-0.049 5	
38 ← 37	177 490.210 1	0.021 5	
45 ← 44	210 197.179 3	-0.003 9	
46 ← 45	214 869.894 2	-0.001 7	
47 ← 46	219 542.666 0	0.001 6	
48 ← 47	224 215.484 7	0.002 6	
49 ← 48	228 888.343 4	0.002 0	
104 ← 103	485 597.910 0	0.000 6	
105 ← 104	490 253.660 0	-0.283 3	
106 ← 105	494 909.283 0	-0.153 8	
107 ← 106	499 564.480 0	0.093 1	
108 ← 107	504 219.026 0	0.235 3	

$(2\nu_7^2)^{2e}$

12 ← 11	56 060.441 3	0.000 7
13 ← 12	60 731.476 7	0.005 1
14 ← 13	65 402.342 0	0.001 0
15 ← 14	70 073.035 6	-0.000 9
16 ← 15	74 743.549 1	0.003 5
17 ← 16	79 413.857 1	0.001 3
18 ← 17	84 083.963 3	0.008 5
19 ← 18	88 753.831 2	0.001 1
20 ← 19	93 423.472 5	0.002 9
21 ← 20	98 092.859 9	-0.000 9
22 ← 21	102 761.986 2	-0.005 5
23 ← 22	107 430.841 2	-0.008 8
24 ← 23	112 099.419 8	-0.003 9
25 ← 24	116 767.701 8	0.000 8
35 ← 34	163 431.657 0	-0.014 1
36 ← 35	168 095.982 4	0.026 8
37 ← 36	172 759.792 7	-0.025 4
38 ← 37	177 423.218 9	-0.031 3
45 ← 44	210 054.646 6	-0.005 2
46 ← 45	214 714.413 8	0.000 9
47 ← 46	219 373.699 7	0.004 0
48 ← 47	224 032.497 7	-0.000 6
49 ← 48	228 690.824 3	0.005 0
104 ← 103	484 273.568 0	-0.032 3
105 ← 104	488 911.120 0	0.106 2
106 ← 105	493 547.981 0	-0.099 9
107 ← 106	498 184.755 0	-0.043 1
108 ← 107	502 821.221 0	0.059 4
109 ← 108	507 457.199 0	0.031 4

$(2\nu_7^2)^{2f}$

12 ← 11	56 062.622 5	0.000 2
13 ← 12	60 734.253 4	0.004 5
14 ← 13	65 405.812 8	-0.000 7
15 ← 14	70 077.309 6	-0.001 7
16 ← 15	74 748.740 9	0.003 3
17 ← 16	79 420.088 4	0.000 7
18 ← 17	84 091.359 5	0.002 8
19 ← 18	88 762.538 2	-0.001 9
20 ← 19	93 433.636 3	0.003 4
21 ← 20	98 104.630 8	0.000 2
22 ← 21	102 775.531 9	0.003 6
23 ← 22	107 446.316 8	-0.004 6
24 ← 23	112 117.003 5	-0.001 7
25 ← 24	116 787.576 2	0.001 3
35 ← 34	163 485.954 0	-0.015 7
36 ← 35	168 154.987 7	0.011 2
37 ← 36	172 823.786 4	-0.027 0
38 ← 37	177 492.510 4	0.034 5
45 ← 44	210 167.840 3	-0.002 4
46 ← 45	214 834.946 5	0.001 7
47 ← 46	219 501.827 5	-0.004 0
48 ← 47	224 168.501 7	0.003 3
49 ← 48	228 834.938 7	-0.002 1
104 ← 103	485 019.745 0	0.151 0
105 ← 104	489 666.802 0	-0.044 5
106 ← 105	494 313.520 0	-0.129 3
107 ← 106	498 959.869 0	-0.130 3
108 ← 107	503 606.066 0	0.172 8
109 ← 108		

$(3\nu_7^1)^{1e}$

12 ← 11	56 204.700 1	-0.001 0
13 ← 12	60 888.370 5	0.003 1
14 ← 13	65 572.016 6	-0.004 1
15 ← 14	70 255.658 2	-0.002 0
16 ← 15	74 939.283 2	-0.002 4
17 ← 16	79 622.892 7	-0.003 6
18 ← 17	84 306.495 8	0.003 8
19 ← 18	88 990.078 7	0.006 2
20 ← 19	93 673.637 8	0.000 1
21 ← 20	98 357.184 8	-0.002 8
22 ← 21	103 040.743 3	0.020 9
23 ← 22	107 724.236 2	-0.006 3
24 ← 23	112 407.739 6	-0.008 5
25 ← 24	117 091.239 0	-0.001 1
34 ← 33	159 242.222 4	-0.013 9

$(3\nu_7^1)^{1f}$

12 ← 11	56 399.123 8	0.000 9
13 ← 12	61 098.946 4	0.006 0
14 ← 13	65 798.729 6	-0.001 3
15 ← 14	70 498.490 6	-0.001 8
16 ← 15	75 198.226 6	0.004 3
17 ← 16	79 897.917 1	-0.001 2
18 ← 17	84 597.581 5	0.003 5
19 ← 18	89 297.197 1	-0.001 7
20 ← 19	93 996.779 2	0.001 0
21 ← 20	98 696.321 4	0.008 0
22 ← 21	103 395.794 9	-0.006 9
23 ← 22	108 095.234 1	-0.006 4
24 ← 23	112 794.627 0	0.000 3
25 ← 24	117 493.955 0	-0.002 4
34 ← 33	159 784.890 5	-0.009 7

35 ← 34	163 925.674 9	0.010 7	
36 ← 35	168 609.097 8	0.000 3	
37 ← 36	173 292.525 6	-0.013 7	
38 ← 37	177 975.994 8	0.001 7	
45 ← 44	210 760.841 0	0.004 8	
46 ← 45	215 444.532 8	-0.003 1	
47 ← 46	220 128.284 6	-0.004 4	
48 ← 47	224 812.102 7	0.001 3	
49 ← 48	229 495.985 8	0.006 6	
104 ← 103	487 219.953 0	0.239 3	
105 ← 104	491 900.725 0	0.257 9	
106 ← 105	496 580.630 0	0.043 2	
107 ← 106	501 260.130 0	0.074 5	
108 ← 107	505 939.229 0	0.371 7	

$(3\nu_7^3)^{3e}$

12 ← 11	56 336.022 1	0.011 7	
13 ← 12	61 030.223 3	0.021 6	
14 ← 13	65 724.298 9	0.021 1	
15 ← 14	70 418.259 1	0.029 7	*
16 ← 15	75 112.092 4	0.045 1	*
17 ← 16	79 805.779 9	0.058 0	*
18 ← 17	84 499.327 5	0.083 5	*
19 ← 18	89 192.705 1	0.101 3	*
20 ← 19	93 885.827 7	0.036 0	*
21 ← 20	98 578.786 4	-0.011 4	
22 ← 21	103 271.588 9	-0.023 3	
23 ← 22	107 964.207 9	-0.016 9	
24 ← 23	112 656.624 2	-0.001 2	
25 ← 24	117 348.806 2	0.002 4	
34 ← 33	159 566.611 3	-0.002 5	
35 ← 34	164 255.954 7	-0.007 4	
36 ← 35	168 944.937 2	-0.025 4	
37 ← 36	173 633.591 6	-0.010 8	
38 ← 37	178 321.942 8	0.073 9	*
45 ← 44	211 128.156 4	0.010 9	
46 ← 45	215 812.939 8	0.007 8	
47 ← 46	220 497.221 3	0.002 8	
48 ← 47	225 180.996 5	0.006 9	
49 ← 48	229 864.238 9	0.008 7	
104 ← 103	486 354.986 0	0.089 8	
105 ← 104	491 000.987 0	-0.276 2	
106 ← 105	495 647.182 0	-0.139 5	
107 ← 106	500 293.127 0	0.045 5	
108 ← 107	504 938.686 0	0.134 2	

$(4\nu_7^0)^{0e}$

12 ← 11	56 549.732 5	-0.007 3	
13 ← 12	61 263.664 8	-0.001 9	
14 ← 13	65 977.929 8	-0.009 6	
15 ← 14	70 692.573 2	-0.009 6	
16 ← 15	75 407.614 3	-0.007 2	
17 ← 16	80 123.071 8	-0.007 0	
18 ← 17	84 838.972 3	-0.005 0	
19 ← 18	89 555.335 4	-0.002 6	
20 ← 19	94 272.176 2	-0.004 5	
21 ← 20	98 989.517 0	-0.006 2	
22 ← 21	103 707.371 9	-0.009 3	
23 ← 22	108 425.756 2	-0.012 1	
24 ← 23	113 144.692 6	-0.002 7	
25 ← 24	117 864.172 6	0.002 5	

35 ← 34	164 483.500 8	0.009 0	
36 ← 35	169 182.002 7	0.014 0	
37 ← 36	173 880.387 6	0.000 7	
38 ← 37	178 578.763 4	0.081 5	*
45 ← 44	211 463.462 6	-0.007 3	
46 ← 45	216 160.760 8	-0.008 5	
47 ← 46	220 857.933 8	0.012 6	
48 ← 47	225 554.919 9	-0.000 1	
49 ← 48			
104 ← 103	488 139.710 0	0.088 9	
105 ← 104	492 816.639 0	-0.311 1	
106 ← 105	497 493.751 0	-0.001 3	
107 ← 106	502 169.945 0	-0.077 9	
108 ← 107	506 845.600 0	-0.157 1	

$(3\nu_7^3)^{3f}$

12 ← 11	56 336.022 1	-0.007 9	
13 ← 12	61 030.223 3	-0.007 8	
14 ← 13	65 724.298 9	-0.021 7	
15 ← 14	70 418.259 1	-0.031 0	*
16 ← 15	75 112.092 4	-0.039 0	*
17 ← 16	79 805.779 9	-0.056 4	*
18 ← 17	84 499.327 5	-0.069 1	*
19 ← 18	89 192.705 1	-0.099 2	*
20 ← 19	93 885.989 6	-0.061 8	*
21 ← 20	98 579.151 0	0.021 0	
22 ← 21	103 272.054 2	0.021 9	
23 ← 22	107 964.752 3	0.001 7	
24 ← 23	112 657.279 2	0.002 0	
25 ← 24	117 349.608 4	0.003 8	
34 ← 33	159 570.389 3	-0.008 8	
35 ← 34	164 260.355 8	0.012 2	
36 ← 35	168 949.998 5	-0.016 0	
37 ← 36	173 639.391 8	-0.013 1	
38 ← 37	178 328.540 8	0.032 0	
45 ← 44	211 143.738 4	-0.006 7	
46 ← 45	215 830.349 8	-0.010 9	
47 ← 46	220 516.636 0	-0.006 8	
48 ← 47	225 202.584 0	-0.003 1	
49 ← 48	229 888.176 7	-0.012 6	
104 ← 103	486 986.493 0	-0.044 8	
105 ← 104	491 648.538 0	-0.303 2	
106 ← 105	496 310.614 0	-0.055 2	
107 ← 106	500 971.879 0	-0.140 4	
108 ← 107	505 632.795 0	-0.094 3	

34 ← 33	160 363.745 4	0.021 6	
35 ← 34	165 088.374 4	0.029 0	
36 ← 35	169 813.386 3	0.020 6	
37 ← 36	174 538.809 9	0.060 3	
45 ← 44	212 350.041 8	0.000 4	
46 ← 45	217 076.830 4	-0.002 8	
47 ← 46	221 803.571 7	0.004 7	
48 ← 47	226 530.198 1	-0.004 8	
103 ← 102	485 851.403 0	0.626 1	
104 ← 103	490 550.899 0	0.121 0	
105 ← 104	495 250.297 0	0.114 1	
106 ← 105	499 949.098 0	0.109 9	
107 ← 106	504 647.817 0	0.626 7	

$(4\nu_7^2)^{2e}$

12 ← 11	56 547.775 0	0.004 3
13 ← 12	61 258.268 8	0.011 3
14 ← 13	65 968.310 3	0.002 2
15 ← 14	70 677.892 2	0.001 7
16 ← 15	75 386.976 5	0.003 1
17 ← 16	80 095.525 9	-0.000 7
18 ← 17	84 803.531 2	0.010 3
19 ← 18	89 510.932 1	0.003 7
20 ← 19	94 217.721 6	-0.001 2
21 ← 20	98 923.876 1	-0.003 7
22 ← 21	103 629.378 9	0.002 1
23 ← 22	108 334.181 6	-0.012 4
24 ← 23	113 038.302 9	-0.011 1
25 ← 24	117 741.717 6	-0.004 8
34 ← 33	160 039.742 3	-0.002 0
35 ← 34	164 736.011 5	-0.026 8
36 ← 35	169 431.682 7	-0.023 6
37 ← 36	174 126.778 1	-0.000 1
38 ← 37	178 821.256 9	-0.030 1
45 ← 44	211 670.231 1	-0.001 3
46 ← 45	216 361.621 1	0.007 1
47 ← 46	221 052.789 5	0.006 2
48 ← 47	225 743.795 7	0.017 6
103 ← 102	484 053.328 0	0.781 8
104 ← 103	488 756.958 0	0.664 4
105 ← 104	493 460.562 0	0.775 3
106 ← 105	498 163.716 0	0.755 5
107 ← 106	502 866.607 0	0.856 2
108 ← 107	507 569.019 0	0.924 8

$(4\nu_7^4)^{4e}$

12 ← 11	56 598.427 2	0.002 5
13 ← 12	61 314.457 0	0.007 5
14 ← 13	66 030.351 1	-0.000 5
15 ← 14	70 746.120 7	-0.000 8
16 ← 15	75 461.750 6	0.001 0
17 ← 16	80 177.228 0	0.001 6
18 ← 17	84 892.546 4	0.004 0
19 ← 18	89 607.693 1	0.005 2
20 ← 19	94 322.657 6	0.004 3
21 ← 20	99 037.428 2	-0.000 8
22 ← 21	103 752.002 9	-0.002 4
23 ← 22	108 466.372 1	-0.000 4
24 ← 23	113 180.530 5	0.009 8
25 ← 24	117 894.457 7	0.017 5
34 ← 33	160 307.893 9	0.121 3 *

$(4\nu_7^2)^{2f}$

12 ← 11	56 556.952 8	0.006 7
13 ← 12	61 269.945 3	0.011 7
14 ← 13	65 982.904 2	0.004 8
15 ← 14	70 695.847 0	0.005 2
16 ← 15	75 408.765 9	0.006 4
17 ← 16	80 121.657 7	0.007 1
18 ← 17	84 834.522 6	0.008 7
19 ← 18	89 547.357 6	0.010 0
20 ← 19	94 260.160 8	0.010 4
21 ← 20	98 972.928 2	0.007 5
22 ← 21	103 685.669 0	0.011 9
23 ← 22	108 398.361 5	0.003 5
24 ← 23	113 111.029 1	0.006 9
25 ← 24	117 823.652 8	0.004 7
34 ← 33	160 235.315 8	-0.013 9
35 ← 34	164 947.486 0	-0.010 6
36 ← 35	169 659.609 6	-0.000 3
37 ← 36	174 371.664 1	-0.004 1
38 ← 37		
45 ← 44	212 065.964 8	-0.004 4
46 ← 45	216 777.454 5	-0.006 4
47 ← 46	221 488.866 1	-0.014 4
48 ← 47	226 200.215 5	-0.010 4
103 ← 102	485 064.068 0	0.200 8
104 ← 103	489 761.199 0	-0.202 1
105 ← 104	494 458.396 0	-0.022 3
106 ← 105	499 154.928 0	0.019 0
107 ← 106	503 850.855 0	-0.008 7
108 ← 107		

$(4\nu_7^4)^{4f}$

12 ← 11	56 598.427 2	0.002 3
13 ← 12	61 314.457 0	0.007 2
14 ← 13	66 030.351 1	-0.000 9
15 ← 14	70 746.120 7	-0.001 5
16 ← 15	75 461.750 6	-0.000 1
17 ← 16	80 177.228 0	-0.000 1
18 ← 17	84 892.546 4	0.001 5
19 ← 18	89 607.693 1	0.001 5
20 ← 19	94 322.657 6	-0.001 1
21 ← 20	99 037.428 2	-0.008 4
22 ← 21	103 752.002 9	-0.012 9
23 ← 22	108 466.372 1	-0.014 8
24 ← 23	113 180.530 5	-0.009 7
25 ← 24	117 894.457 7	-0.008 6
34 ← 33	160 307.893 9	-0.110 7 *

35 ← 34	165 018.949 4	0.099 0	*
36 ← 35	169 729.539 5	-0.047 2	*
37 ← 36	174 439.958 8	-0.011 8	*
45 ← 44	212 108.998 7	0.006 2	
46 ← 45	216 815.682 2	-0.003 7	
47 ← 46	221 521.909 5	0.001 8	
48 ← 47	226 227.642 3	-0.002 2	
103 ← 102			
104 ← 103	488 438.686 0	-0.309 7	
105 ← 104	493 092.083 0	-0.307 6	
106 ← 105	497 744.746 0	-0.399 8	
107 ← 106	502 396.818 0	-0.499 2	
108 ← 107	507 048.640 0	-0.320 2	

$(5\nu_7^1)^{1e}$

11 ← 10			
12 ← 11	56 642.327 0	-0.001 4	
13 ← 12	61 362.983 2	0.001 5	
14 ← 13	66 083.749 8	-0.003 2	
15 ← 14	70 804.651 5	-0.002 6	
16 ← 15	75 525.696 4	-0.001 4	
17 ← 16	80 246.897 6	-0.000 1	
18 ← 17	84 968.276 4	0.008 5	
19 ← 18	89 689.825 9	0.002 3	
20 ← 19	94 411.585 1	0.004 4	
21 ← 20	99 133.555 9	-0.000 2	
22 ← 21	103 855.762 2	-0.005 7	
23 ← 22	108 578.227 9	-0.007 1	
24 ← 23	113 300.976 8	-0.000 6	
25 ← 24	118 024.019 9	0.003 6	
34 ← 33	160 548.790 3	0.012 1	
35 ← 34	165 276.189 8	-0.008 4	
36 ← 35	170 004.243 8	0.024 1	
37 ← 36	174 732.873 8	-0.001 0	
45 ← 44	212 588.566 4	0.002 6	
46 ← 45	217 324.214 5	0.002 4	
47 ← 46	222 060.734 0	-0.001 5	
48 ← 47	226 798.130 0	-0.008 3	
103 ← 102	485 582.202 0	0.215 7	
104 ← 103	490 302.221 0	-0.423 4	
105 ← 104	495 023.548 0	-0.252 5	
106 ← 105	499 745.433 0	0.075 8	
107 ← 106	504 467.169 0	-0.040 0	

$(5\nu_7^3)^{3e}$

11 ← 10	52 069.130 4	0.056 5	*
12 ← 11	56 802.021 6	0.085 4	*
13 ← 12	61 534.743 3	0.130 6	*
14 ← 13	66 267.070 5	-0.015 1	
15 ← 14	70 999.324 8	-0.011 5	
16 ← 15	75 731.346 8	0.001 1	
17 ← 16	80 463.099 4	0.005 4	
18 ← 17	85 194.565 1	0.004 7	
19 ← 18	89 925.726 7	0.003 1	
20 ← 19	94 656.564 6	0.003 3	
21 ← 20	99 387.058 5	0.008 2	
22 ← 21	104 117.159 5	-0.006 9	
23 ← 22	108 846.877 8	-0.006 8	
24 ← 23	113 576.178 1	-0.000 5	
25 ← 24	118 305.022 5	0.001 3	
34 ← 33	160 839.225 0	-0.032 2	

35 ← 34	165 018.949 4	-0.186 2	*
36 ← 35	169 729.927 5	-0.007 8	*
37 ← 36	174 440.431 5	0.037 2	*
45 ← 44	212 110.714 2	0.007 2	
46 ← 45	216 817.687 6	-0.004 7	
47 ← 46	221 524.247 6	-0.000 3	
48 ← 47	226 230.364 2	-0.001 2	
103 ← 102	484 247.053 0	0.108 9	
104 ← 103	488 922.733 0	0.115 3	
105 ← 104	493 597.954 0	0.189 0	
106 ← 105	498 272.215 0	-0.172 7	
107 ← 106	502 946.682 0	0.194 3	
108 ← 107	507 620.317 0	0.250 6	

$(5\nu_7^1)^{1f}$

11 ← 10	52 178.677 5	-0.001 0	
12 ← 11	56 922.484 4	-0.000 3	
13 ← 12	61 666.357 9	-0.004 1	
14 ← 13	66 410.310 7	-0.003 7	
15 ← 14	71 154.347 0	0.001 4	
16 ← 15	75 898.454 1	-0.004 5	
17 ← 16	80 642.656 6	0.000 6	
18 ← 17	85 386.946 4	0.006 4	
19 ← 18	90 131.311 0	-0.001 1	
20 ← 19	94 875.772 5	-0.000 6	
21 ← 20	99 620.322 9	-0.000 6	
22 ← 21	104 364.965 5	0.002 7	
23 ← 22	109 109.683 6	-0.006 7	
24 ← 23			
25 ← 24	118 599.404 4	0.002 1	
34 ← 33	161 306.563 4	-0.000 1	
35 ← 34	166 052.025 0	-0.004 9	
36 ← 35	170 797.490 0	-0.021 4	
37 ← 36	175 543.015 2	0.017 1	
45 ← 44	213 505.729 0	-0.004 9	
46 ← 45	218 250.748 6	0.000 3	
47 ← 46	222 995.649 9	0.002 9	
48 ← 47	227 740.421 0	0.004 6	
103 ← 102	488 170.998 0	-0.065 0	
104 ← 103	492 891.773 0	-0.192 3	
105 ← 104	497 612.324 0	0.081 4	
106 ← 105	502 332.427 0	0.536 9	
107 ← 106	507 050.881 0	-0.022 2	

$(5\nu_7^3)^{3f}$

11 ← 10	52 069.130 4	-0.047 5	*
12 ← 11	56 802.021 6	-0.076 4	*
13 ← 12	61 534.743 3	-0.112 3	*
14 ← 13	66 267.459 5	0.020 3	
15 ← 14	70 999.864 1	0.026 4	
16 ← 15	75 732.041 9	0.001 4	
17 ← 16	80 464.043 4	0.005 8	
18 ← 17	85 195.823 5	0.003 9	
19 ← 18	89 927.383 9	0.006 3	
20 ← 19	94 658.707 2	0.003 8	
21 ← 20	99 389.796 9	0.007 5	
22 ← 21	104 120.621 2	-0.007 5	
23 ← 22	108 851.211 7	-0.003 5	
24 ← 23	113 581.545 7	0.002 5	
25 ← 24	118 311.610 3	0.002 2	
34 ← 33	160 869.917 7	-0.006 0	

35 ← 34	165 561.794 4	-0.057 2	
36 ← 35	170 283.596 1	-0.031 6	
37 ← 36	175 004.514 2	-0.034 1	
45 ← 44	212 736.902 5	-0.003 5	
46 ← 45	217 448.624 4	-0.004 5	
47 ← 46	222 159.220 0	0.008 5	
48 ← 47	226 868.651 1	0.004 4	
103 ← 102	487 374.073 0	-0.455 6	
104 ← 103	492 095.268 0	-0.297 1	
105 ← 104	496 815.507 0	-0.375 2	
106 ← 105	501 535.743 0	0.262 5	
107 ← 106	506 253.976 0	-0.384 4	

$(5\nu_7^5)^{5e}$

11 ← 10	52 114.055 5	0.013 2
12 ← 11	56 851.207 6	0.003 2
13 ← 12	61 588.246 0	0.004 5
14 ← 13	66 325.140 6	-0.002 8
15 ← 14	71 061.895 9	-0.003 4
16 ← 15	75 798.492 9	-0.006 1
17 ← 16	80 534.930 3	-0.001 4
18 ← 17	85 271.190 1	0.003 1
19 ← 18	90 007.254 4	0.000 1
20 ← 19	94 743.122 5	-0.000 5
21 ← 20	99 478.790 3	0.007 8
22 ← 21	104 214.216 2	-0.005 9
23 ← 22	108 949.420 9	-0.010 3
24 ← 23	113 684.397 3	-0.001 7
25 ← 24	118 419.113 0	-0.001 8
34 ← 33	161 018.469 5	0.044 1
35 ← 34	165 750.038 5	0.017 2
36 ← 35	170 481.251 6	0.007 7
37 ← 36	175 212.083 1	0.001 2
45 ← 44	213 043.645 3	0.102 7 *
46 ← 45	217 770.510 5	0.120 4 *
47 ← 46	222 496.879 0	0.145 9 *
48 ← 47	227 222.767 7	0.209 0 *
103 ← 102	485 769.928 0	0.130 4
104 ← 103	490 432.528 0	-0.182 8
105 ← 104	495 093.968 0	-0.268 8
106 ← 105	499 754.530 0	0.070 1
107 ← 106	504 413.727 0	0.253 9

$(6\nu_7^0)^{0e}$

11 ← 10	52 272.980 7	-0.019 9
12 ← 11	57 028.966 3	-0.019 1
14 ← 13	66 543.974 1	-0.019 8
15 ← 14	71 303.140 4	-0.002 3
16 ← 15	76 063.437 9	-0.020 1
17 ← 16	80 824.967 5	-0.012 8
18 ← 17	85 587.727 6	-0.010 8
19 ← 18	90 351.743 7	-0.004 5
20 ← 19	95 117.008 6	-0.003 0
22 ← 21	104 651.221 3	-0.009 8
23 ← 22	109 420.112 0	-0.002 8
24 ← 23	114 190.116 1	0.008 3
25 ← 24	118 961.152 2	0.014 4
34 ← 33	161 930.904 5	-0.006 8
35 ← 34	166 706.781 5	-0.014 8
36 ← 35	171 482.582 5	-0.043 0
37 ← 36	176 258.312 7	-0.012 6

35 ← 34	165 597.247 2	-0.008 0
36 ← 35	170 324.310 7	-0.008 3
37 ← 36	175 051.103 8	-0.014 8
45 ← 44	212 856.618 4	0.000 3
46 ← 45	217 581.294 7	0.007 7
47 ← 46	222 305.758 2	0.004 7
48 ← 47	227 030.026 8	0.001 7
103 ← 102	486 676.877 0	0.433 9
104 ← 103	491 391.658 0	-0.023 3
105 ← 104	496 106.971 0	0.495 9
106 ← 105	500 821.099 0	0.292 3
107 ← 106		

$(5\nu_7^5)^{5f}$

11 ← 10	52 114.055 5	0.013 2
12 ← 11	56 851.207 6	0.003 2
13 ← 12	61 588.246 0	0.004 5
14 ← 13	66 325.140 6	-0.002 8
15 ← 14	71 061.895 9	-0.003 5
16 ← 15	75 798.492 9	-0.006 1
17 ← 16	80 534.930 3	-0.001 4
18 ← 17	85 271.190 1	0.003 1
19 ← 18	90 007.254 4	0.000 0
20 ← 19	94 743.122 5	-0.000 6
21 ← 20	99 478.790 3	0.007 7
22 ← 21	104 214.216 2	-0.006 2
23 ← 22	108 949.420 9	-0.010 7
24 ← 23	113 684.397 3	-0.002 3
25 ← 24	118 419.113 0	-0.002 7
34 ← 33	161 018.469 5	0.029 3
35 ← 34	165 750.038 5	-0.002 0
36 ← 35	170 481.251 6	-0.017 2
37 ← 36	175 212.083 1	-0.030 9
45 ← 44	213 043.645 3	-0.092 8 *
46 ← 45	217 770.510 5	-0.119 2 *
47 ← 46	222 496.879 0	-0.146 6 *
48 ← 47	227 222.767 7	-0.146 5 *
103 ← 102	486 114.608 0	0.108 8
104 ← 103	490 801.191 0	-0.311 6
105 ← 104	495 488.092 0	0.208 0
106 ← 105	500 173.626 0	-0.027 3
107 ← 106	504 858.771 0	-0.049 4

	45 ← 44	214 453.110 9	-0.013 6
	46 ← 45	219 225.629 2	-0.015 0
	47 ← 46	223 997.710 1	0.011 0
	48 ← 47	228 769.306 5	0.025 0
$(6\nu_7^2)^{2e}$			
	11 ← 10	52 246.029 3	0.011 8
	12 ← 11	56 991.837 7	0.011 4
	14 ← 13	66 480.468 4	0.007 6
	15 ← 14	71 223.172 3	0.006 8
	16 ← 15	75 964.730 3	0.002 2
	17 ← 16	80 705.113 8	0.003 2
	18 ← 17	85 444.293 8	0.006 8
	19 ← 18	90 182.238 8	-0.005 5
	20 ← 19	94 918.981 5	-0.002 5
	21 ← 20	99 654.516 9	-0.006 2
	22 ← 21	104 388.871 1	-0.022 9
	23 ← 22	109 122.126 6	-0.018 7
	24 ← 23		
	25 ← 24	118 585.539 5	-0.018 2
	34 ← 33	161 139.964 6	0.002 2
	35 ← 34	165 867.386 9	-0.015 0
	36 ← 35	170 595.064 7	-0.013 3
	37 ← 36	175 323.093 1	0.009 5
	45 ← 44	213 168.097 8	0.016 2
	46 ← 45	217 902.268 0	0.003 7
	47 ← 46	222 637.422 4	0.003 7
	48 ← 47	227 373.581 9	-0.013 2
$(6\nu_7^4)^{4e}$			
	11 ← 10	52 291.705 6	-0.003 3
	12 ← 11	57 044.838 3	-0.004 5
	13 ← 12	61 797.808 2	0.003 7
	14 ← 13	66 550.572 9	-0.006 4
	15 ← 14	71 303.140 4	-0.012 1
	16 ← 15	76 055.506 4	-0.002 6
	17 ← 16	80 807.640 6	0.006 7
	18 ← 17	85 559.531 0	0.019 1
	19 ← 18	90 311.158 1	0.030 7
	20 ← 19	95 062.502 4	0.037 5 *
	21 ← 20	99 813.563 0	0.054 6 *
	22 ← 21	104 564.324 3	0.083 0 *
	23 ← 22	109 314.744 0	0.096 8 *
	24 ← 23	114 064.738 3	0.029 5
	25 ← 24	118 814.384 2	-0.024 2
	34 ← 33	161 542.188 6	0.010 5
	35 ← 34	166 287.171 3	0.041 8
	36 ← 35	171 031.458 9	-0.012 0
	37 ← 36	175 775.150 4	-0.022 0
	45 ← 44	213 697.568 7	0.012 3
	46 ← 45	218 433.850 5	0.007 0
	47 ← 46	223 169.079 1	-0.006 0
	48 ← 47	227 903.220 8	-0.008 6
$(6\nu_7^6)^{6e}$			
	11 ← 10	52 338.629 7	0.068 0 *
	12 ← 11	57 096.102 0	0.024 5
	13 ← 12	61 853.465 5	0.012 2
	14 ← 13	66 610.681 0	0.003 5
	15 ← 14	71 367.739 3	0.001 0
	16 ← 15	76 124.627 5	0.003 7
	17 ← 16	80 881.323 3	0.001 1

$(6\nu_7^2)^{2f}$			
	11 ← 10	52 266.123 0	0.013 4
	12 ← 11	57 017.908 3	-0.002 4
	14 ← 13	66 521.800 3	0.014 5
	15 ← 14	71 273.890 5	0.015 7
	16 ← 15	76 026.087 2	0.012 2
	17 ← 16	80 778.411 5	0.017 6
	18 ← 17	85 530.857 8	0.018 7
	19 ← 18	90 283.432 6	0.014 4
	20 ← 19	95 036.157 8	0.019 0
	21 ← 20	99 789.030 6	0.022 2
	22 ← 21	104 542.039 7	0.005 4
	23 ← 22	109 295.234 3	0.010 3
	24 ← 23	114 048.599 6	0.015 2
	25 ← 24	118 802.139 0	0.016 2
	34 ← 33	161 593.002 9	0.002 9
	35 ← 34	166 348.663 0	0.024 1
	36 ← 35	171 104.522 9	0.012 8
	37 ← 36	175 860.630 6	0.015 2
	45 ← 44	213 917.769 7	-0.012 4
	46 ← 45	218 675.907 1	-0.007 7
	47 ← 46	223 434.166 0	-0.078 9 *
	48 ← 47	228 192.760 5	-0.002 0
$(6\nu_7^4)^{4f}$			
	11 ← 10	52 291.705 6	-0.004 4
	12 ← 11	57 044.838 3	-0.006 7
	13 ← 12	61 797.808 2	-0.000 2
	14 ← 13	66 550.572 9	-0.012 9
	15 ← 14	71 303.140 4	-0.022 7
	16 ← 15	76 055.506 4	-0.019 5
	17 ← 16	80 807.640 6	-0.019 3
	18 ← 17	85 559.531 0	-0.020 0
	19 ← 18	90 311.158 1	-0.026 8
	20 ← 19	95 062.502 4	-0.045 3 *
	21 ← 20	99 813.563 0	-0.062 4 *
	22 ← 21	104 564.324 3	-0.080 0 *
	23 ← 22	109 314.744 0	-0.126 6 *
	24 ← 23	114 064.980 9	-0.030 1
	25 ← 24	118 814.834 6	0.022 3
	34 ← 33	161 545.753 1	0.001 1
	35 ← 34	166 291.562 8	0.045 3
	36 ← 35	171 036.854 8	0.028 1
	37 ← 36	175 781.653 1	-0.020 1
	45 ← 44	213 723.310 0	0.000 4
	46 ← 45	218 463.859 2	-0.000 3
	47 ← 46	223 203.943 7	0.004 6
	48 ← 47	227 943.545 0	-0.009 2
$(6\nu_7^6)^{6f}$			
	11 ← 10	52 338.629 7	0.068 0 *
	12 ← 11	57 096.102 0	0.024 5
	13 ← 12	61 853.465 5	0.012 2
	14 ← 13	66 610.681 0	0.003 5
	15 ← 14	71 367.739 3	0.001 0
	16 ← 15	76 124.627 5	0.003 7
	17 ← 16	80 881.323 3	0.001 1

	18 ← 17	85 637.822 5	0.000 8
	19 ← 18	90 394.105 6	-0.004 7
	20 ← 19	95 150.174 5	-0.001 5
	21 ← 20	99 906.012 8	0.005 8
	22 ← 21	104 661.584 0	-0.007 2
	23 ← 22	109 416.904 1	-0.012 4
	24 ← 23	114 171.968 5	-0.002 4
	25 ← 24	118 926.737 8	-0.004 3
	34 ← 33	161 704.887 3	-0.023 5
	35 ← 34	166 456.175 0	0.004 9
	36 ← 35	171 207.006 8	-0.002 0
	37 ← 36	175 957.441 6	0.027 7
	45 ← 44	213 943.469 8	0.010 5
	46 ← 45	218 689.381 2	0.018 2
	47 ← 46	223 434.725 4	0.027 6
	48 ← 47	228 179.476 0	0.026 5
$(7\nu_7^1)^{1e}$			
	11 ← 10	52 298.414 9	-0.008 6
	12 ← 11	57 054.318 3	-0.010 2
	13 ← 12		
	14 ← 13	66 567.449 4	-0.010 4
	15 ← 14	71 324.777 4	-0.009 9
	16 ← 15	76 082.684 7	-0.011 1
	17 ← 16	80 841.240 9	-0.004 1
	18 ← 17	85 600.499 6	0.001 2
	19 ← 18	90 360.529 5	0.005 8
	20 ← 19	95 121.394 2	0.001 5
	21 ← 20		
	22 ← 21	104 645.962 4	-0.007 0
	23 ← 22	109 409.837 9	-0.002 5
	24 ← 23	114 174.891 1	0.010 3
	25 ← 24	118 941.196 3	0.016 6
	34 ← 33	161 908.506 9	0.013 8
	35 ← 34	166 691.657 3	0.003 3
	36 ← 35	171 476.697 5	0.001 6
	37 ← 36	176 263.587 1	0.011 1
	44 ← 43		
	45 ← 44	214 611.113 2	-0.261 1 *
	46 ← 45	219 408.630 0	-0.345 8 *
	47 ← 46	224 206.445 4	-0.418 9 *
	48 ← 47	229 004.336 3	-0.523 1 *
$(7\nu_7^3)^{3e}$			
	11 ← 10	52 470.945 2	-0.008 1
	12 ← 11	57 239.664 2	-0.008 6
	13 ← 12	62 007.996 7	-0.007 8
	14 ← 13	66 775.886 4	-0.016 8
	15 ← 14	71 543.307 6	-0.012 5
	16 ← 15	76 310.189 8	-0.013 3
	17 ← 16	81 076.495 6	-0.000 9
	18 ← 17	85 842.142 8	0.002 0
	19 ← 18	90 607.068 5	-0.004 1
	20 ← 19	95 371.223 0	-0.001 2
	21 ← 20	100 134.523 2	-0.001 3
	22 ← 21	104 896.902 0	0.003 7
	23 ← 22	109 658.271 2	0.004 0
	24 ← 23	114 418.563 0	0.013 0
	34 ← 33	161 944.239 5	0.046 6
	35 ← 34	166 687.744 4	0.003 7
	36 ← 35	171 429.602 2	0.010 2

	18 ← 17	85 637.822 5	0.000 8
	19 ← 18	90 394.105 6	-0.004 7
	20 ← 19	95 150.174 5	-0.001 5
	21 ← 20	99 906.012 8	0.005 8
	22 ← 21	104 661.584 0	-0.007 2
	23 ← 22	109 416.904 1	-0.012 4
	24 ← 23	114 171.968 5	-0.002 4
	25 ← 24	118 926.737 8	-0.004 3
	34 ← 33	161 704.887 3	-0.024 6
	35 ← 34	166 456.175 0	0.003 3
	36 ← 35	171 207.006 8	-0.004 2
	37 ← 36	175 957.441 6	0.024 8
	45 ← 44	213 943.469 8	-0.016 8
	46 ← 45	218 689.381 2	-0.016 9
	47 ← 46	223 434.725 4	-0.017 2
	48 ← 47	228 179.476 0	-0.030 5
$(7\nu_7^1)^{1f}$			
	11 ← 10	52 631.304 6	-0.014 0
	12 ← 11	57 417.147 6	-0.015 6
	13 ← 12	62 203.275 1	-0.015 0
	14 ← 13	66 989.695 2	-0.017 1
	15 ← 14	71 776.428 2	-0.012 6
	16 ← 15	76 563.469 3	-0.014 7
	17 ← 16	81 350.846 4	-0.001 3
	18 ← 17	86 138.532 3	-0.003 0
	19 ← 18	90 926.549 4	0.001 9
	20 ← 19	95 714.890 2	0.007 7
	21 ← 20	100 503.534 8	-0.000 8
	22 ← 21	105 292.512 4	0.012 5
	23 ← 22	110 081.772 3	0.006 3
	24 ← 23	114 871.341 6	0.019 9
	25 ← 24		
	34 ← 33	162 778.844 6	0.024 8
	35 ← 34	167 570.275 8	0.011 7
	36 ← 35	172 361.700 9	-0.032 4
	37 ← 36	177 153.203 5	0.002 3
	44 ← 43	210 690.993 8	-0.327 7 *
	45 ← 44	215 481.477 7	-0.411 6 *
	46 ← 45	220 271.723 1	-0.520 4 *
	47 ← 46	225 061.718 6	-0.645 9 *
	48 ← 47	229 851.442 5	-0.790 7 *
$(7\nu_7^3)^{3f}$			
	11 ← 10	52 471.508 2	-0.011 4
	12 ← 11	57 240.543 0	-0.011 1
	13 ← 12	62 009.316 3	-0.010 8
	14 ← 13	66 777.814 5	-0.013 3
	15 ← 14	71 546.037 1	-0.010 3
	16 ← 15	76 313.954 8	-0.025 1
	17 ← 16	81 081.620 3	-0.001 7
	18 ← 17	85 848.975 3	0.002 4
	19 ← 18	90 616.034 4	-0.000 4
	20 ← 19	95 382.816 1	0.003 7
	21 ← 20	100 149.321 6	0.008 3
	22 ← 21	104 915.547 3	-0.000 4
	23 ← 22	109 681.532 7	0.004 1
	24 ← 23	114 447.286 3	0.015 0
	34 ← 33	162 096.546 0	0.060 9
	35 ← 34	166 861.253 7	0.072 1
	36 ← 35	171 626.029 8	0.072 9

	$37 \leftarrow 36$	176 169.844 0	0.040 8		$37 \leftarrow 36$	176 390.911 3	0.069 5
	$45 \leftarrow 44$	214 048.011 5	0.006 1		$45 \leftarrow 44$	214 517.335 3	0.027 7
	$46 \leftarrow 45$	218 780.162 4	0.001 5		$46 \leftarrow 45$	219 284.424 5	0.002 0
	$47 \leftarrow 46$	223 512.458 9	-0.005 4		$47 \leftarrow 46$	224 051.883 6	-0.015 4
	$48 \leftarrow 47$	228 245.120 6	-0.014 1		$48 \leftarrow 47$	228 819.706 8	-0.046 3
$(7\nu_7^5)^{5e}$				$(7\nu_7^5)^{5f}$			
	$11 \leftarrow 10$	52 509.137 5	0.023 6		$11 \leftarrow 10$	52 509.137 5	0.023 6
	$12 \leftarrow 11$	57 281.964 0	-0.011 4		$12 \leftarrow 11$	57 281.964 0	-0.011 4
	$13 \leftarrow 12$	62 054.660 9	0.005 7		$13 \leftarrow 12$	62 054.660 9	0.005 6
	$14 \leftarrow 13$	66 827.139 6	0.001 5		$14 \leftarrow 13$	66 827.139 6	0.001 4
	$15 \leftarrow 14$	71 599.409 9	0.001 5		$15 \leftarrow 14$	71 599.409 9	0.001 3
	$16 \leftarrow 15$	76 371.448 1	-0.002 7		$16 \leftarrow 15$	76 371.448 1	-0.003 1
	$17 \leftarrow 16$	81 143.255 1	0.005 5		$17 \leftarrow 16$	81 143.255 1	0.004 8
	$18 \leftarrow 17$	85 914.791 8	0.002 7		$18 \leftarrow 17$	85 914.791 8	0.001 5
	$19 \leftarrow 18$	90 686.061 4	0.007 8		$19 \leftarrow 18$	90 686.061 4	0.005 7
	$20 \leftarrow 19$	95 457.031 7	0.004 5		$20 \leftarrow 19$	95 457.031 7	0.001 2
	$21 \leftarrow 20$	100 227.696 2	0.002 3		$21 \leftarrow 20$	100 227.696 2	-0.002 9
	$22 \leftarrow 21$	104 998.039 8	0.002 3		$22 \leftarrow 21$	104 998.039 8	-0.005 7
	$23 \leftarrow 22$	109 768.036 9	-0.004 9		$23 \leftarrow 22$	109 768.036 9	-0.016 8
	$24 \leftarrow 23$	114 537.695 5	0.005 4		$24 \leftarrow 23$	114 537.695 5	-0.012 3
	$34 \leftarrow 33$	162 210.723 6	-0.046 7		$34 \leftarrow 33$	162 211.204 8	-0.001 2
	$35 \leftarrow 34$	166 975.304 3	-0.022 4		$35 \leftarrow 34$	166 975.893 8	-0.001 6
	$36 \leftarrow 35$	171 739.259 5	-0.040 9		$36 \leftarrow 35$	171 739.999 3	-0.038 0
	$37 \leftarrow 36$	176 502.662 2	-0.006 1		$37 \leftarrow 36$	176 503.621 8	0.005 5
	$45 \leftarrow 44$	214 584.554 9	-0.020 1		$45 \leftarrow 44$	214 590.319 3	0.018 5
	$46 \leftarrow 45$	219 341.179 8	-0.027 6		$46 \leftarrow 45$	219 348.231 8	0.021 2
	$47 \leftarrow 46$	224 096.885 5	-0.026 2		$47 \leftarrow 46$	224 105.471 6	0.032 9
	$48 \leftarrow 47$	228 851.615 3	-0.026 8		$48 \leftarrow 47$	228 862.024 6	0.045 6
$(7\nu_7^7)^{7e}$				$(7\nu_7^7)^{7f}$			
	$11 \leftarrow 10$	52 557.157 9	0.129 1 *		$11 \leftarrow 10$	52 557.157 9	0.129 1 *
	$12 \leftarrow 11$	57 334.410 2	0.081 0 *		$12 \leftarrow 11$	57 334.410 2	0.081 0 *
	$13 \leftarrow 12$	62 111.502 0	0.032 2		$13 \leftarrow 12$	62 111.502 0	0.032 2
	$14 \leftarrow 13$	66 888.454 5	0.017 6		$14 \leftarrow 13$	66 888.454 5	0.017 6
	$15 \leftarrow 14$	71 665.227 1	0.010 0		$15 \leftarrow 14$	71 665.227 1	0.010 0
	$16 \leftarrow 15$	76 441.799 8	0.002 9		$16 \leftarrow 15$	76 441.799 8	0.002 9
	$17 \leftarrow 16$	81 218.171 0	0.008 5		$17 \leftarrow 16$	81 218.171 0	0.008 5
	$18 \leftarrow 17$	85 994.309 8	0.009 5		$18 \leftarrow 17$	85 994.309 8	0.009 5
	$19 \leftarrow 18$	90 770.196 4	-0.000 1		$19 \leftarrow 18$	90 770.196 4	-0.000 1
	$20 \leftarrow 19$	95 545.837 5	0.000 1		$20 \leftarrow 19$	95 545.837 5	0.000 1
	$21 \leftarrow 20$	100 321.221 6	0.012 5		$21 \leftarrow 20$	100 321.221 6	0.012 5
	$22 \leftarrow 21$	105 096.295 0	-0.002 6		$22 \leftarrow 21$	105 096.295 0	-0.002 6
	$23 \leftarrow 22$	109 871.073 0	-0.016 0		$23 \leftarrow 22$	109 871.073 0	-0.016 0
	$24 \leftarrow 23$	114 645.559 7	-0.009 5		$24 \leftarrow 23$	114 645.559 7	-0.009 5
	$34 \leftarrow 33$	162 370.040 0	-0.057 0		$34 \leftarrow 33$	162 370.040 0	-0.057 1
	$35 \leftarrow 34$	167 140.155 0	-0.044 6		$35 \leftarrow 34$	167 140.155 0	-0.044 8
	$36 \leftarrow 35$	171 909.815 9	0.001 1		$36 \leftarrow 35$	171 909.815 9	0.000 9
	$37 \leftarrow 36$	176 678.903 4	-0.023 7		$37 \leftarrow 36$	176 678.903 5	-0.024 0
	$44 \leftarrow 43$	210 047.283 8	-0.020 9		$44 \leftarrow 43$	210 047.283 8	-0.025 0
	$45 \leftarrow 44$	214 811.810 6	-0.009 4		$45 \leftarrow 44$	214 811.810 6	-0.014 9
	$46 \leftarrow 45$	219 575.691 8	0.005 5		$46 \leftarrow 45$	219 575.691 8	-0.002 1
	$47 \leftarrow 46$	224 338.904 9	0.018 3		$47 \leftarrow 46$	224 338.904 9	0.008 2
	$48 \leftarrow 47$	229 101.435 4	0.032 0		$48 \leftarrow 47$	229 101.435 4	0.018 6
$(\nu_6^1)^{1e}$				$(\nu_6^1)^{1f}$			
	$12 \leftarrow 11$	55 544.502 1	-0.001 4		$12 \leftarrow 11$	55 567.198 2	-0.000 8
	$13 \leftarrow 12$	60 173.029 2	0.001 0		$13 \leftarrow 12$	60 197.616 5	0.000 6
	$14 \leftarrow 13$	64 801.505 5	-0.003 2		$14 \leftarrow 13$	64 827.986 3	-0.002 5
	$15 \leftarrow 14$	69 429.938 0	-0.003 7		$15 \leftarrow 14$	69 458.311 6	-0.002 9
	$16 \leftarrow 15$	74 058.324 1	0.000 3		$16 \leftarrow 15$	74 088.591 3	0.001 7
	$17 \leftarrow 16$	78 686.650 4	-0.001 2		$17 \leftarrow 16$	78 718.810 4	-0.000 2

	18 ← 17	83 314.924 7	0.003 0		18 ← 17	83 348.980 3	0.006 0
	19 ← 18	87 943.134 8	0.004 0		19 ← 18	87 979.076 5	-0.000 7
	20 ← 19	92 571.276 9	0.001 4		20 ← 19	92 609.121 0	0.004 9
	21 ← 20	97 199.353 5	0.001 0		21 ← 20	97 239.092 7	0.005 2
	22 ← 21	101 827.355 3	-0.003 0		22 ← 21	101 868.981 7	-0.006 4
	23 ← 22	106 455.290 1	0.000 6		23 ← 22	106 498.812 6	-0.002 0
	24 ← 23	111 083.138 2	-0.004 7		24 ← 23	111 128.559 1	-0.004 6
	25 ← 24	115 710.917 8	0.002 7		25 ← 24	115 758.236 9	0.005 0
	35 ← 34	161 983.432 4	-0.000 8		35 ← 34	162 049.737 1	0.000 2
	36 ← 35	166 610.096 7	0.005 3		36 ← 35	166 678.299 9	0.003 1
	37 ← 36	171 236.610 6	-0.017 7		37 ← 36	171 306.755 7	0.019 6
	38 ← 37	175 863.052 8	0.012 0		38 ← 37	175 935.012 4	-0.039 2
	46 ← 45	212 869.472 3	0.007 6		46 ← 45	212 956.722 1	-0.002 2
	47 ← 46	217 494.608 7	-0.000 4		47 ← 46	217 583.780 8	0.002 5
	48 ← 47	222 119.596 8	0.000 3		48 ← 47	222 210.675 4	-0.000 5
	49 ← 48	226 744.417 3	-0.006 1		49 ← 48	226 837.416 0	0.002 0
$(\nu_6^1+\nu_7^1)^{0e}$				$(\nu_6^1+\nu_7^1)^{0f}$			
	12 ← 11	55 846.449 0	-0.000 2		12 ← 11	55 868.169 7	0.003 3
	13 ← 12	60 500.223 8	0.002 5		13 ← 12	60 523.593 3	0.004 4
	14 ← 13	65 153.968 1	-0.001 7		14 ← 13	65 178.946 9	-0.002 6
	15 ← 14	69 807.690 9	-0.001 9		15 ← 14	69 834.240 0	-0.003 5
	16 ← 15	74 461.392 4	0.003 9		16 ← 15	74 489.467 6	0.001 4
	17 ← 16	79 115.053 4	-0.001 7		17 ← 16	79 144.611 3	-0.001 5
	18 ← 17	83 768.692 8	0.002 0		18 ← 17	83 799.683 0	0.004 3
	19 ← 18	88 422.297 3	0.003 5		19 ← 18	88 454.660 2	0.001 1
	20 ← 19	93 075.860 7	-0.001 5		20 ← 19	93 109.551 6	0.002 3
	21 ← 20	97 729.391 3	-0.003 0		21 ← 20	97 764.348 4	0.003 7
	22 ← 21	102 382.887 2	-0.001 1		22 ← 21	102 419.043 0	0.002 4
	23 ← 22	107 036.342 2	0.000 0		23 ← 22	107 073.620 8	-0.011 4
	24 ← 23	111 689.754 4	0.000 1		24 ← 23	111 728.108 4	-0.006 6
	25 ← 24	116 343.121 5	-0.001 2		25 ← 24	116 382.485 2	0.001 0
	35 ← 34	162 873.980 1	-0.013 4		35 ← 34	162 918.900 4	-0.014 5
	36 ← 35	167 526.747 0	-0.010 0		36 ← 35	167 571.713 1	-0.017 7
	37 ← 36	172 179.466 3	0.012 7		37 ← 36	172 224.412 5	0.034 3
	38 ← 37	176 832.105 2	0.023 8		38 ← 37	176 876.882 9	0.030 5
	46 ← 45	214 050.353 3	-0.005 1		46 ← 45	214 089.869 2	-0.007 0
	47 ← 46	218 702.263 9	-0.000 7		47 ← 46	218 740.589 8	-0.001 4
	48 ← 47	223 354.080 8	0.002 6		48 ← 47	223 391.085 6	-0.003 0
	49 ← 48	228 005.797 4	0.000 8		49 ← 48	228 041.370 7	0.006 6
$(\nu_6^1+\nu_7^1)^{2e}$				$(\nu_6^1+\nu_7^1)^{2f}$			
	12 ← 11	55 857.183 8	-0.003 9		12 ← 11	55 857.996 4	-0.000 3
	13 ← 12	60 511.606 8	-0.001 1		13 ← 12	60 512.640 7	0.001 8
	14 ← 13	65 165.940 1	-0.005 2		14 ← 13	65 167.233 1	-0.002 3
	15 ← 14	69 820.188 1	-0.005 6		15 ← 14	69 821.778 7	-0.003 9
	16 ← 15	74 474.347 3	0.000 7		16 ← 15	74 476.279 8	0.002 8
	17 ← 16	79 128.394 8	-0.003 0		17 ← 16	79 130.713 7	-0.001 3
	18 ← 17	83 782.341 5	0.000 5		18 ← 17	83 785.093 7	0.000 5
	19 ← 18	88 436.171 1	0.001 2		19 ← 18	88 439.408 1	0.000 0
	20 ← 19	93 089.881 2	0.002 9		20 ← 19	93 093.659 6	0.003 5
	21 ← 20	97 743.464 2	0.004 2		21 ← 20	97 747.839 5	0.005 8
	22 ← 21	102 396.905 6	-0.003 0		22 ← 21	102 401.935 5	-0.002 0
	23 ← 22	107 050.216 0	-0.001 9		23 ← 22	107 055.955 8	-0.008 0
	24 ← 23	111 703.383 7	0.001 8		24 ← 23	111 709.906 4	-0.002 9
	25 ← 24	116 356.402 2	0.008 0		25 ← 24	116 363.775 6	0.005 2
	35 ← 34	162 876.821 2	-0.011 1		35 ← 34	162 896.986 4	0.016 2
	36 ← 35	167 527.768 3	-0.006 1		36 ← 35	167 549.694 6	0.022 3
	37 ← 36	172 178.509 2	0.016 9		37 ← 36	172 202.220 6	-0.027 6
	38 ← 37	176 829.011 4	0.031 2		38 ← 37	176 854.682 5	-0.011 8
	46 ← 45	214 023.885 9	-0.016 0		46 ← 45	214 069.179 2	0.003 1

	47 ← 46	218 672.048 6	-0.009 9
	48 ← 47	223 319.931 3	0.003 6
	49 ← 48	227 967.517 7	0.013 7
$(\nu_5^1)^{1e}$			
	12 ← 11	55 501.220 5	0.000 1
	13 ← 12	60 126.140 8	0.002 0
	14 ← 13	64 751.011 0	-0.002 2
	15 ← 14	69 375.837 0	-0.003 3
	16 ← 15	74 000.618 2	0.001 6
	17 ← 16	78 625.339 0	0.000 1
	18 ← 17	83 250.010 1	0.006 4
	19 ← 18	87 874.607 5	-0.000 1
	20 ← 19	92 499.149 2	0.001 9
	21 ← 20	97 123.621 1	0.001 6
	22 ← 21	101 748.024 0	0.003 3
	23 ← 22	106 372.343 4	-0.004 2
	24 ← 23	110 996.597 4	0.000 5
	25 ← 24	115 620.768 1	0.002 9
	35 ← 34	161 857.250 9	-0.005 5
	36 ← 35	166 480.289 3	-0.023 7
	37 ← 36	171 103.266 3	0.017 7
	38 ← 37	175 726.026 4	-0.033 4
	46 ← 45	212 703.678 3	0.001 3
	47 ← 46	217 325.221 8	0.001 0
	48 ← 47	221 946.601 6	-0.005 8
	49 ← 48	226 567.841 0	0.007 5
$(\nu_5^1+\nu_7^1)^0$			
	12 ← 11	55 815.071 7	-0.000 5
	13 ← 12	60 466.470 1	0.000 4
	14 ← 13	65 117.897 9	-0.003 1
	15 ← 14	69 769.364 2	-0.004 6
	16 ← 15	74 420.887 0	0.011 4
	17 ← 16	79 072.418 6	-0.005 1
	18 ← 17	83 724.015 6	0.000 0
	19 ← 18	88 375.657 8	0.004 3
	20 ← 19	93 027.339 0	-0.000 5
	21 ← 20	97 679.073 6	-0.002 2
	22 ← 21	102 330.860 9	-0.003 2
	23 ← 22	106 982.707 7	0.001 5
	24 ← 23	111 634.604 8	0.001 3
	25 ← 24	116 286.558 2	0.000 8
	35 ← 34	162 809.255 4	-0.002 0
	36 ← 35	167 461.797 7	-0.022 5
	37 ← 36	172 114.484 5	0.058 9 *
	38 ← 37	176 767.093 0	0.023 9
	46 ← 45	213 988.839 6	-0.001 5
	47 ← 46	218 641.521 3	0.001 0
	48 ← 47	223 294.156 9	-0.001 0
	49 ← 48	227 946.743 6	0.000 8
$(\nu_5^1+\nu_7^1)^2$			
	12 ← 11	55 818.098 2	-0.001 5
	13 ← 12	60 469.020 1	-0.000 3
	14 ← 13	65 119.796 3	-0.004 1
	15 ← 14	69 770.425 7	-0.003 2
	16 ← 15		
	17 ← 16	79 071.187 4	-0.001 9
	18 ← 17	83 721.300 6	0.000 6
	19 ← 18	88 371.229 6	0.012 2
	20 ← 19	93 020.931 5	0.000 5

	47 ← 46	218 720.295 4	-0.003 2
	48 ← 47	223 371.258 0	0.001 2
	49 ← 48	228 022.047 1	-0.000 1
$(\nu_5^1)^{1f}$			
	12 ← 11	55 523.701 5	-0.002 5
	13 ← 12	60 150.494 7	-0.000 6
	14 ← 13	64 777.238 0	-0.004 5
	15 ← 14	69 403.936 9	-0.005 2
	16 ← 15	74 030.590 9	0.000 1
	17 ← 16	78 657.182 8	-0.002 4
	18 ← 17	83 283.723 8	0.001 8
	19 ← 18	87 910.199 2	0.001 6
	20 ← 19	92 536.607 7	-0.001 1
	21 ← 20	97 162.950 4	-0.001 7
	22 ← 21	101 789.232 9	0.008 6
	23 ← 22	106 415.419 6	-0.002 2
	24 ← 23	111 041.538 0	-0.003 4
	25 ← 24	115 667.579 5	-0.000 2
	35 ← 34	161 922.747 5	-0.003 4
	36 ← 35	166 547.692 7	0.019 5
	37 ← 36	171 172.456 7	-0.017 3
	38 ← 37	175 797.195 3	0.045 3
	46 ← 45	212 789.664 0	-0.002 1
	47 ← 46	217 413.068 6	-0.001 1
	48 ← 47	222 036.313 5	-0.001 9
	49 ← 48	226 659.399 8	-0.000 2
$(\nu_5^1+\nu_7^1)^0$			
	12 ← 11	55 824.237 2	-0.005 2
	13 ← 12	60 475.956 8	0.004 5
	14 ← 13	65 127.585 0	-0.002 7
	15 ← 14	69 779.140 8	-0.002 2
	16 ← 15	74 430.612 9	0.000 3
	17 ← 16	79 081.991 9	0.001 1
	18 ← 17	83 733.277 2	0.005 2
	19 ← 18	88 384.454 2	0.003 7
	20 ← 19	93 035.522 3	0.001 7
	21 ← 20	97 686.477 5	0.000 6
	22 ← 21	102 337.306 3	-0.007 3
	23 ← 22	106 988.026 4	0.001 2
	24 ← 23	111 638.606 1	-0.000 1
	25 ← 24	116 289.049 3	-0.001 7
	35 ← 34	162 784.792 4	-0.016 4
	36 ← 35	167 433.412 8	0.015 2
	37 ← 36	172 081.782 4	-0.003 5
	38 ← 37	176 729.979 3	0.010 7
	46 ← 45	213 907.433 2	0.000 1
	47 ← 46	218 553.541 9	-0.002 4
	48 ← 47		
	49 ← 48	227 845.002 9	0.001 4
$(\nu_5^1+\nu_7^1)^2$			
	12 ← 11	55 820.460 3	-0.001 7
	13 ← 12	60 472.028 1	0.000 7
	14 ← 13	65 123.556 2	-0.003 1
	15 ← 14	69 775.050 8	-0.004 3
	16 ← 15	74 426.513 7	0.001 5
	17 ← 16	79 077.926 6	-0.001 3
	18 ← 17	83 729.301 0	0.001 2
	19 ← 18	88 380.628 1	0.003 0
	20 ← 19	93 031.901 8	0.000 4

	21 ← 20	97 670.431 8	0.001 0		21 ← 20	97 683.124 2	-0.001 7
	22 ← 21	102 319.712 1	0.005 2		22 ← 21	102 334.291 3	-0.004 8
	23 ← 22	106 968.742 4	-0.006 9		23 ← 22	106 985.411 8	0.002 4
	24 ← 23	111 617.544 0	-0.004 7		24 ← 23	111 636.465 5	0.002 5
	25 ← 24	116 266.097 9	0.002 4		25 ← 24	116 287.456 2	0.001 8
	35 ← 34	162 735.823 0	-0.019 0		35 ← 34	162 793.363 6	0.009 9
	36 ← 35	167 381.098 8	0.009 6		36 ← 35	167 443.496 5	0.015 0
	37 ← 36	172 025.989 0	-0.011 6		37 ← 36	172 093.466 1	-0.047 8 *
	38 ← 37	176 670.595 8	0.023 3		38 ← 37	176 743.435 2	-0.012 7
	46 ← 45	213 814.732 6	-0.004 5		46 ← 45	213 939.003 0	-0.005 5
	47 ← 46	218 456.212 4	-0.002 2		47 ← 46	218 587.917 9	0.001 9
	48 ← 47	223 097.368 9	0.010 3		48 ← 47	223 236.689 1	-0.003 4
	49 ← 48	227 738.169 3	-0.004 7		49 ← 48	227 885.339 3	0.004 9
$(\nu_4)^{0e}$							
	12 ← 11	55 419.265 4	-0.000 1				
	13 ← 12	60 037.353 3	0.002 5				
	14 ← 13	64 655.388 6	-0.002 7				
	15 ← 14	69 273.379 8	-0.003 7				
	16 ← 15	73 891.326 7	0.002 6				
	17 ← 16	78 509.209 2	-0.000 4				
	18 ← 17	83 127.042 2	0.005 7				
	19 ← 18	87 744.805 1	0.003 6				
	20 ← 19	92 362.501 7	0.000 7				
	21 ← 20	96 980.136 6	0.004 8				
	22 ← 21	101 597.685 5	-0.004 9				
	23 ← 22	106 215.168 4	-0.004 9				
	24 ← 23	110 832.574 2	-0.003 1				
	25 ← 24	115 449.900 3	0.001 6				
	35 ← 34	161 617.826 4	-0.007 6				
	36 ← 35	166 234.040 3	0.014 9				
	37 ← 36	170 850.072 6	-0.021 3				
	38 ← 37	175 466.034 5	-0.001 7				
	46 ← 45	212 388.639 3	0.006 9				
	47 ← 46	217 003.292 5	0.002 8				
	48 ← 47	221 617.872 6	0.084 8 *				
	49 ← 48	226 232.117 3	-0.006 2				
$(\nu_4 + \nu_7^1)^{1e}$				$(\nu_4 + \nu_7^1)^{1f}$			
	12 ← 11	55 663.575 4	-0.005 7		12 ← 11	55 761.634 4	0.003 5
	13 ← 12	60 301.996 4	-0.005 7		13 ← 12	60 408.205 9	0.005 2
	14 ← 13	64 940.362 0	-0.010 7		14 ← 13	65 054.716 0	0.001 5
	15 ← 14	69 578.679 9	-0.008 9		15 ← 14	69 701.166 6	-0.001 7
	16 ← 15	74 216.945 1	-0.001 6		16 ← 15	74 347.560 8	0.003 1
	17 ← 16	78 855.139 1	-0.003 4		17 ← 16	78 993.880 0	0.001 6
	18 ← 17	83 493.273 0	0.000 7		18 ← 17	83 640.135 5	0.009 3
	19 ← 18	88 131.330 5	-0.001 7		19 ← 18	88 286.300 6	0.003 8
	20 ← 19	92 769.320 5	0.002 0		20 ← 19	92 932.389 8	0.003 9
	21 ← 20	97 407.228 2	0.000 9		21 ← 20	97 578.389 4	0.000 0
	22 ← 21	102 045.060 6	0.005 9		22 ← 21	102 224.300 6	-0.002 3
	23 ← 22	106 682.792 7	-0.004 2		23 ← 22	106 870.120 4	-0.001 8
	24 ← 23	111 320.454 7	0.004 6		24 ← 23	111 515.839 4	-0.003 7
	25 ← 24	115 958.015 6	0.005 1		25 ← 24	116 161.462 1	0.000 8
	35 ← 34	162 327.678 3	0.005 6		35 ← 34	162 611.068 2	-0.004 1
	36 ← 35	166 963.998 0	0.036 2		36 ← 35	167 255.243 0	-0.041 3
	38 ← 37	176 236.145 7	0.023 8		38 ← 37	176 543.202 7	-0.042 9
	46 ← 45	213 318.615 8	-0.031 6		46 ← 45	213 688.324 4	0.002 9
	47 ← 46	217 953.235 9	0.021 2		47 ← 46	218 330.635 5	0.008 2
	48 ← 47	222 587.632 9	0.029 2		48 ← 47	222 972.731 9	-0.003 6
	49 ← 48	227 221.783 1	-0.027 5		49 ← 48	227 614.644 7	0.002 7

$(\nu_4+2\nu_7^0)^{0e}$							
	$12 \leftarrow 11$	55 973.014 8	-0.004 4				
	$13 \leftarrow 12$	60 637.716 0	-0.006 6				
	$14 \leftarrow 13$	65 302.489 6	-0.005 2				
	$15 \leftarrow 14$	69 967.337 0	-0.004 2				
	$16 \leftarrow 15$	74 632.266 4	-0.000 5				
	$17 \leftarrow 16$	79 297.274 7	-0.002 8				
	$18 \leftarrow 17$	83 962.385 0	0.007 0				
	$19 \leftarrow 18$	88 627.576 0	0.002 3				
	$20 \leftarrow 19$	93 292.870 2	0.000 5				
	$21 \leftarrow 20$	97 958.278 2	0.007 3				
	$22 \leftarrow 21$	102 623.756 1	-0.026 0 *				
	$23 \leftarrow 22$	107 289.405 7	-0.002 3				
	$24 \leftarrow 23$	111 955.155 4	0.002 4				
	$25 \leftarrow 24$	116 621.021 1	-0.000 2				
	$35 \leftarrow 34$	163 287.137 3	-0.001 8				
	$36 \leftarrow 35$	167 954.525 0	0.001 5				
	$37 \leftarrow 36$	172 622.042 6	-0.002 6				
	$46 \leftarrow 45$	214 635.046 9	-0.012 8				
	$47 \leftarrow 46$	219 303.649 3	0.034 2				
	$48 \leftarrow 47$	223 972.206 3	-0.012 6				
	$49 \leftarrow 48$	228 640.849 5	-0.008 0				
$(\nu_4+2\nu_7^2)^{2e}$				$(\nu_4+2\nu_7^2)^{2f}$			
	$12 \leftarrow 11$	55 986.070 2	0.001 0		$12 \leftarrow 11$	55 988.803 2	0.001 0
	$13 \leftarrow 12$	60 650.813 4	0.004 3		$13 \leftarrow 12$	60 654.293 4	0.004 7
	$14 \leftarrow 13$	65 315.364 2	-0.000 9		$14 \leftarrow 13$	65 319.715 3	-0.000 7
	$15 \leftarrow 14$	69 979.720 3	-0.002 5		$15 \leftarrow 14$	69 985.077 8	-0.001 7
	$16 \leftarrow 15$	74 643.869 2	0.001 1		$16 \leftarrow 15$	74 650.375 6	0.000 9
	$17 \leftarrow 16$	79 307.786 0	-0.000 9		$17 \leftarrow 16$	79 315.595 7	-0.001 3
	$18 \leftarrow 17$	83 971.474 9	0.009 8		$18 \leftarrow 17$	83 980.747 5	0.005 6
	$19 \leftarrow 18$	88 634.897 9	0.009 1		$19 \leftarrow 18$	88 645.804 1	-0.000 9
	$20 \leftarrow 19$	93 298.045 0	0.000 9		$20 \leftarrow 19$	93 310.780 8	-0.000 8
	$21 \leftarrow 20$	97 960.924 2	0.007 0		$21 \leftarrow 20$	97 975.669 4	0.002 1
	$22 \leftarrow 21$	102 623.756 1	0.261 5 *		$22 \leftarrow 21$	102 640.453 4	-0.004 1
	$23 \leftarrow 22$	107 285.754 1	-0.008 6		$23 \leftarrow 22$	107 305.143 2	-0.004 5
	$24 \leftarrow 23$	111 947.705 5	-0.003 0		$24 \leftarrow 23$	111 969.728 7	-0.004 7
	$25 \leftarrow 24$	116 609.317 5	-0.001 5		$25 \leftarrow 24$	116 634.205 5	-0.004 7
	$35 \leftarrow 34$	163 204.433 0	0.018 9		$35 \leftarrow 34$	163 271.990 5	-0.010 2
	$36 \leftarrow 35$	167 861.590 2	-0.012 9		$36 \leftarrow 35$	167 934.998 6	0.014 6
	$37 \leftarrow 36$	172 518.322 1	-0.016 8		$37 \leftarrow 36$	172 597.797 0	-0.008 0
	$46 \leftarrow 45$	214 408.031 0	0.008 9		$46 \leftarrow 45$	214 555.158 7	-0.004 8
	$47 \leftarrow 46$	219 060.102 1	0.004 0		$47 \leftarrow 46$	219 216.119 2	-0.001 0
	$48 \leftarrow 47$	223 711.719 2	0.002 3		$48 \leftarrow 47$	223 876.866 4	-0.000 2
	$49 \leftarrow 48$	228 362.871 8	-0.011 9		$49 \leftarrow 48$	228 537.405 6	0.007 0

Tabelle F.3 Zugeordnete a-Typ-Rotationsübergänge von ^{15}NCCNO im Frequenzbereich zwischen 52 und 179 GHz.

	$J' \leftarrow J''$	$\frac{\nu_{\mathrm{exp}}}{\mathrm{MHz}}$	$\frac{\nu_{\mathrm{exp}}-\nu_{\mathrm{calc}}}{\mathrm{MHz}}$	$J' \leftarrow J''$	$\frac{\nu_{\mathrm{exp}}}{\mathrm{MHz}}$	$\frac{\nu_{\mathrm{exp}}-\nu_{\mathrm{calc}}}{\mathrm{MHz}}$
Grund						
	$12 \leftarrow 11$	53 882.704 5	0.001 6			
	$13 \leftarrow 12$	58 372.756 2	0.003 5			
	$14 \leftarrow 13$	62 862.760 0	-0.000 4			
	$15 \leftarrow 14$	67 352.721 7	-0.001 1			
	$16 \leftarrow 15$	71 842.637 4	0.000 8			
	$17 \leftarrow 16$	76 332.496 1	-0.002 6			

18 ← 17	80 822.296 5	-0.009 3
19 ← 18	85 312.043 9	-0.010 8
20 ← 19	89 801.763 7	0.021 5
21 ← 20	94 291.368 1	0.003 1
22 ← 21	98 780.919 9	-0.000 1
23 ← 22	103 270.404 2	0.000 2
24 ← 23	107 759.808 1	-0.005 6
25 ← 24	112 249.143 0	-0.003 0
26 ← 25	116 738.404 3	0.006 6
36 ← 35	161 625.759 2	-0.020 1
38 ← 37	170 601.944 9	-0.025 8
39 ← 38	175 089.904 1	0.018 8
47 ← 46	210 988.449 5	0.004 3
48 ← 47	215 475.127 7	0.003 6
49 ← 48	219 961.648 6	-0.001 7
50 ← 49	224 448.024 1	0.003 4
51 ← 50	228 934.226 0	-0.006 2

$(\nu_7^1)^{1e}$

12 ← 11	54 133.291 3	0.001 8
13 ← 12	58 644.191 3	-0.004 9
14 ← 13	63 155.050 6	-0.004 0
15 ← 14	67 665.862 8	0.001 5
16 ← 15	72 176.619 4	0.007 0
17 ← 16	76 687.297 5	-0.006 8
18 ← 17	81 197.923 2	-0.010 1
19 ← 18	85 708.501 6	0.005 9
20 ← 19	90 218.979 8	-0.008 0
21 ← 20	94 729.415 9	0.009 9
22 ← 21	99 239.748 5	0.001 8
23 ← 22	103 750.004 4	-0.001 7
24 ← 23	108 260.173 8	-0.006 8
25 ← 24	112 770.271 4	0.004 9
26 ← 25	117 280.262 4	0.002 2
36 ← 35	162 374.320 7	-0.008 1
37 ← 36	166 883.074 2	0.004 8
38 ← 37	171 391.673 0	-0.001 6
39 ← 38		
47 ← 46	211 962.447 1	0.005 7
48 ← 47	216 469.509 2	0.011 4
49 ← 48	220 976.384 2	0.004 2
50 ← 49	225 483.079 8	-0.004 9
51 ← 50	229 989.595 7	-0.012 7

$(2\nu_7^0)^{0e}$

12 ← 11	54 443.017 1	0.001 9
13 ← 12	58 980.083 2	-0.006 1
14 ← 13	63 517.189 5	-0.011 6
15 ← 14	68 054.338 4	-0.015 1
16 ← 15	72 591.547 3	-0.002 2
18 ← 17	81 666.090 6	0.006 7
19 ← 18	86 203.425 4	-0.002 7
20 ← 19	90 740.830 8	0.003 3
21 ← 20	95 278.321 0	0.036 0 *
22 ← 21	99 815.816 4	0.013 2
23 ← 22	104 353.392 4	0.007 4
24 ← 23	108 891.025 3	-0.007 6
25 ← 24	113 428.751 8	0.002 3
36 ← 35	163 348.771 6	0.021 1
37 ← 36	167 887.519 4	0.088 0 *
38 ← 37	172 426.190 6	-0.006 1

$(\nu_7^1)^{1f}$

12 ← 11	54 232.063 1	-0.000 5
13 ← 12	58 751.177 1	0.000 9
14 ← 13	63 270.236 3	0.001 8
15 ← 14	67 789.238 1	0.003 7
16 ← 15	72 308.177 0	0.005 2
17 ← 16	76 827.041 1	-0.001 4
18 ← 17	81 345.851 9	0.009 5
19 ← 18	85 864.567 8	0.000 5
20 ← 19	90 383.215 3	0.002 3
21 ← 20	94 901.770 9	-0.004 6
22 ← 21	99 420.253 1	0.002 5
23 ← 22	103 938.631 4	-0.002 8
24 ← 23	108 456.915 4	-0.006 8
25 ← 24	112 975.108 1	-0.002 3
26 ← 25	117 493.125 0	-0.069 7 *
36 ← 35	162 667.448 6	0.024 0
37 ← 36	167 184.084 8	-0.011 9
38 ← 37	171 700.612 0	-0.004 0
39 ← 38	176 216.973 7	-0.004 9
47 ← 46	212 341.740 8	-0.015 1
48 ← 47	216 856.529 4	0.001 4
49 ← 48	221 371.097 6	-0.006 0
50 ← 49	225 885.496 4	0.017 6
51 ← 50		

	39 ← 38	176 965.004 4	-0.041 0 *				
	47 ← 46	213 278.552 6	-0.003 2				
	48 ← 47	217 818.029 8	0.002 8				
	49 ← 48	222 357.538 1	-0.004 7				
	50 ← 49	226 897.098 5	0.002 5				
$(2\nu_7^2)^{2e}$				$(2\nu_7^2)^{2f}$			
	12 ← 11	54 461.042 1	0.005 3		12 ← 11	54 463.094 2	0.000 8
	13 ← 12	58 998.828 7	0.005 8		13 ← 12	59 001.433 2	-0.007 7
	14 ← 13	63 536.463 3	0.006 5		14 ← 13	63 539.735 0	0.005 0
	15 ← 14	68 073.915 1	-0.011 7		15 ← 14	68 077.961 9	0.005 7
	16 ← 15	72 611.238 2	0.017 0		16 ← 15	72 616.120 2	0.005 1
	18 ← 17	81 685.197 4	-0.039 0 *		18 ← 17	81 692.210 8	-0.002 0
	19 ← 18	86 221.902 2	-0.031 6 *		19 ← 18	86 230.150 2	0.007 5
	20 ← 19	90 758.476 1	0.067 1 *		20 ← 19	90 767.981 9	-0.005 5
	21 ← 20	95 294.654 5	0.004 1		21 ← 20	95 305.744 6	0.002 2
	22 ← 21	99 830.696 6	0.050 2 *		22 ← 21	99 843.397 2	-0.006 1
	23 ← 22	104 366.388 0	0.002 3		23 ← 22	104 380.965 0	-0.000 6
	24 ← 23	108 901.852 8	-0.004 2		24 ← 23	108 918.406 2	-0.018 6
	25 ← 24	113 436.948 2	-0.100 6 *		25 ← 24	113 455.775 1	-0.001 5
	26 ← 25	117 971.953 3	0.003 0		26 ← 25	117 993.012 9	-0.003 6
	36 ← 35	163 302.638 0	-0.030 2		36 ← 35	163 358.305 7	0.013 6
	37 ← 36	167 833.717 5	0.022 2		37 ← 36	167 894.102 9	0.092 0 *
	38 ← 37	172 364.342 8	0.027 1		38 ← 37	172 429.541 6	-0.023 5
	39 ← 38	176 894.499 6	-0.022 2		39 ← 38	176 965.004 4	0.053 9 *
	47 ← 46				47 ← 46	213 241.447 9	0.008 3
	48 ← 47	217 646.769 4	0.014 3		48 ← 47	217 775.117 1	0.004 9
	49 ← 48	222 172.503 5	-0.019 8		49 ← 48	222 308.559 4	-0.013 8
	50 ← 49	226 697.836 4	0.005 2		50 ← 49	226 841.824 4	0.006 0

Tabelle F.4 Zugeordnete *a*-Typ-Rotationsübergänge von $N^{13}CCNO$ im Frequenzbereich zwischen 52 und 179 GHz.

	$J' \leftarrow J''$	ν_{exp} MHz	$\nu_{\text{exp}} - \nu_{\text{calc}}$ MHz	$J' \leftarrow J''$	ν_{exp} MHz	$\nu_{\text{exp}} - \nu_{\text{calc}}$ MHz
Grund						
	12 ← 11	54 979.745 7	-0.000 1			
	13 ← 12	59 561.208 3	0.000 8			
	14 ← 13	64 142.623 7	-0.001 4			
	15 ← 14	68 723.993 7	-0.001 5			
	16 ← 15	73 305.319 2	0.004 7			
	17 ← 16	77 886.583 5	0.003 9			
	19 ← 18	87 048.940 0	0.006 4			
	20 ← 19	91 630.003 8	-0.012 0			
	21 ← 20	96 211.032 7	0.002 4			
	22 ← 21	100 791.980 3	0.006 5			
	23 ← 22	105 372.830 8	-0.012 0			
	24 ← 23	109 953.632 2	-0.001 9			
	25 ← 24	114 534.347 9	0.003 7			
	35 ← 34	160 336.247 6	-0.001 7			
	36 ← 35	164 915.853 8	0.006 7			
	38 ← 37	174 074.684 1	0.007 8			
	39 ← 38	178 653.897 4	-0.003 9			
	46 ← 45	210 704.671 6	0.042 5 *			
	47 ← 46	215 282.714 4	-0.001 5			
	48 ← 47	219 860.643 2	-0.002 8			
	49 ← 48	224 438.421 6	0.005 6			
	50 ← 49	229 016.020 6	-0.002 1			

$(\nu_7^1)^{1e}$				$(\nu_7^1)^{1f}$			
	12 ← 11	55 235.886 7	-0.001 9		12 ← 11	55 338.076 4	0.004 4
	13 ← 12	59 838.671 3	0.002 2		13 ← 12	59 949.350 9	0.009 7
	14 ← 13	64 441.395 1	-0.004 2		14 ← 13	64 560.554 9	0.001 2
	15 ← 14	69 044.059 8	-0.015 5		15 ← 14	69 171.704 9	-0.000 2
	16 ← 15				16 ← 15	73 782.784 1	-0.006 8
	17 ← 16	78 249.247 2	-0.001 7		17 ← 16	78 393.810 7	0.003 7
	18 ← 17	82 851.740 0	0.001 1		18 ← 17	83 004.752 8	0.004 0
	19 ← 18	87 454.158 9	-0.000 4		19 ← 18	87 615.618 8	0.006 6
	20 ← 19	92 056.507 9	0.001 8		20 ← 19	92 226.396 8	0.004 1
	21 ← 20	96 658.783 0	0.007 4		21 ← 20	96 837.085 3	-0.000 7
	22 ← 21	101 260.969 2	0.005 3		22 ← 21	101 447.684 1	-0.003 8
	23 ← 22	105 863.058 3	-0.008 9		23 ← 22	106 058.187 7	-0.006 2
	24 ← 23	110 465.074 7	-0.007 0		24 ← 23	110 668.591 3	-0.008 5
	25 ← 24	115 067.019 3	0.015 8		25 ← 24	115 278.902 9	0.001 7
	35 ← 34				35 ← 34	161 375.223 8	-0.003 7
	36 ← 35	165 680.995 9	0.053 8 *		36 ← 35	165 984.085 8	-0.011 6
	37 ← 36	170 281.452 1	-0.004 4		37 ← 36	170 592.787 0	-0.024 6
	38 ← 37	174 881.830 5	0.001 3		38 ← 37	175 201.390 0	0.024 0
	46 ← 45	211 679.274 8	0.009 4		46 ← 45	212 063.543 5	0.001 0
	47 ← 46	216 278.193 2	-0.003 4		47 ← 46	216 670.473 8	0.004 0
	48 ← 47	220 876.946 7	-0.002 7		48 ← 47	221 277.188 7	-0.006 8
	49 ← 48	225 475.517 1	-0.002 9		49 ← 48	225 883.719 6	0.004 1
$(2\nu_7^0)^{0e}$							
	12 ← 11	55 553.128 6	-0.003 1				
	13 ← 12	60 182.717 0	-0.003 6				
	14 ← 13	64 812.346 7	-0.001 8				
	15 ← 14	69 442.013 9	-0.004 4				
	16 ← 15	74 071.731 6	-0.001 7				
	17 ← 16	78 701.498 9	0.002 6				
	18 ← 17	83 331.314 8	0.004 3				
	19 ← 18	87 961.168 6	-0.010 3				
	20 ← 19	92 591.020 7	-0.083 8 *				
	21 ← 20	97 221.093 3	0.003 1				
	22 ← 21	101 851.150 6	0.011 8				
	23 ← 22	106 481.243 7	-0.009 6				
	24 ← 23	111 111.434 9	-0.001 5				
	25 ← 24	115 741.698 0	0.007 3				
	35 ← 34	162 048.619 9	-0.003 0				
	36 ← 35	166 679.790 0	0.003 8				
	37 ← 36	171 311.050 4	0.013 6				
	38 ← 37	175 942.378 9	0.005 1				
	46 ← 45	212 995.918 7	-0.000 3				
	47 ← 46	217 627.911 0	-0.000 8				
	48 ← 47	222 259.942 8	-0.010 1				
	49 ← 48	226 892.042 8	0.007 8				
$(2\nu_7^2)^{2e}$				$(2\nu_7^2)^{2f}$			
	12 ← 11	55 571.801 5	-0.000 9		12 ← 11	55 573.941 9	-0.000 1
	13 ← 12	60 202.125 3	0.000 4		13 ← 12	60 204.850 4	0.001 6
	14 ← 13	64 832.288 6	-0.000 1		14 ← 13	64 835.694 5	0.000 1
	15 ← 14	69 462.278 0	-0.003 5		15 ← 14	69 466.471 9	-0.002 3
	16 ← 15	74 092.091 3	0.000 3		16 ← 15	74 097.188 0	0.004 5
	17 ← 16	78 721.702 7	-0.002 4		17 ← 16	78 727.810 1	-0.007 4
	18 ← 17	83 351.116 8	0.005 4		18 ← 17	83 358.375 4	0.003 7
	19 ← 18	87 980.294 8	-0.003 2		19 ← 18	87 988.846 6	0.005 3
	20 ← 19				20 ← 19	92 619.223 2	0.001 5
	21 ← 20	97 237.972 4	0.009 2		21 ← 20	97 249.508 9	0.000 6
	22 ← 21	101 866.412 1	-0.005 7		22 ← 21	101 879.692 9	-0.003 4
	23 ← 22	106 494.601 0	-0.003 4		23 ← 22	106 509.784 3	0.003 2

24 ← 23	111 122.507 4	-0.003 9	24 ← 23	111 139.753 1	-0.005 1
25 ← 24	115 750.134 9	0.008 3	25 ← 24	115 769.624 9	0.002 1
35 ← 34	162 007.787 3	-0.003 1	35 ← 34	162 061.064 8	-0.006 0
36 ← 35	166 631.489 0	0.009 8	36 ← 35	166 689.375 7	-0.019 4
37 ← 36	171 254.779 7	0.026 8	37 ← 36	171 317.550 7	-0.001 2
38 ← 37	175 877.586 8	-0.016 6	38 ← 37	175 945.530 8	-0.006 0
46 ← 45	212 844.387 0	0.005 9	46 ← 45	212 962.684 8	-0.003 5
47 ← 46	217 463.138 5	-0.012 3	47 ← 46	217 588.927 9	0.003 5
48 ← 47			48 ← 47	222 214.942 5	-0.001 5
49 ← 48	226 699.276 0	0.003 9	49 ← 48	226 840.747 2	0.004 4

Tabelle F.5 Zugeordnete a-Typ-Rotationsübergänge von NCC^{15}NO im Frequenzbereich zwischen 52 und 179 GHz.

	$J' \leftarrow J''$	$\frac{\nu_{\mathrm{exp}}}{\mathrm{MHz}}$	$\frac{\nu_{\mathrm{exp}} - \nu_{\mathrm{calc}}}{\mathrm{MHz}}$	$J' \leftarrow J''$	$\frac{\nu_{\mathrm{exp}}}{\mathrm{MHz}}$	$\frac{\nu_{\mathrm{exp}} - \nu_{\mathrm{calc}}}{\mathrm{MHz}}$
Grund						
	12 ← 11	55 148.550 8	-0.004 5			
	13 ← 12	59 744.091 3	0.007 6			
	14 ← 13	64 339.564 4	-0.003 6			
	15 ← 14	68 935.002 5	-0.002 0			
	16 ← 15	73 530.394 8	0.004 7			
	17 ← 16	78 125.721 4	0.000 2			
	18 ← 17	82 720.995 0	0.000 4			
	19 ← 18	87 316.214 9	0.008 2			
	20 ← 19	91 911.358 2	0.003 9			
	21 ← 20	96 506.434 9	0.001 0			
	22 ← 21	101 101.444 7	0.002 5			
	23 ← 22	105 696.364 8	-0.011 1			
	24 ← 23	110 291.225 0	-0.006 5			
	25 ← 24	114 886.004 5	-0.001 2			
	35 ← 34	160 828.513 5	-0.020 1			
	36 ← 35	165 422.208 3	0.016 6			
	37 ← 36	170 015.741 4	0.013 0			
	38 ← 37	174 609.132 1	-0.008 3			
	46 ← 45	211 351.577 7	0.022 9			
	47 ← 46	215 943.687 6	-0.009 9			
	48 ← 47	220 535.643 7	-0.039 2			
	49 ← 48	225 127.546 7	0.038 8			
	50 ← 49	229 719.158 3	-0.010 8			
$(\nu_7^1)^{1e}$				$(\nu_7^1)^{1f}$		
	12 ← 11	55 405.844 2	-0.003 2	12 ← 11	55 508.577 7	0.002 6
	13 ← 12	60 022.784 0	-0.006 3	13 ← 12	60 134.057 1	0.005 1
	14 ← 13	64 639.668 7	-0.014 0	14 ← 13	64 759.470 6	-0.001 2
	15 ← 14	69 256.515 9	-0.004 7	15 ← 14	69 384.832 0	0.001 8
	16 ← 15	73 873.333 4	0.033 3	16 ← 15	74 010.134 0	0.011 1
	17 ← 16	78 490.016 0	-0.001 5	17 ← 16	78 635.344 7	-0.000 7
	18 ← 17	83 106.665 5	-0.003 2	18 ← 17	83 260.501 4	0.008 0
	19 ← 18	87 723.249 2	-0.000 8	19 ← 18	87 885.566 4	0.003 8
	20 ← 19	92 339.751 1	-0.006 4	20 ← 19	92 510.553 3	0.004 8
	21 ← 20	96 956.184 1	-0.003 2	21 ← 20	97 135.453 4	0.006 4
	22 ← 21	101 572.538 0	0.002 4	22 ← 21	101 760.248 7	-0.004 8
	23 ← 22	106 188.794 3	-0.004 3	23 ← 22	106 384.951 7	-0.012 1
	24 ← 23	110 804.967 8	-0.004 6	24 ← 23	111 009.566 0	-0.007 5
	25 ← 24	115 421.052 2	-0.000 9	25 ← 24	115 634.077 8	-0.000 5
	35 ← 34	161 575.918 7	0.014 4	35 ← 34	161 872.384 1	-0.024 9
	36 ← 35	166 190.728 9	0.018 5	36 ← 35	166 495.473 7	-0.002 3

	37 ← 36	170 805.384 1	0.006 2		37 ← 36	171 118.359 0	-0.027 6
	38 ← 37	175 419.912 6	0.009 5		38 ← 37	175 741.158 6	0.022 0
	46 ← 45	212 330.544 1	0.008 2		46 ← 45	212 716.834 9	-0.015 2
	47 ← 46	216 943.618 8	0.005 3		47 ← 46	217 337.964 8	-0.000 8
	48 ← 47	221 556.635 6	0.123 7 *		48 ← 47	221 958.904 9	0.026 3
	49 ← 48	226 169.212 4	-0.015 0		49 ← 48	226 579.577 2	-0.007 9
$(2\nu_7^0)^{0e}$							
	12 ← 11	55 724.760 2	-0.000 5				
	13 ← 12	60 368.640 9	-0.014 5				
	14 ← 13	65 012.578 5	-0.011 3				
	15 ← 14	69 656.557 6	-0.009 6				
	16 ← 15	74 300.589 8	-0.000 6				
	17 ← 16	78 944.670 9	0.008 1				
	18 ← 17	83 588.840 0	0.052 7 *				
	19 ← 18	88 232.967 7	0.000 7				
	20 ← 19	92 877.211 7	0.006 7				
	21 ← 20	97 521.506 6	0.002 4				
	22 ← 21	102 165.867 7	0.000 0				
	23 ← 22	106 810.305 2	0.007 1				
	24 ← 23	111 454.792 3	-0.006 1				
	25 ← 24	116 099.380 2	0.009 0				
	35 ← 34	162 549.591 6	0.023 3				
	36 ← 35	167 195.083 1	0.016 1				
	37 ← 36	171 840.644 4	-0.010 3				
	38 ← 37	176 486.326 0	-0.004 7				
	46 ← 45	213 654.627 5	-0.034 8				
	47 ← 46	218 301.018 1	0.004 3				
	48 ← 47	222 947.450 5	0.034 2				
	49 ← 48	227 593.851 9	-0.010 6				
$(2\nu_7^2)^{2e}$				$(2\nu_7^2)^{2f}$			
	12 ← 11	55 743.413 5	0.005 3		12 ← 11	55 745.573 6	0.000 7
	13 ← 12	60 388.023 1	-0.002 1		13 ← 12	60 390.784 1	0.003 1
	14 ← 13	65 032.479 3	-0.002 8		14 ← 13	65 035.924 8	-0.002 8
	15 ← 14	69 676.760 5	-0.005 9		15 ← 14	69 680.991 4	-0.016 6
	16 ← 15				16 ← 15	74 326.003 3	-0.014 2
	17 ← 16	78 964.772 7	0.004 6		17 ← 16	78 970.956 6	0.005 2
	18 ← 17	83 608.475 1	0.014 2		18 ← 17	83 615.803 8	-0.001 3
	19 ← 18	88 251.920 4	-0.011 6		19 ← 18	88 260.576 7	0.003 0
	20 ← 19	92 895.176 2	0.007 0		20 ← 19	92 905.252 4	-0.000 3
	21 ← 20	97 538.157 1	-0.003 2		21 ← 20	97 549.842 7	0.005 3
	22 ← 21	102 180.891 1	-0.002 1		22 ← 21	102 194.319 8	-0.003 2
	23 ← 22	106 823.353 3	-0.002 7		23 ← 22	106 838.703 9	-0.001 1
	24 ← 23	111 465.539 0	0.002 4		24 ← 23	111 482.981 3	0.002 7
	25 ← 24	116 107.437 6	0.014 3		25 ← 24	116 127.145 5	0.006 3
	35 ← 34	162 507.661 9	0.009 4		35 ← 34		
	36 ← 35	167 145.571 5	-0.009 9		36 ← 35	167 204.078 8	-0.047 1
	37 ← 36	171 783.202 9	0.111 1 *		37 ← 36		
	38 ← 37	176 420.173 4	-0.002 2		38 ← 37	176 488.860 4	0.017 6
	46 ← 45	213 500.676 1	-0.011 0		46 ← 45	213 620.268 9	0.006 8
	47 ← 46	218 133.658 1	0.002 7		47 ← 46	218 260.882 6	0.104 8 *
	48 ← 47	222 766.142 7	-0.004 3		48 ← 47	222 901.072 3	-0.003 9
	49 ← 48	227 398.169 9	0.009 2		49 ← 48	227 541.152 9	0.000 1

Tabelle F.6 Zugeordnete a-Typ-Rotationsübergänge von NCCN^{18}O im Frequenzbereich zwischen 52 und 179 GHz.

	$J' \leftarrow J''$	$\frac{\nu_{\mathrm{exp}}}{\mathrm{MHz}}$	$\frac{\nu_{\mathrm{exp}} - \nu_{\mathrm{calc}}}{\mathrm{MHz}}$	$J' \leftarrow J''$	$\frac{\nu_{\mathrm{exp}}}{\mathrm{MHz}}$	$\frac{\nu_{\mathrm{exp}} - \nu_{\mathrm{calc}}}{\mathrm{MHz}}$
Grund						
	12 ← 11	52 927.435 6	0.007 4			
	13 ← 12	57 337.965 3	0.087 1 *			
	14 ← 13	61 748.287 7	-0.000 0			
	15 ← 14	66 158.646 8	-0.006 8			
	16 ← 15	70 568.965 8	-0.006 8			
	17 ← 16	74 979.233 2	-0.008 7 *			
	19 ← 18	83 799.683 0	0.064 7 *			
	20 ← 19	88 209.719 6	0.000 2			
	21 ← 20	92 619.763 7	0.005 6			
	22 ← 21	97 029.730 6	-0.001 0			
	23 ← 22	101 439.654 2	0.017 6			
	24 ← 23	105 849.461 5	-0.008 5			
	25 ← 24	110 259.224 4	-0.004 5			
	26 ← 25	114 668.903 3	-0.006 8			
	37 ← 36	163 169.425 6	0.027 0			
	39 ← 38	171 986.294 7	-0.006 8			
	40 ← 39	176 394.581 4	0.007 6			
	49 ← 48	216 063.112 5	-0.001 1			
	50 ← 49	220 469.984 4	-0.033 2			
	51 ← 50	224 876.811 0	0.042 5			
	52 ← 51	229 283.351 6	-0.011 6			
$(\nu_7^1)^{1e}$				$(\nu_7^1)^{1f}$		
	13 ← 12	57 604.490 4	0.016 3	13 ← 12	57 708.123 4	0.005 7
	14 ← 13	62 035.186 5	-0.176 0 *	14 ← 13	62 146.963 9	0.013 1
	15 ← 14	66 466.436 6	0.235 7 *	15 ← 14	66 585.722 8	-0.004 9
	16 ← 15	70 896.988 8	0.003 0	16 ← 15	71 024.347 2	-0.097 2 *
	17 ← 16	75 327.709 2	-0.004 4	17 ← 16	75 463.070 6	-0.026 4
	19 ← 18	84 188.988 5	0.004 6	19 ← 18	84 340.191 9	-0.001 9
	20 ← 19	88 619.514 2	-0.005 1	20 ← 19	88 778.640 1	0.010 2
	21 ← 20	93 049.984 1	0.000 7	21 ← 20	93 217.005 5	0.019 5
	22 ← 21	97 480.371 9	-0.000 8	22 ← 21	97 655.262 4	0.004 4
	23 ← 22	101 910.683 0	-0.000 8	23 ← 22	102 093.442 6	0.000 6
	24 ← 23	106 340.908 3	-0.004 7	24 ← 23	106 531.523 0	-0.010 9
	25 ← 24	110 771.051 3	-0.005 6	25 ← 24	110 969.521 8	-0.008 0
	26 ← 25	115 201.167 1	0.055 2 *	26 ← 25	115 407.419 8	-0.006 0
	36 ← 35	159 496.024 0	0.019 4	36 ← 35		
	37 ← 36	163 924.846 7	-0.004 9	37 ← 36	164 216.574 1	0.015 2
	38 ← 37	168 353.519 5	-0.048 4	38 ← 37	168 652.973 2	0.024 4
	39 ← 38	172 782.187 5	0.037 2	39 ← 38	173 089.189 6	0.001 8
	48 ← 47	212 632.799 6	0.003 9	48 ← 47	213 007.903 4	-0.009 4
	49 ← 48	217 059.856 3	0.006 1	49 ← 48	217 442.427 5	-0.003 8
	50 ← 49	221 486.726 7	-0.006 7	50 ← 49	221 876.765 7	0.008 9
	51 ← 50	225 913.440 3	-0.001 7	51 ← 50		

Tabelle F.7 Extrapolierte Übergangswellenzahlen von NCCNO.

	$J'_{k'_a k'_c} \leftarrow J''_{k''_a k''_c}$	$\frac{\tilde{\nu}_{\mathrm{calc}}}{\mathrm{cm}^{-1}}$	$\frac{\tilde{\nu}_{\mathrm{calc}} - \tilde{\nu}_{\mathrm{srb}}}{\mathrm{cm}^{-1}}$	$J'_{k'_a k'_c} \leftarrow J''_{k''_a k''_c}$	$\frac{\tilde{\nu}_{\mathrm{calc}}}{\mathrm{cm}^{-1}}$	$\frac{\tilde{\nu}_{\mathrm{calc}} - \tilde{\nu}_{\mathrm{srb}}}{\mathrm{cm}^{-1}}$
$v_7^{\mathrm{b}} = 0 \leftarrow 0$						
	$1_{11} \leftarrow 2_{02}$	80.139	-0.112			
	$2_{12} \leftarrow 3_{03}$	79.986	-0.112			

$3_{13} \leftarrow 4_{04}$	79.834	-0.112			
$4_{14} \leftarrow 5_{05}$	79.683	-0.112			
$5_{15} \leftarrow 6_{06}$	79.532	-0.112			
$6_{16} \leftarrow 7_{07}$	79.383	-0.111			
$7_{17} \leftarrow 8_{08}$	79.233	-0.111			
$8_{18} \leftarrow 9_{09}$	79.085	-0.111			
$1_{10} \leftarrow 1_{01}$	80.448	-0.112			
$2_{11} \leftarrow 2_{02}$	80.450	-0.112			
$3_{12} \leftarrow 3_{03}$	80.453	-0.112			
$4_{13} \leftarrow 4_{04}$	80.457	-0.112			
$5_{14} \leftarrow 5_{05}$	80.462	-0.112			
$6_{15} \leftarrow 6_{06}$	80.468	-0.112			
$7_{16} \leftarrow 7_{07}$	80.475	-0.111			
$8_{17} \leftarrow 8_{08}$	80.483	-0.111			
$9_{18} \leftarrow 9_{09}$	80.492	-0.111			
$1_{11} \leftarrow 0_{00}$	80.602	-0.112			
$2_{12} \leftarrow 1_{01}$	80.757	-0.112			
$3_{13} \leftarrow 2_{02}$	80.913	-0.112			
$4_{14} \leftarrow 3_{03}$	81.071	-0.112			
$5_{15} \leftarrow 4_{04}$	81.228	-0.112			
$6_{16} \leftarrow 5_{05}$	81.387	-0.112			
$7_{17} \leftarrow 6_{06}$	81.546	-0.112			
$8_{18} \leftarrow 7_{07}$	81.706	-0.111			
$9_{19} \leftarrow 8_{08}$	81.867	-0.111			
$2_{21} \leftarrow 3_{13}$	83.384	0.102	$2_{20} \leftarrow 3_{12}$	83.382	0.102
$3_{22} \leftarrow 4_{14}$	83.232	0.102	$3_{21} \leftarrow 4_{13}$	83.229	0.102
$4_{23} \leftarrow 5_{15}$	83.081	0.102	$4_{22} \leftarrow 5_{14}$	83.077	0.102
$5_{24} \leftarrow 6_{16}$	82.931	0.102	$5_{23} \leftarrow 6_{15}$	82.925	0.102
$6_{25} \leftarrow 7_{17}$	82.782	0.102	$6_{24} \leftarrow 7_{16}$	82.774	0.102
$7_{26} \leftarrow 8_{18}$	82.633	0.102	$7_{25} \leftarrow 8_{17}$	82.623	0.102
$8_{27} \leftarrow 9_{19}$	82.486	0.102	$8_{26} \leftarrow 9_{18}$	82.473	0.103
$2_{20} \leftarrow 2_{12}$	83.849	0.102	$2_{21} \leftarrow 2_{11}$	83.848	0.102
$3_{21} \leftarrow 3_{13}$	83.852	0.102	$3_{22} \leftarrow 3_{12}$	83.850	0.102
$4_{22} \leftarrow 4_{14}$	83.855	0.102	$4_{23} \leftarrow 4_{13}$	83.852	0.102
$5_{23} \leftarrow 5_{15}$	83.860	0.102	$5_{24} \leftarrow 5_{14}$	83.856	0.102
$6_{24} \leftarrow 6_{16}$	83.866	0.102	$6_{25} \leftarrow 6_{15}$	83.860	0.102
$7_{25} \leftarrow 7_{17}$	83.873	0.102	$7_{26} \leftarrow 7_{16}$	83.864	0.102
$8_{26} \leftarrow 8_{18}$	83.880	0.102	$8_{27} \leftarrow 8_{17}$	83.870	0.103
$9_{27} \leftarrow 9_{19}$	83.889	0.103	$9_{28} \leftarrow 9_{18}$	83.876	0.103
$2_{21} \leftarrow 1_{11}$	84.159	0.102	$2_{20} \leftarrow 1_{10}$	84.158	0.102
$3_{22} \leftarrow 2_{12}$	84.316	0.102	$3_{21} \leftarrow 2_{11}$	84.315	0.102
$4_{23} \leftarrow 3_{13}$	84.475	0.102	$4_{22} \leftarrow 3_{12}$	84.473	0.102
$5_{24} \leftarrow 4_{14}$	84.635	0.102	$5_{23} \leftarrow 4_{13}$	84.632	0.102
$6_{25} \leftarrow 5_{15}$	84.795	0.102	$6_{24} \leftarrow 5_{14}$	84.791	0.102
$7_{26} \leftarrow 6_{16}$	84.957	0.102	$7_{25} \leftarrow 6_{15}$	84.951	0.102
$8_{27} \leftarrow 7_{17}$	85.119	0.102	$8_{26} \leftarrow 7_{16}$	85.111	0.103
$9_{28} \leftarrow 8_{18}$	85.283	0.103	$9_{27} \leftarrow 8_{17}$	85.272	0.103
$3_{31} \leftarrow 4_{23}$	86.186	0.168	$3_{30} \leftarrow 4_{22}$	86.186	0.168
$4_{32} \leftarrow 5_{24}$	86.033	0.168	$4_{31} \leftarrow 5_{23}$	86.033	0.168
$5_{33} \leftarrow 6_{25}$	85.881	0.168	$5_{32} \leftarrow 6_{24}$	85.881	0.168
$6_{34} \leftarrow 7_{26}$	85.730	0.168	$6_{33} \leftarrow 7_{25}$	85.730	0.168
$7_{35} \leftarrow 8_{27}$	85.579	0.168	$7_{34} \leftarrow 8_{26}$	85.579	0.168
$8_{36} \leftarrow 9_{28}$	85.429	0.168	$8_{35} \leftarrow 9_{27}$	85.429	0.168
$3_{30} \leftarrow 3_{22}$	86.809	0.168	$3_{31} \leftarrow 3_{21}$	86.809	0.168
$4_{31} \leftarrow 4_{23}$	86.812	0.168	$4_{32} \leftarrow 4_{22}$	86.812	0.168
$5_{32} \leftarrow 5_{24}$	86.816	0.168	$5_{33} \leftarrow 5_{23}$	86.816	0.168
$6_{33} \leftarrow 6_{25}$	86.820	0.168	$6_{34} \leftarrow 6_{24}$	86.820	0.168
$7_{34} \leftarrow 7_{26}$	86.826	0.168	$7_{35} \leftarrow 7_{25}$	86.826	0.168

	$8_{35} \leftarrow 8_{27}$	86.832	0.168	$8_{36} \leftarrow 8_{26}$	86.832	0.168
	$9_{36} \leftarrow 9_{28}$	86.839	0.168	$9_{37} \leftarrow 9_{27}$	86.839	0.168
	$3_{31} \leftarrow 2_{21}$	87.276	0.168	$3_{30} \leftarrow 2_{20}$	87.276	0.168
	$4_{32} \leftarrow 3_{22}$	87.435	0.168	$4_{31} \leftarrow 3_{21}$	87.435	0.168
	$5_{33} \leftarrow 4_{23}$	87.595	0.168	$5_{32} \leftarrow 4_{22}$	87.595	0.168
	$6_{34} \leftarrow 5_{24}$	87.755	0.168	$6_{33} \leftarrow 5_{23}$	87.755	0.168
	$7_{35} \leftarrow 6_{25}$	87.917	0.168	$7_{34} \leftarrow 6_{24}$	87.917	0.168
	$8_{36} \leftarrow 7_{26}$	88.079	0.168	$8_{35} \leftarrow 7_{25}$	88.079	0.168
	$9_{37} \leftarrow 8_{27}$	88.241	0.168	$9_{36} \leftarrow 8_{26}$	88.241	0.168
	$4_{41} \leftarrow 5_{33}$	88.650	0.129	$4_{40} \leftarrow 5_{32}$	88.650	0.129
	$5_{42} \leftarrow 6_{34}$	88.497	0.129	$5_{41} \leftarrow 6_{33}$	88.497	0.129
	$6_{43} \leftarrow 7_{35}$	88.344	0.129	$6_{42} \leftarrow 7_{34}$	88.344	0.129
	$7_{44} \leftarrow 8_{36}$	88.193	0.129	$7_{43} \leftarrow 8_{35}$	88.193	0.129
	$8_{45} \leftarrow 9_{37}$	88.042	0.129	$8_{44} \leftarrow 9_{36}$	88.042	0.129
	$4_{40} \leftarrow 4_{32}$	89.433	0.129	$4_{41} \leftarrow 4_{31}$	89.433	0.129
	$5_{41} \leftarrow 5_{33}$	89.436	0.129	$5_{42} \leftarrow 5_{32}$	89.436	0.129
	$6_{42} \leftarrow 6_{34}$	89.441	0.129	$6_{43} \leftarrow 6_{33}$	89.441	0.129
	$7_{43} \leftarrow 7_{35}$	89.446	0.129	$7_{44} \leftarrow 7_{34}$	89.446	0.129
	$8_{44} \leftarrow 8_{36}$	89.452	0.129	$8_{45} \leftarrow 8_{35}$	89.452	0.129
	$9_{45} \leftarrow 9_{37}$	89.458	0.129	$9_{46} \leftarrow 9_{36}$	89.458	0.129
	$4_{41} \leftarrow 3_{31}$	90.059	0.129	$4_{40} \leftarrow 3_{30}$	90.059	0.129
	$5_{42} \leftarrow 4_{32}$	90.219	0.129	$5_{41} \leftarrow 4_{31}$	90.219	0.129
	$6_{43} \leftarrow 5_{33}$	90.380	0.129	$6_{42} \leftarrow 5_{32}$	90.380	0.129
	$7_{44} \leftarrow 6_{34}$	90.542	0.129	$7_{43} \leftarrow 6_{33}$	90.542	0.129
	$8_{45} \leftarrow 7_{35}$	90.704	0.129	$8_{44} \leftarrow 7_{34}$	90.704	0.129
	$9_{46} \leftarrow 8_{36}$	90.868	0.129	$9_{45} \leftarrow 8_{35}$	90.868	0.129
	$5_{51} \leftarrow 6_{43}$	90.845	0.015	$5_{50} \leftarrow 6_{42}$	90.845	0.015
	$6_{52} \leftarrow 7_{44}$	90.692	0.015	$6_{51} \leftarrow 7_{43}$	90.692	0.015
	$7_{53} \leftarrow 8_{45}$	90.540	0.015	$7_{52} \leftarrow 8_{44}$	90.540	0.015
	$8_{54} \leftarrow 9_{46}$	90.388	0.015	$8_{53} \leftarrow 9_{45}$	90.388	0.015
	$5_{50} \leftarrow 5_{42}$	91.789	0.015	$5_{51} \leftarrow 5_{41}$	91.789	0.015
	$6_{51} \leftarrow 6_{43}$	91.793	0.015	$6_{52} \leftarrow 6_{42}$	91.793	0.015
	$7_{52} \leftarrow 7_{44}$	91.798	0.015	$7_{53} \leftarrow 7_{43}$	91.798	0.015
	$8_{53} \leftarrow 8_{45}$	91.804	0.015	$8_{54} \leftarrow 8_{44}$	91.804	0.015
	$9_{54} \leftarrow 9_{46}$	91.810	0.015	$9_{55} \leftarrow 9_{45}$	91.810	0.015
	$5_{51} \leftarrow 4_{41}$	92.576	0.015	$5_{50} \leftarrow 4_{40}$	92.576	0.015
	$6_{52} \leftarrow 5_{42}$	92.737	0.015	$6_{51} \leftarrow 5_{41}$	92.737	0.015
	$7_{53} \leftarrow 6_{43}$	92.900	0.015	$7_{52} \leftarrow 6_{42}$	92.900	0.015
	$8_{54} \leftarrow 7_{44}$	93.063	0.015	$8_{53} \leftarrow 7_{43}$	93.063	0.015
	$9_{55} \leftarrow 8_{45}$	93.226	0.015	$9_{54} \leftarrow 8_{44}$	93.226	0.015
$v_7^{\mathrm{b}} = 1 \leftarrow 0$						
	$0_{00} \leftarrow 1_{11}$	85.517	0.132			
	$1_{01} \leftarrow 2_{12}$	85.363	0.132			
	$2_{02} \leftarrow 3_{13}$	85.210	0.132			
	$3_{03} \leftarrow 4_{14}$	85.057	0.132			
	$4_{04} \leftarrow 5_{15}$	84.906	0.132			
	$5_{05} \leftarrow 6_{16}$	84.756	0.132			
	$6_{06} \leftarrow 7_{17}$	84.606	0.132			
	$7_{07} \leftarrow 8_{18}$	84.457	0.132			
	$8_{08} \leftarrow 9_{19}$	84.310	0.132			
	$1_{01} \leftarrow 1_{10}$	85.672	0.132			
	$2_{02} \leftarrow 2_{11}$	85.673	0.132			
	$3_{03} \leftarrow 3_{12}$	85.675	0.132			
	$4_{04} \leftarrow 4_{13}$	85.678	0.132			
	$5_{05} \leftarrow 5_{14}$	85.681	0.132			
	$6_{06} \leftarrow 6_{15}$	85.684	0.132			
	$7_{07} \leftarrow 7_{16}$	85.688	0.132			
	$8_{08} \leftarrow 8_{17}$	85.693	0.132			

	$9_{09} \leftarrow 9_{18}$	85.699	0.132			
	$2_{02} \leftarrow 1_{11}$	85.984	0.132			
	$3_{03} \leftarrow 2_{12}$	86.142	0.132			
	$4_{04} \leftarrow 3_{13}$	86.300	0.132			
	$5_{05} \leftarrow 4_{14}$	86.459	0.132			
	$6_{06} \leftarrow 5_{15}$	86.620	0.132			
	$7_{07} \leftarrow 6_{16}$	86.781	0.132			
	$8_{08} \leftarrow 7_{17}$	86.943	0.132			
	$9_{09} \leftarrow 8_{18}$	87.106	0.131			
$v_7^{\mathrm{b}} = 1 \leftarrow 1$						
	$1_{11} \leftarrow 2_{02}$	87.527	-0.099			
	$2_{12} \leftarrow 3_{03}$	87.372	-0.099			
	$3_{13} \leftarrow 4_{04}$	87.217	-0.099			
	$4_{14} \leftarrow 5_{05}$	87.063	-0.099			
	$5_{15} \leftarrow 6_{06}$	86.910	-0.099			
	$6_{16} \leftarrow 7_{07}$	86.757	-0.099			
	$7_{17} \leftarrow 8_{08}$	86.604	-0.099			
	$8_{18} \leftarrow 9_{09}$	86.452	-0.099			
	$1_{10} \leftarrow 1_{01}$	87.839	-0.099			
	$2_{11} \leftarrow 2_{02}$	87.841	-0.099			
	$3_{12} \leftarrow 3_{03}$	87.844	-0.099			
	$4_{13} \leftarrow 4_{04}$	87.848	-0.099			
	$5_{14} \leftarrow 5_{05}$	87.853	-0.099			
	$6_{15} \leftarrow 6_{06}$	87.859	-0.099			
	$7_{16} \leftarrow 7_{07}$	87.866	-0.099			
	$8_{17} \leftarrow 8_{08}$	87.874	-0.099			
	$9_{18} \leftarrow 9_{09}$	87.883	-0.099			
	$1_{11} \leftarrow 0_{00}$	87.994	-0.099			
	$2_{12} \leftarrow 1_{01}$	88.151	-0.099			
	$3_{13} \leftarrow 2_{02}$	88.308	-0.099			
	$4_{14} \leftarrow 3_{03}$	88.465	-0.099			
	$5_{15} \leftarrow 4_{04}$	88.623	-0.099			
	$6_{16} \leftarrow 5_{05}$	88.782	-0.099			
	$7_{17} \leftarrow 6_{06}$	88.941	-0.099			
	$8_{18} \leftarrow 7_{07}$	89.100	-0.099			
	$9_{19} \leftarrow 8_{08}$	89.260	-0.099			
	$2_{21} \leftarrow 3_{13}$	89.464	-0.304	$2_{20} \leftarrow 3_{12}$	89.461	-0.304
	$3_{22} \leftarrow 4_{14}$	89.310	-0.304	$3_{21} \leftarrow 4_{13}$	89.305	-0.304
	$4_{23} \leftarrow 5_{15}$	89.158	-0.304	$4_{22} \leftarrow 5_{14}$	89.150	-0.304
	$5_{24} \leftarrow 6_{16}$	89.007	-0.304	$5_{23} \leftarrow 6_{15}$	88.996	-0.304
	$6_{25} \leftarrow 7_{17}$	88.856	-0.304	$6_{24} \leftarrow 7_{16}$	88.841	-0.304
	$7_{26} \leftarrow 8_{18}$	88.707	-0.304	$7_{25} \leftarrow 8_{17}$	88.688	-0.304
	$8_{27} \leftarrow 9_{19}$	88.558	-0.304	$8_{26} \leftarrow 9_{18}$	88.534	-0.304
	$2_{20} \leftarrow 2_{12}$	89.932	-0.304	$2_{21} \leftarrow 2_{11}$	89.931	-0.304
	$3_{21} \leftarrow 3_{13}$	89.935	-0.304	$3_{22} \leftarrow 3_{12}$	89.932	-0.304
	$4_{22} \leftarrow 4_{14}$	89.939	-0.304	$4_{23} \leftarrow 4_{13}$	89.934	-0.304
	$5_{23} \leftarrow 5_{15}$	89.944	-0.304	$5_{24} \leftarrow 5_{14}$	89.936	-0.304
	$6_{24} \leftarrow 6_{16}$	89.950	-0.304	$6_{25} \leftarrow 6_{15}$	89.939	-0.304
	$7_{25} \leftarrow 7_{17}$	89.957	-0.304	$7_{26} \leftarrow 7_{16}$	89.942	-0.304
	$8_{26} \leftarrow 8_{18}$	89.965	-0.304	$8_{27} \leftarrow 8_{17}$	89.945	-0.304
	$9_{27} \leftarrow 9_{19}$	89.974	-0.304	$9_{28} \leftarrow 9_{18}$	89.949	-0.304
	$2_{21} \leftarrow 1_{11}$	90.245	-0.304	$2_{20} \leftarrow 1_{10}$	90.244	-0.304
	$3_{22} \leftarrow 2_{12}$	90.404	-0.304	$3_{21} \leftarrow 2_{11}$	90.403	-0.304
	$4_{23} \leftarrow 3_{13}$	90.564	-0.304	$4_{22} \leftarrow 3_{12}$	90.561	-0.304
	$5_{24} \leftarrow 4_{14}$	90.725	-0.304	$5_{23} \leftarrow 4_{13}$	90.720	-0.304
	$6_{25} \leftarrow 5_{15}$	90.887	-0.304	$6_{24} \leftarrow 5_{14}$	90.879	-0.304
	$7_{26} \leftarrow 6_{16}$	91.050	-0.304	$7_{25} \leftarrow 6_{15}$	91.039	-0.304
	$8_{27} \leftarrow 7_{17}$	91.214	-0.304	$8_{26} \leftarrow 7_{16}$	91.200	-0.304

	$9_{28} \leftarrow 8_{18}$	91.379	-0.304	$9_{27} \leftarrow 8_{17}$	91.360	-0.304

Tabelle F.8 Extrapolierte Übergangsfrequenzen von NCCNO.

	$J'_{k_a k'_c} \leftarrow J''_{k_a k''_c}$	ν_{calc} MHz	$\nu_{\mathrm{calc}} - \nu_{\mathrm{srb}}$ MHz	$J'_{k_a k'_c} \leftarrow J''_{k_a k''_c}$	ν_{calc} MHz	$\nu_{\mathrm{calc}} - \nu_{\mathrm{srb}}$ MHz
$v_7^{\mathrm{b}} = 0$						
	$1_{01} \leftarrow 0_{00}$	4 621.996	-0.389			
	$2_{02} \leftarrow 1_{01}$	9 243.988	-0.780			
	$3_{03} \leftarrow 2_{02}$	13 865.974	-1.177			
	$4_{04} \leftarrow 3_{03}$	18 487.949	-1.581			
	$5_{05} \leftarrow 4_{04}$	23 109.910	-1.995			
	$6_{06} \leftarrow 5_{05}$	27 731.854	-2.423			
	$7_{07} \leftarrow 6_{06}$	32 353.778	-2.865			
	$8_{08} \leftarrow 7_{07}$	36 975.677	-3.326			
	$9_{09} \leftarrow 8_{08}$	41 597.549	-3.807			
	$2_{12} \leftarrow 1_{11}$	9 287.022	0.181	$2_{11} \leftarrow 1_{10}$	9 304.363	0.101
	$3_{13} \leftarrow 2_{12}$	13 930.523	0.264	$3_{12} \leftarrow 2_{11}$	13 956.533	0.144
	$4_{14} \leftarrow 3_{13}$	18 574.012	0.340	$4_{13} \leftarrow 3_{12}$	18 608.690	0.180
	$5_{15} \leftarrow 4_{14}$	23 217.485	0.405	$5_{14} \leftarrow 4_{13}$	23 260.829	0.205
	$6_{16} \leftarrow 5_{15}$	27 860.939	0.457	$6_{15} \leftarrow 5_{14}$	27 912.946	0.217
	$7_{17} \leftarrow 6_{16}$	32 504.369	0.494	$7_{16} \leftarrow 6_{15}$	32 565.036	0.214
	$8_{18} \leftarrow 7_{17}$	37 147.772	0.511	$8_{17} \leftarrow 7_{16}$	37 217.096	0.191
	$9_{19} \leftarrow 8_{18}$	41 791.143	0.508	$9_{18} \leftarrow 8_{17}$	41 869.119	0.148
	$3_{22} \leftarrow 2_{21}$	14 015.947	0.717	$3_{21} \leftarrow 2_{20}$	14 015.977	0.717
	$4_{23} \leftarrow 3_{22}$	18 687.871	0.943	$4_{22} \leftarrow 3_{21}$	18 687.947	0.943
	$5_{24} \leftarrow 4_{23}$	23 359.746	1.158	$5_{23} \leftarrow 4_{22}$	23 359.898	1.159
	$6_{25} \leftarrow 5_{24}$	28 031.558	1.359	$6_{24} \leftarrow 5_{23}$	28 031.825	1.361
	$7_{26} \leftarrow 6_{25}$	32 703.297	1.544	$7_{25} \leftarrow 6_{24}$	32 703.724	1.547
	$8_{27} \leftarrow 7_{26}$	37 374.948	1.710	$8_{26} \leftarrow 7_{25}$	37 375.588	1.714
	$9_{28} \leftarrow 8_{27}$	42 046.500	1.854	$9_{27} \leftarrow 8_{26}$	42 047.415	1.860
	$4_{32} \leftarrow 3_{31}$	18 779.415	0.995	$4_{31} \leftarrow 3_{30}$	18 779.415	0.995
	$5_{33} \leftarrow 4_{32}$	23 474.203	1.221	$5_{32} \leftarrow 4_{31}$	23 474.203	1.221
	$6_{34} \leftarrow 5_{33}$	28 168.947	1.432	$6_{33} \leftarrow 5_{32}$	28 168.948	1.432
	$7_{35} \leftarrow 6_{34}$	32 863.640	1.624	$7_{34} \leftarrow 6_{33}$	32 863.641	1.624
	$8_{36} \leftarrow 7_{35}$	37 558.271	1.794	$8_{35} \leftarrow 7_{34}$	37 558.273	1.794
	$9_{37} \leftarrow 8_{36}$	42 252.832	1.939	$9_{36} \leftarrow 8_{35}$	42 252.836	1.940
	$5_{42} \leftarrow 4_{41}$	23 583.609	0.878	$5_{41} \leftarrow 4_{40}$	23 583.609	0.878
	$6_{43} \leftarrow 5_{42}$	28 300.228	1.015	$6_{42} \leftarrow 5_{41}$	28 300.228	1.015
	$7_{44} \leftarrow 6_{43}$	33 016.789	1.131	$7_{43} \leftarrow 6_{42}$	33 016.789	1.131
	$8_{45} \leftarrow 7_{44}$	37 733.285	1.222	$8_{44} \leftarrow 7_{43}$	37 733.285	1.222
	$9_{46} \leftarrow 8_{45}$	42 449.705	1.286	$9_{45} \leftarrow 8_{44}$	42 449.705	1.286
	$6_{52} \leftarrow 5_{51}$	28 426.724	0.378	$6_{51} \leftarrow 5_{50}$	28 426.724	0.378
	$7_{53} \leftarrow 6_{52}$	33 164.353	0.379	$7_{52} \leftarrow 6_{51}$	33 164.353	0.379
	$8_{54} \leftarrow 7_{53}$	37 901.910	0.352	$8_{53} \leftarrow 7_{52}$	37 901.910	0.352
	$9_{55} \leftarrow 8_{54}$	42 639.384	0.292	$9_{54} \leftarrow 8_{53}$	42 639.384	0.292
	$7_{62} \leftarrow 6_{61}$	33 307.336	-0.437	$7_{61} \leftarrow 6_{60}$	33 307.336	-0.437
	$8_{63} \leftarrow 7_{62}$	38 065.294	-0.596	$8_{62} \leftarrow 7_{61}$	38 065.294	-0.596
	$9_{64} \leftarrow 8_{63}$	42 823.159	-0.795	$9_{63} \leftarrow 8_{62}$	42 823.159	-0.795
$v_7^{\mathrm{b}} = 1$						
	$1_{01} \leftarrow 0_{00}$	4 670.070	-0.082			
	$2_{02} \leftarrow 1_{01}$	9 340.143	-0.167			
	$3_{03} \leftarrow 2_{02}$	14 010.222	-0.257			
	$4_{04} \leftarrow 3_{03}$	18 680.310	-0.355			
	$5_{05} \leftarrow 4_{04}$	23 350.410	-0.464			
	$6_{06} \leftarrow 5_{05}$	28 020.526	-0.585			
	$7_{07} \leftarrow 6_{06}$	32 690.659	-0.723			

	$8_{08} \leftarrow 7_{07}$	37 360.814	-0.878			
	$9_{09} \leftarrow 8_{08}$	42 030.994	-1.054			
	$2_{12} \leftarrow 1_{11}$	9 367.504	-0.147	$2_{11} \leftarrow 1_{10}$	9 399.945	-0.241
	$3_{13} \leftarrow 2_{12}$	14 051.252	-0.226	$3_{12} \leftarrow 2_{11}$	14 099.913	-0.367
	$4_{14} \leftarrow 3_{13}$	18 734.998	-0.313	$4_{13} \leftarrow 3_{12}$	18 799.875	-0.500
	$5_{15} \leftarrow 4_{14}$	23 418.738	-0.409	$5_{14} \leftarrow 4_{13}$	23 499.828	-0.643
	$6_{16} \leftarrow 5_{15}$	28 102.473	-0.517	$6_{15} \leftarrow 5_{14}$	28 199.772	-0.798
	$7_{17} \leftarrow 6_{16}$	32 786.201	-0.638	$7_{16} \leftarrow 6_{15}$	32 899.705	-0.967
	$8_{18} \leftarrow 7_{17}$	37 469.921	-0.777	$8_{17} \leftarrow 7_{16}$	37 599.623	-1.153
	$9_{19} \leftarrow 8_{18}$	42 153.632	-0.934	$9_{18} \leftarrow 8_{17}$	42 299.525	-1.357
	$3_{22} \leftarrow 2_{21}$	14 139.223	-0.240	$3_{21} \leftarrow 2_{20}$	14 139.352	-0.218
	$4_{23} \leftarrow 3_{22}$	18 852.140	-0.355	$4_{22} \leftarrow 3_{21}$	18 852.461	-0.300
	$5_{24} \leftarrow 4_{23}$	23 564.922	-0.499	$5_{23} \leftarrow 4_{22}$	23 565.563	-0.391
	$6_{25} \leftarrow 5_{24}$	28 277.534	-0.681	$6_{24} \leftarrow 5_{23}$	28 278.657	-0.492
	$7_{26} \leftarrow 6_{25}$	32 989.944	-0.908	$7_{25} \leftarrow 6_{24}$	32 991.740	-0.605
	$8_{27} \leftarrow 7_{26}$	37 702.117	-1.188	$8_{26} \leftarrow 7_{25}$	37 704.812	-0.733
	$9_{28} \leftarrow 8_{27}$	42 414.020	-1.527	$9_{27} \leftarrow 8_{26}$	42 417.870	-0.877
	$4_{32} \leftarrow 3_{31}$	18 935.239	-0.188	$4_{31} \leftarrow 3_{30}$	18 935.240	-0.188
	$5_{33} \leftarrow 4_{32}$	23 668.940	-0.272	$5_{32} \leftarrow 4_{31}$	23 668.942	-0.271
	$6_{34} \leftarrow 5_{33}$	28 402.568	-0.380	$6_{33} \leftarrow 5_{32}$	28 402.572	-0.378
	$7_{35} \leftarrow 6_{34}$	33 136.108	-0.519	$7_{34} \leftarrow 6_{33}$	33 136.118	-0.514
	$8_{36} \leftarrow 7_{35}$	37 869.544	-0.692	$8_{35} \leftarrow 7_{34}$	37 869.564	-0.684
	$9_{37} \leftarrow 8_{36}$	42 602.861	-0.907	$9_{36} \leftarrow 8_{35}$	42 602.898	-0.891
	$5_{42} \leftarrow 4_{41}$	23 770.099	-0.088	$5_{41} \leftarrow 4_{40}$	23 770.099	-0.088
	$6_{43} \leftarrow 5_{42}$	28 523.962	-0.165	$6_{42} \leftarrow 5_{41}$	28 523.962	-0.165
	$7_{44} \leftarrow 6_{43}$	33 277.739	-0.275	$7_{43} \leftarrow 6_{42}$	33 277.739	-0.275
	$8_{45} \leftarrow 7_{44}$	38 031.416	-0.423	$8_{44} \leftarrow 7_{43}$	38 031.416	-0.423
	$9_{46} \leftarrow 8_{45}$	42 784.979	-0.615	$9_{45} \leftarrow 8_{44}$	42 784.979	-0.615
$v_7^{\mathrm{b}} = 2$						
	$1_{01} \leftarrow 0_{00}$	4 711.839	-0.197			
	$2_{02} \leftarrow 1_{01}$	9 423.705	-0.391			
	$3_{03} \leftarrow 2_{02}$	14 135.625	-0.579			
	$4_{04} \leftarrow 3_{03}$	18 847.625	-0.760			
	$5_{05} \leftarrow 4_{04}$	23 559.731	-0.930			
	$6_{06} \leftarrow 5_{05}$	28 271.972	-1.087			
	$7_{07} \leftarrow 6_{06}$	32 984.374	-1.228			
	$8_{08} \leftarrow 7_{07}$	37 696.963	-1.351			
	$9_{09} \leftarrow 8_{08}$	42 409.766	-1.452			
	$2_{12} \leftarrow 1_{11}$	9 440.011	-0.459	$2_{11} \leftarrow 1_{10}$	9 486.776	-0.260
	$3_{13} \leftarrow 2_{12}$	14 160.036	-0.687	$3_{12} \leftarrow 2_{11}$	14 230.181	-0.388
	$4_{14} \leftarrow 3_{13}$	18 880.084	-0.914	$4_{13} \leftarrow 3_{12}$	18 973.605	-0.516
	$5_{15} \leftarrow 4_{14}$	23 600.164	-1.139	$5_{14} \leftarrow 4_{13}$	23 717.057	-0.643
	$6_{16} \leftarrow 5_{15}$	28 320.283	-1.361	$6_{15} \leftarrow 5_{14}$	28 460.542	-0.767
	$7_{17} \leftarrow 6_{16}$	33 040.451	-1.580	$7_{16} \leftarrow 6_{15}$	33 204.066	-0.891
	$8_{18} \leftarrow 7_{17}$	37 760.675	-1.795	$8_{17} \leftarrow 7_{16}$	37 947.635	-1.012
	$9_{19} \leftarrow 8_{18}$	42 480.966	-2.005	$9_{18} \leftarrow 8_{17}$	42 691.256	-1.132
	$3_{22} \leftarrow 2_{21}$	14 253.617	-0.430	$3_{21} \leftarrow 2_{20}$	14 253.983	-0.315
	$4_{23} \leftarrow 3_{22}$	19 004.429	-0.701	$4_{22} \leftarrow 3_{21}$	19 005.344	-0.413
	$5_{24} \leftarrow 4_{23}$	23 754.904	-1.081	$5_{23} \leftarrow 4_{22}$	23 756.735	-0.504
	$6_{24} \leftarrow 5_{23}$	28 508.162	-0.588	$6_{25} \leftarrow 5_{24}$	28 504.958	-1.597
	$7_{26} \leftarrow 6_{25}$	33 254.507	-2.277	$7_{25} \leftarrow 6_{24}$	33 259.633	-0.662
	$8_{27} \leftarrow 7_{26}$	38 003.468	-3.147	$8_{26} \leftarrow 7_{25}$	38 011.155	-0.726
	$9_{28} \leftarrow 8_{27}$	42 751.758	-4.233	$9_{27} \leftarrow 8_{26}$	42 762.736	-0.776
$v_7^{\mathrm{b}} = 3$						
	$1_{01} \leftarrow 0_{00}$	4 750.382	-0.157			
	$2_{02} \leftarrow 1_{01}$	9 500.849	-0.287			
	$3_{03} \leftarrow 2_{02}$	14 251.488	-0.366			
	$4_{04} \leftarrow 3_{03}$	19 002.384	-0.368			

$5_{05} \leftarrow 4_{04}$	23 753.622	-0.265
$6_{06} \leftarrow 5_{05}$	28 505.288	-0.033
$7_{07} \leftarrow 6_{06}$	33 257.467	0.353
$8_{08} \leftarrow 7_{07}$	38 010.244	0.921
$9_{09} \leftarrow 8_{08}$	42 763.703	1.693

Tabelle F.9 Extrapolierte Übergangsfrequenzen von ^{15}NCCNO.

	$J'_{k_a k'_c} \leftarrow J''_{k_a k''_c}$	ν_{calc} MHz	$\nu_{\mathrm{calc}} - \nu_{\mathrm{srb}}$ MHz	$J'_{k_a k'_c} \leftarrow J''_{k_a k''_c}$	ν_{calc} MHz	$\nu_{\mathrm{calc}} - \nu_{\mathrm{srb}}$ MHz
$v_7^{\mathrm{b}} = 0$						
	$1_{01} \leftarrow 0_{00}$	4 490.302	-0.344			
	$2_{02} \leftarrow 1_{01}$	8 980.600	-0.690			
	$3_{03} \leftarrow 2_{02}$	13 470.892	-1.042			
	$4_{04} \leftarrow 3_{03}$	17 961.174	-1.400			
	$5_{05} \leftarrow 4_{04}$	22 451.443	-1.768			
	$6_{06} \leftarrow 5_{05}$	26 941.696	-2.148			
	$7_{07} \leftarrow 6_{06}$	31 431.930	-2.543			
	$8_{08} \leftarrow 7_{07}$	35 922.141	-2.954			
	$9_{09} \leftarrow 8_{08}$	40 412.326	-3.385			
	$2_{12} \leftarrow 1_{11}$	9 022.386	0.249	$2_{11} \leftarrow 1_{10}$	9 038.872	0.164
	$3_{13} \leftarrow 2_{12}$	13 533.569	0.367	$3_{12} \leftarrow 2_{11}$	13 558.297	0.240
	$4_{14} \leftarrow 3_{13}$	18 044.742	0.478	$4_{13} \leftarrow 3_{12}$	18 077.711	0.309
	$5_{15} \leftarrow 4_{14}$	22 555.900	0.579	$5_{14} \leftarrow 4_{13}$	22 597.107	0.367
	$6_{16} \leftarrow 5_{15}$	27 067.039	0.668	$6_{15} \leftarrow 5_{14}$	27 116.482	0.413
	$7_{17} \leftarrow 6_{16}$	31 578.156	0.742	$7_{16} \leftarrow 6_{15}$	31 635.833	0.445
	$8_{18} \leftarrow 7_{17}$	36 089.247	0.799	$8_{17} \leftarrow 7_{16}$	36 155.154	0.458
	$9_{19} \leftarrow 8_{18}$	40 600.309	0.836	$9_{18} \leftarrow 8_{17}$	40 674.441	0.452
	$3_{22} \leftarrow 2_{21}$	13 616.047	0.836	$3_{21} \leftarrow 2_{20}$	13 616.075	0.837
	$4_{23} \leftarrow 3_{22}$	18 154.674	1.103	$4_{22} \leftarrow 3_{21}$	18 154.746	1.104
	$5_{24} \leftarrow 4_{23}$	22 693.255	1.358	$5_{23} \leftarrow 4_{22}$	22 693.399	1.361
	$6_{25} \leftarrow 5_{24}$	27 231.778	1.601	$6_{24} \leftarrow 5_{23}$	27 232.029	1.606
	$7_{26} \leftarrow 6_{25}$	31 770.230	1.827	$7_{25} \leftarrow 6_{24}$	31 770.633	1.835
	$8_{27} \leftarrow 7_{26}$	36 308.601	2.035	$8_{26} \leftarrow 7_{25}$	36 309.205	2.047
	$9_{28} \leftarrow 8_{27}$	40 846.878	2.221	$9_{27} \leftarrow 8_{26}$	40 847.741	2.238
$v_7^{\mathrm{b}} = 1$						
	$1_{01} \leftarrow 0_{00}$	4 536.849	-0.021			
	$2_{02} \leftarrow 1_{01}$	9 073.701	-0.045			
	$3_{03} \leftarrow 2_{02}$	13 610.558	-0.073			
	$4_{04} \leftarrow 3_{03}$	18 147.424	-0.109			
	$5_{05} \leftarrow 4_{04}$	22 684.302	-0.154			
	$6_{06} \leftarrow 5_{05}$	27 221.194	-0.210			
	$7_{07} \leftarrow 6_{06}$	31 758.103	-0.281			
	$8_{08} \leftarrow 7_{07}$	36 295.033	-0.368			
	$9_{09} \leftarrow 8_{08}$	40 831.985	-0.474			

Tabelle F.10 Extrapolierte Übergangsfrequenzen von N^{13}CCNO.

	$J'_{k_a k'_c} \leftarrow J''_{k_a k''_c}$	ν_{calc} MHz	$\nu_{\mathrm{calc}} - \nu_{\mathrm{srb}}$ MHz	$J'_{k_a k'_c} \leftarrow J''_{k_a k''_c}$	ν_{calc} MHz	$\nu_{\mathrm{calc}} - \nu_{\mathrm{srb}}$ MHz
$v_7^{\mathrm{b}} = 0$						
	$1_{01} \leftarrow 0_{00}$	4 581.726	-0.301			
	$2_{02} \leftarrow 1_{01}$	9 163.448	-0.605			
	$3_{03} \leftarrow 2_{02}$	13 745.164	-0.914			
	$4_{04} \leftarrow 3_{03}$	18 326.869	-1.231			
	$5_{05} \leftarrow 4_{04}$	22 908.561	-1.557			
	$6_{06} \leftarrow 5_{05}$	27 490.236	-1.896			

	$7_{07} \leftarrow 6_{06}$	32 071.891	-2.251			
	$8_{08} \leftarrow 7_{07}$	36 653.522	-2.623			
	$9_{09} \leftarrow 8_{08}$	41 235.126	-3.015			
	$2_{12} \leftarrow 1_{11}$	9 206.161	0.276	$2_{11} \leftarrow 1_{10}$	9 223.216	0.202
	$3_{13} \leftarrow 2_{12}$	13 809.231	0.408	$3_{12} \leftarrow 2_{11}$	13 834.813	0.296
	$4_{14} \leftarrow 3_{13}$	18 412.290	0.532	$4_{13} \leftarrow 3_{12}$	18 446.396	0.382
	$5_{15} \leftarrow 4_{14}$	23 015.334	0.645	$5_{14} \leftarrow 4_{13}$	23 057.963	0.458
	$6_{16} \leftarrow 5_{15}$	27 618.358	0.746	$6_{15} \leftarrow 5_{14}$	27 669.507	0.522
	$7_{17} \leftarrow 6_{16}$	32 221.359	0.831	$7_{16} \leftarrow 6_{15}$	32 281.026	0.569
	$8_{18} \leftarrow 7_{17}$	36 824.333	0.898	$8_{17} \leftarrow 7_{16}$	36 892.513	0.598
	$9_{19} \leftarrow 8_{18}$	41 427.276	0.945	$9_{18} \leftarrow 8_{17}$	41 503.966	0.607
	$3_{22} \leftarrow 2_{21}$	13 893.771	0.740	$3_{21} \leftarrow 2_{20}$	13 893.801	0.740
	$4_{23} \leftarrow 3_{22}$	18 524.971	0.974	$4_{22} \leftarrow 3_{21}$	18 525.046	0.975
	$5_{24} \leftarrow 4_{23}$	23 156.123	1.197	$5_{23} \leftarrow 4_{22}$	23 156.272	1.199
	$6_{25} \leftarrow 5_{24}$	27 787.213	1.407	$6_{24} \leftarrow 5_{23}$	27 787.475	1.409
	$7_{26} \leftarrow 6_{25}$	32 418.231	1.600	$7_{25} \leftarrow 6_{24}$	32 418.649	1.604
	$8_{27} \leftarrow 7_{26}$	37 049.163	1.774	$8_{26} \leftarrow 7_{25}$	37 049.791	1.780
	$9_{28} \leftarrow 8_{27}$	41 679.998	1.926	$9_{27} \leftarrow 8_{26}$	41 680.895	1.936
$v_7^{\mathrm{b}} = 1$						
	$1_{01} \leftarrow 0_{00}$	4 629.356	-0.076			
	$2_{02} \leftarrow 1_{01}$	9 258.715	-0.155			
	$3_{03} \leftarrow 2_{02}$	13 888.080	-0.239			
	$4_{04} \leftarrow 3_{03}$	18 517.453	-0.331			
	$5_{05} \leftarrow 4_{04}$	23 146.839	-0.432			
	$6_{06} \leftarrow 5_{05}$	27 776.240	-0.547			
	$7_{07} \leftarrow 6_{06}$	32 405.658	-0.676			
	$8_{08} \leftarrow 7_{07}$	37 035.097	-0.823			
	$9_{09} \leftarrow 8_{08}$	41 664.560	-0.991			

Tabelle F.11 Extrapolierte Übergangsfrequenzen von $NCC^{15}NO$.

	$J'_{k_a k'_c} \leftarrow J''_{k_a k''_c}$	ν_{calc} MHz	$\nu_{\mathrm{calc}} - \nu_{\mathrm{srb}}$ MHz	$J'_{k_a k'_c} \leftarrow J''_{k_a k''_c}$	ν_{calc} MHz	$\nu_{\mathrm{calc}} - \nu_{\mathrm{srb}}$ MHz
$v_7^{\mathrm{b}} = 0$						
	$1_{01} \leftarrow 0_{00}$	4 595.794	-0.316			
	$2_{02} \leftarrow 1_{01}$	9 191.585	-0.634			
	$3_{03} \leftarrow 2_{02}$	13 787.368	-0.957			
	$4_{04} \leftarrow 3_{03}$	18 383.142	-1.288			
	$5_{05} \leftarrow 4_{04}$	22 978.902	-1.628			
	$6_{06} \leftarrow 5_{05}$	27 574.645	-1.982			
	$7_{07} \leftarrow 6_{06}$	32 170.367	-2.351			
	$8_{08} \leftarrow 7_{07}$	36 766.066	-2.737			
	$9_{09} \leftarrow 8_{08}$	41 361.737	-3.144			
	$2_{12} \leftarrow 1_{11}$	9 234.488	0.281	$2_{11} \leftarrow 1_{10}$	9 251.634	0.198
	$3_{13} \leftarrow 2_{12}$	13 851.722	0.415	$3_{12} \leftarrow 2_{11}$	13 877.440	0.291
	$4_{14} \leftarrow 3_{13}$	18 468.944	0.541	$4_{13} \leftarrow 3_{12}$	18 503.233	0.376
	$5_{15} \leftarrow 4_{14}$	23 086.151	0.657	$5_{14} \leftarrow 4_{13}$	23 129.008	0.450
	$6_{16} \leftarrow 5_{15}$	27 703.339	0.760	$6_{15} \leftarrow 5_{14}$	27 754.761	0.511
	$7_{17} \leftarrow 6_{16}$	32 320.503	0.848	$7_{16} \leftarrow 6_{15}$	32 380.488	0.557
	$8_{18} \leftarrow 7_{17}$	36 937.640	0.917	$8_{17} \leftarrow 7_{16}$	37 006.185	0.584
	$9_{19} \leftarrow 8_{18}$	41 554.746	0.966	$9_{18} \leftarrow 8_{17}$	41 631.846	0.591
	$3_{22} \leftarrow 2_{21}$	13 936.680	0.799	$3_{21} \leftarrow 2_{20}$	13 936.711	0.799
	$4_{23} \leftarrow 3_{22}$	18 582.183	1.052	$4_{22} \leftarrow 3_{21}$	18 582.259	1.053
	$5_{24} \leftarrow 4_{23}$	23 227.637	1.295	$5_{23} \leftarrow 4_{22}$	23 227.788	1.297
	$6_{25} \leftarrow 5_{24}$	27 873.029	1.524	$6_{24} \leftarrow 5_{23}$	27 873.294	1.527
	$7_{26} \leftarrow 6_{25}$	32 518.347	1.736	$7_{25} \leftarrow 6_{24}$	32 518.771	1.741
	$8_{27} \leftarrow 7_{26}$	37 163.579	1.929	$8_{26} \leftarrow 7_{25}$	37 164.215	1.937

	$9_{28} \leftarrow 8_{27}$	41 808.713	2.101	$9_{27} \leftarrow 8_{26}$	41 809.621	2.111
$v_7^{\mathrm{b}} = 1$						
	$1_{01} \leftarrow 0_{00}$	4 643.657	-0.052			
	$2_{02} \leftarrow 1_{01}$	9 287.317	-0.107			
	$3_{03} \leftarrow 2_{02}$	13 930.983	-0.167			
	$4_{04} \leftarrow 3_{03}$	18 574.658	-0.234			
	$5_{05} \leftarrow 4_{04}$	23 218.346	-0.312			
	$6_{06} \leftarrow 5_{05}$	27 862.048	-0.402			
	$7_{07} \leftarrow 6_{06}$	32 505.769	-0.507			
	$8_{08} \leftarrow 7_{07}$	37 149.511	-0.630			
	$9_{09} \leftarrow 8_{08}$	41 793.278	-0.774			

Tabelle F.12 Extrapolierte Übergangsfrequenzen von $NCCN^{18}O$.

	$J'_{k_a k'_c} \leftarrow J''_{k_a k''_c}$	ν_{calc} MHz	$\nu_{\mathrm{calc}} - \nu_{\mathrm{srb}}$ MHz	$J'_{k_a k'_c} \leftarrow J''_{k_a k''_c}$	ν_{calc} MHz	$\nu_{\mathrm{calc}} - \nu_{\mathrm{srb}}$ MHz
$v_7^{\mathrm{b}} = 0$						
	$1_{01} \leftarrow 0_{00}$	4 410.694	-0.196			
	$2_{02} \leftarrow 1_{01}$	8 821.384	-0.394			
	$3_{03} \leftarrow 2_{02}$	13 232.069	-0.596			
	$4_{04} \leftarrow 3_{03}$	17 642.743	-0.806			
	$5_{05} \leftarrow 4_{04}$	22 053.406	-1.025			
	$6_{06} \leftarrow 5_{05}$	26 464.053	-1.256			
	$7_{07} \leftarrow 6_{06}$	30 874.681	-1.500			
	$8_{08} \leftarrow 7_{07}$	35 285.287	-1.761			
	$9_{09} \leftarrow 8_{08}$	39 695.868	-2.040			
	$2_{12} \leftarrow 1_{11}$	8 862.418	0.461	$2_{11} \leftarrow 1_{10}$	8 878.394	0.382
	$3_{13} \leftarrow 2_{12}$	13 293.618	0.685	$3_{12} \leftarrow 2_{11}$	13 317.581	0.567
	$4_{14} \leftarrow 3_{13}$	17 724.807	0.903	$4_{13} \leftarrow 3_{12}$	17 756.756	0.745
	$5_{15} \leftarrow 4_{14}$	22 155.982	1.111	$5_{14} \leftarrow 4_{13}$	22 195.915	0.914
	$6_{16} \leftarrow 5_{15}$	26 587.140	1.307	$6_{15} \leftarrow 5_{14}$	26 635.053	1.070
	$7_{17} \leftarrow 6_{16}$	31 018.276	1.490	$7_{16} \leftarrow 6_{15}$	31 074.168	1.212
	$8_{18} \leftarrow 7_{17}$	35 449.387	1.655	$8_{17} \leftarrow 7_{16}$	35 513.254	1.338
	$9_{19} \leftarrow 8_{18}$	39 880.471	1.802	$9_{18} \leftarrow 8_{17}$	39 952.309	1.444