Anhang E

Experimentelle Daten zu Kapitel 8

Als Grundlage für die in Kapitel 8 beschriebenen *semirigid bender* -Analysen der beiden quasilinearen Knickschwingungen, der BrCN-Knickschwingung von Bromfulminat BrCNO und der ClCN-Knickschwingung von Chlorfulminat ClCNO dienten die Übergangsfrequenzen niedriger a-Typ-Rotationsübergänge bis $J = 9 \leftarrow 8$, wie sie aus den Reihenentwicklungskonstanten in Tabelle 6.3 und 6.4 oder in Tabelle 7.4 und 7.6 berechnet wurden. Sämtliche berechneten Übergangsfrequenzen sind in Tabelle E.3 und E.4 zusammengefaßt. Gleichzeitig sind dort auch die Abweichungen dieser Übergangsfrequenzen ν_{calc} von den Übergangsfrequenzen ν_{srb} eines halbstarren Knickschwingers mit den angepaßten Parametern aus Tabelle 8.8 aufgeführt.

Sämtliche experimentellen Daten aus der ebenfalls in Kapitel 8 dargestellten Aufzeichnung des Submillimeterwellen-Spektrums von BrCNO mit dem Terahertz-Spektrometer in Köln sind auf der beigefügten *Compact Disc* wieder unter BrCNO.i01 im Verzeichnis BrCNO.c02 abgespeichert. Das Unterverzeichnis xy_org enthält im ASCII-Format die ursprünglich aufgezeichneten Spektren in chronologischer Reihenfolge, das Unterverzeichnis xy_mod die später durch *Postzerofilling* und Glätten bearbeiteten Spektren wieder geordnet nach der Startfrequenz. Sämtliche Linienlisten finden sich im Unterverzeichnis pl. Die bei der erfolglosen Suche nach der Fundamentalbande der quasilinearen BrCN-Knickschwingung ν_5 eher zufällig identifizierten hohen a-Typ-Rotationsübergänge von BrCNO wurden an die entsprechenden Eingabedateien für linc96 im Verzeichnis Frequency angehängt; die neuen Eingabedateien tragen die Endung .elin und die zugehörenden Ausgabedateien die Endung .elot. Nachdem die erhaltenen Reihenentwicklungskonstanten bereits in Tabelle 8.2 aufgeführt wurden, sind in den folgenden Tabellen E.1 und E.2 alle experimentellen Übergangsfrequenzen ν_{exp} und ihre Abweichungen $\nu_{\mathrm{exp}} - \nu_{\mathrm{calc}}$ von den dergestalt berechneten Übergangsfrequenzen ν_{calc} zusammengestellt.

Tabelle E.1 Zugeordnete a-Typ-Rotationsübergänge von ^{79}BrCNO im Frequenzbereich zwischen 563 und 672 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						
	164 ← 163	565 236.616	-0.045			
	165 ← 164	568 622.582	-0.027			
	166 ← 165	572 007.532	-0.079			
	167 ← 166	575 391.622	-0.043			
	168 ← 167	578 774.725	-0.045			
	169 ← 168	582 156.921	-0.005			
	170 ← 169	585 538.094	-0.038			
	171 ← 170	588 918.376	-0.011			
	172 ← 171	592 297.670	-0.021			
	173 ← 172	595 676.063	0.021			
	174 ← 173	599 053.437	-0.005			
	175 ← 174	602 429.917	0.029			
	176 ← 175	605 805.379	-0.002			
	177 ← 176	609 179.949	0.027			
	178 ← 177	612 553.537	0.028			
	179 ← 178	615 926.284	0.142			
	180 ← 179	619 297.857	0.035			
	181 ← 180	622 668.624	0.075			
	182 ← 181	626 038.323	-0.001			
	183 ← 182	629 407.210	0.065			
	184 ← 183	632 775.071	0.056			
	185 ← 184	636 141.981	0.048			
	186 ← 185	639 507.888	-0.011			
	187 ← 186	642 872.919	0.003			
	188 ← 187	646 236.897	-0.086			
	189 ← 188	649 600.101	0.000			
	190 ← 189	652 962.213	-0.058			
	191 ← 190	656 323.407	-0.087			
$(\nu_5^1)^{1e}$				$(\nu_5^1)^{1f}$		
	163 ← 162	564 201.176	-0.024	163 ← 162	565 439.088	-0.009
	164 ← 163	567 612.980	0.012	164 ← 163	568 852.751	-0.048
	165 ← 164	571 023.934	0.020	165 ← 164	572 265.563	-0.043
	166 ← 165			166 ← 165	575 677.506	-0.010
	167 ← 166	577 843.360	0.025	167 ← 166		
	168 ← 167	581 251.814	0.010	168 ← 167	582 498.643	0.005
	169 ← 168	584 659.468	0.025	169 ← 168	585 907.851	0.005
	170 ← 169	588 066.288	0.040	170 ← 169	589 316.191	0.042
	171 ← 170	591 472.018	-0.201	171 ← 170	592 723.565	0.020
	172 ← 171	594 877.356	0.005	172 ← 171	596 130.020	-0.013
	173 ← 172	598 281.669	0.025	173 ← 172	599 535.597	-0.013
	174 ← 173	601 685.116	0.022	174 ← 173	602 940.317	0.041
	175 ← 174	605 087.695	-0.006	175 ← 174	606 344.011	-0.016
	176 ← 175	608 489.447	-0.013	176 ← 175	609 746.799	-0.064
	177 ← 176	611 890.498	0.126	177 ← 176	613 148.788	0.005
	179 ← 178	618 689.780	0.140	179 ← 178	619 949.790	-0.074
	180 ← 179	622 087.866	-0.127	180 ← 179	623 349.079	0.056
	181 ← 180			181 ← 180	626 747.310	0.051
	182 ← 181	628 882.109	-0.018	182 ← 181	630 144.582	0.011
	183 ← 182	632 277.929	0.025	183 ← 182	633 540.992	0.034
	184 ← 183	635 672.821	0.003	184 ← 183	636 936.591	0.174
	185 ← 184	639 066.676	-0.192	185 ← 184	640 330.907	-0.042
	186 ← 185	642 460.096	0.044	186 ← 185		

	187 ← 186				187 ← 186	647 117.288	0.066
	188 ← 187	649 243.862	0.048		188 ← 187	650 508.925	-0.037
	189 ← 188	652 634.403	0.014		189 ← 188	653 899.751	-0.019
	190 ← 189				190 ← 189	657 289.606	-0.038
	191 ← 190	659 412.922	0.004		191 ← 190	660 678.497	-0.086

Tabelle E.2 Zugeordnete a-Typ-Rotationsübergänge von ^{81}BrCNO im Frequenzbereich zwischen 563 und 672 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							
	165 ← 164	564 416.540	-0.103				
	166 ← 165	567 776.848	-0.058				
	167 ← 166	571 136.191	-0.041				
	169 ← 168	577 852.054	-0.013				
	170 ← 169	581 208.570	-0.006				
	171 ← 170	584 564.142	-0.001				
	172 ← 171	587 918.771	0.001				
	173 ← 172	591 272.478	0.024				
	174 ← 173	594 625.210	0.014				
	175 ← 174	597 976.989	-0.006				
	176 ← 175	601 327.863	0.011				
	177 ← 176	604 677.786	0.021				
	178 ← 177	608 026.783	0.048				
	179 ← 178	611 374.824	0.063				
	180 ← 179	614 721.878	0.035				
	182 ← 181	621 413.197	0.018				
	184 ← 183	628 100.755	0.012				
	185 ← 184	631 443.137	0.025				
	186 ← 185	634 784.552	0.013				
	187 ← 186	638 125.170	0.144				
	188 ← 187	641 464.610	0.038				
	189 ← 188	644 803.089	-0.090				
	190 ← 189	648 140.802	-0.046				
	191 ← 190	651 477.452	-0.127				
$(\nu_5^1)^{1e}$				$(\nu_5^1)^{1f}$			
	164 ← 163	563 412.173	0.003		164 ← 163	564 637.646	0.002
	165 ← 164	566 798.179	0.052		165 ← 164	568 025.476	0.002
	166 ← 165	570 183.324	0.054		166 ← 165	571 412.364	-0.054
	167 ← 166	573 567.594	-0.003		167 ← 166	574 798.481	0.007
	168 ← 167	576 951.146	0.040		168 ← 167	578 183.643	0.004
	169 ← 168	580 333.801	0.007		169 ← 168	581 567.885	-0.027
	170 ← 169	583 715.666	0.008		170 ← 169	584 951.321	0.029
	171 ← 170	587 096.697	-0.000		171 ← 170		
	172 ← 171	590 476.935	0.026		172 ← 171	591 715.373	0.013
	173 ← 172	593 856.268	-0.022		173 ← 172	595 096.067	0.021
	174 ← 173	597 234.732	-0.107		174 ← 173	598 475.862	0.032
	175 ← 174	600 612.541	-0.012		175 ← 174	601 854.757	0.046
	176 ← 175	603 989.443	0.012		176 ← 175	605 232.687	-0.000
	177 ← 176	607 365.472	0.002		177 ← 176	608 609.748	-0.009
	178 ← 177	610 740.711	0.042		178 ← 177	611 985.820	-0.099
	179 ← 178	614 114.882	-0.142		179 ← 178		
	180 ← 179	617 488.607	0.072		180 ← 179		
	181 ← 180	620 861.057	-0.142		181 ← 180	622 109.006	0.063
	182 ← 181	624 233.024	0.010		182 ← 181	625 481.429	-0.030
	183 ← 182	627 603.987	0.008		183 ← 182	628 853.087	0.028

$184 \leftarrow 183$	630 974.135	0.044	$184 \leftarrow 183$	632 223.779	0.036
$185 \leftarrow 184$			$185 \leftarrow 184$	635 593.529	0.019
$186 \leftarrow 185$	637 711.797	0.048	$186 \leftarrow 185$	638 962.331	-0.027
$187 \leftarrow 186$	641 079.327	0.034	$187 \leftarrow 186$	642 330.249	-0.037
$188 \leftarrow 187$	644 445.953	-0.024	$188 \leftarrow 187$		
$189 \leftarrow 188$	647 811.822	0.023	$189 \leftarrow 188$	649 063.407	0.030
$190 \leftarrow 189$	651 176.748	-0.010	$190 \leftarrow 189$	652 428.506	-0.032
$191 \leftarrow 190$			$191 \leftarrow 190$	655 792.769	-0.007

Tabelle E.3 Extrapolierte Übergangsfrequenzen von ^{79}BrCNO.

$J'_{k_a k'_c} \leftarrow J''_{k_a k''_c}$	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
$v_5^b = 0$					
$1_{01} \leftarrow 0_{00}$	3 479.859	-0.407			
$2_{02} \leftarrow 1_{01}$	6 959.710	-0.816			
$3_{03} \leftarrow 2_{02}$	10 439.544	-1.230			
$4_{04} \leftarrow 3_{03}$	13 919.354	-1.651			
$5_{05} \leftarrow 4_{04}$	17 399.131	-2.082			
$6_{06} \leftarrow 5_{05}$	20 878.868	-2.525			
$7_{07} \leftarrow 6_{06}$	24 358.556	-2.983			
$8_{08} \leftarrow 7_{07}$	27 838.186	-3.458			
$9_{09} \leftarrow 8_{08}$	31 317.752	-3.952			
$2_{12} \leftarrow 1_{11}$	6 975.663	0.300	$2_{11} \leftarrow 1_{10}$	6 997.740	-0.336
$3_{13} \leftarrow 2_{12}$	10 463.478	0.443	$3_{12} \leftarrow 2_{11}$	10 496.592	-0.510
$4_{14} \leftarrow 3_{13}$	13 951.274	0.580	$4_{13} \leftarrow 3_{12}$	13 995.422	-0.691
$5_{15} \leftarrow 4_{14}$	17 439.044	0.706	$5_{14} \leftarrow 4_{13}$	17 494.222	-0.882
$6_{16} \leftarrow 5_{15}$	20 926.782	0.820	$6_{15} \leftarrow 5_{14}$	20 992.985	-1.085
$7_{17} \leftarrow 6_{16}$	24 414.482	0.920	$7_{16} \leftarrow 6_{15}$	24 491.705	-1.302
$8_{18} \leftarrow 7_{17}$	27 902.136	1.002	$8_{17} \leftarrow 7_{16}$	27 990.372	-1.537
$9_{19} \leftarrow 8_{18}$	31 389.739	1.065	$9_{18} \leftarrow 8_{17}$	31 488.981	-1.791
$3_{22} \leftarrow 2_{21}$	10 525.578	0.499	$3_{21} \leftarrow 2_{20}$	10 525.553	0.473
$4_{23} \leftarrow 3_{22}$	14 034.074	0.653	$4_{22} \leftarrow 3_{21}$	14 034.041	0.620
$5_{24} \leftarrow 4_{23}$	17 542.543	0.798	$5_{23} \leftarrow 4_{22}$	17 542.504	0.756
$6_{25} \leftarrow 5_{24}$	21 050.981	0.930	$6_{24} \leftarrow 5_{23}$	21 050.936	0.880
$7_{26} \leftarrow 6_{25}$	24 559.380	1.047	$7_{25} \leftarrow 6_{24}$	24 559.329	0.990
$8_{27} \leftarrow 7_{26}$	28 067.734	1.146	$8_{26} \leftarrow 7_{25}$	28 067.679	1.082
$9_{28} \leftarrow 8_{27}$	31 576.036	1.226	$9_{27} \leftarrow 8_{26}$	31 575.979	1.154
$4_{32} \leftarrow 3_{31}$	14 094.048	0.745	$4_{31} \leftarrow 3_{30}$	14 094.048	0.745
$5_{33} \leftarrow 4_{32}$	17 617.513	0.912	$5_{32} \leftarrow 4_{31}$	17 617.513	0.912
$6_{34} \leftarrow 5_{33}$	21 140.948	1.067	$6_{33} \leftarrow 5_{32}$	21 140.948	1.067
$7_{35} \leftarrow 6_{34}$	24 664.345	1.206	$7_{34} \leftarrow 6_{33}$	24 664.345	1.206
$8_{36} \leftarrow 7_{35}$	28 187.699	1.328	$8_{35} \leftarrow 7_{34}$	28 187.699	1.328
$9_{37} \leftarrow 8_{36}$	31 711.003	1.430	$9_{36} \leftarrow 8_{35}$	31 711.003	1.430
$5_{42} \leftarrow 4_{41}$	17 690.299	0.576	$5_{41} \leftarrow 4_{40}$	17 690.299	0.576
$6_{43} \leftarrow 5_{42}$	21 228.291	0.663	$6_{42} \leftarrow 5_{41}$	21 228.291	0.663
$7_{44} \leftarrow 6_{43}$	24 766.246	0.735	$7_{43} \leftarrow 6_{42}$	24 766.246	0.735
$8_{45} \leftarrow 7_{44}$	28 304.159	0.789	$8_{44} \leftarrow 7_{43}$	28 304.159	0.789
$9_{46} \leftarrow 8_{45}$	31 842.023	0.822	$9_{45} \leftarrow 8_{44}$	31 842.023	0.822
$6_{52} \leftarrow 5_{51}$	21 312.959	-0.114	$6_{51} \leftarrow 5_{50}$	21 312.959	-0.114
$7_{53} \leftarrow 6_{52}$	24 865.026	-0.172	$7_{52} \leftarrow 6_{51}$	24 865.026	-0.172
$8_{54} \leftarrow 7_{53}$	28 417.050	-0.249	$8_{53} \leftarrow 7_{52}$	28 417.050	-0.249
$9_{55} \leftarrow 8_{54}$	31 969.026	-0.346	$9_{54} \leftarrow 8_{53}$	31 969.026	-0.346
$7_{62} \leftarrow 6_{61}$	24 960.998	-1.368	$7_{61} \leftarrow 6_{60}$	24 960.998	-1.368
$8_{63} \leftarrow 7_{62}$	28 526.732	-1.616	$8_{62} \leftarrow 7_{61}$	28 526.732	-1.616
$9_{64} \leftarrow 8_{63}$	32 092.417	-1.886	$9_{63} \leftarrow 8_{62}$	32 092.417	-1.886
$8_{72} \leftarrow 7_{71}$	28 633.621	-3.183	$8_{71} \leftarrow 7_{70}$	28 633.621	-3.183

	$9_{73} \leftarrow 8_{72}$	32 212.666	-3.650	$9_{72} \leftarrow 8_{71}$	32 212.666	-3.650
	$9_{82} \leftarrow 8_{81}$	32 330.191	-5.531	$9_{81} \leftarrow 8_{80}$	32 330.191	-5.531
$v_5^{\mathrm{b}} = 1$						
	$1_{01} \leftarrow 0_{00}$	3 472.980	-0.399			
	$2_{02} \leftarrow 1_{01}$	6 945.955	-0.800			
	$3_{03} \leftarrow 2_{02}$	10 418.921	-1.206			
	$4_{04} \leftarrow 3_{03}$	13 891.872	-1.620			
	$5_{05} \leftarrow 4_{04}$	17 364.805	-2.044			
	$6_{06} \leftarrow 5_{05}$	20 837.714	-2.480			
	$7_{07} \leftarrow 6_{06}$	24 310.596	-2.931			
	$8_{08} \leftarrow 7_{07}$	27 783.444	-3.399			
	$9_{09} \leftarrow 8_{08}$	31 256.255	-3.886			
	$2_{12} \leftarrow 1_{11}$	6 989.520	0.264	$2_{11} \leftarrow 1_{10}$	7 013.929	0.037
	$3_{13} \leftarrow 2_{12}$	10 484.268	0.390	$3_{12} \leftarrow 2_{11}$	10 520.879	0.049
	$4_{14} \leftarrow 3_{13}$	13 979.001	0.508	$4_{13} \leftarrow 3_{12}$	14 027.813	0.053
	$5_{15} \leftarrow 4_{14}$	17 473.714	0.616	$5_{14} \leftarrow 4_{13}$	17 534.724	0.047
	$6_{16} \leftarrow 5_{15}$	20 968.403	0.712	$6_{15} \leftarrow 5_{14}$	21 041.608	0.028
	$7_{17} \leftarrow 6_{16}$	24 463.062	0.792	$7_{16} \leftarrow 6_{15}$	24 548.458	-0.006
	$8_{18} \leftarrow 7_{17}$	27 957.686	0.854	$8_{17} \leftarrow 7_{16}$	28 055.270	-0.058
	$9_{19} \leftarrow 8_{18}$	31 452.271	0.896	$9_{18} \leftarrow 8_{17}$	31 562.037	-0.131
	$3_{22} \leftarrow 2_{21}$	10 563.073	0.717	$3_{21} \leftarrow 2_{20}$	10 563.076	0.718
	$4_{23} \leftarrow 3_{22}$	14 084.069	0.944	$4_{22} \leftarrow 3_{21}$	14 084.075	0.945
	$5_{24} \leftarrow 4_{23}$	17 605.041	1.160	$5_{23} \leftarrow 4_{22}$	17 605.053	1.162
	$6_{25} \leftarrow 5_{24}$	21 125.983	1.364	$6_{24} \leftarrow 5_{23}$	21 126.004	1.365
	$7_{26} \leftarrow 6_{25}$	24 646.889	1.551	$7_{25} \leftarrow 6_{24}$	24 646.923	1.553
	$8_{27} \leftarrow 7_{26}$	28 167.752	1.720	$8_{26} \leftarrow 7_{25}$	28 167.803	1.723
	$9_{28} \leftarrow 8_{27}$	31 688.568	1.869	$9_{27} \leftarrow 8_{26}$	31 688.640	1.872
	$4_{32} \leftarrow 3_{31}$	14 153.330	1.023	$4_{31} \leftarrow 3_{30}$	14 153.333	1.026
	$5_{33} \leftarrow 4_{32}$	17 691.619	1.259	$5_{32} \leftarrow 4_{31}$	17 691.623	1.263
	$6_{34} \leftarrow 5_{33}$	21 229.878	1.481	$6_{33} \leftarrow 5_{32}$	21 229.883	1.486
	$7_{35} \leftarrow 6_{34}$	24 768.104	1.688	$7_{34} \leftarrow 6_{33}$	24 768.109	1.693
	$8_{36} \leftarrow 7_{35}$	28 306.288	1.875	$8_{35} \leftarrow 7_{34}$	28 306.294	1.881
	$9_{37} \leftarrow 8_{36}$	31 844.426	2.042	$9_{36} \leftarrow 8_{35}$	31 844.433	2.048
	$5_{42} \leftarrow 4_{41}$	17 770.587	0.917	$5_{41} \leftarrow 4_{40}$	17 770.587	0.917
	$6_{43} \leftarrow 5_{42}$	21 324.640	1.071	$6_{42} \leftarrow 5_{41}$	21 324.640	1.071
	$7_{44} \leftarrow 6_{43}$	24 878.657	1.208	$7_{43} \leftarrow 6_{42}$	24 878.657	1.208
	$8_{45} \leftarrow 7_{44}$	28 432.633	1.326	$8_{44} \leftarrow 7_{43}$	28 432.633	1.326
	$9_{46} \leftarrow 8_{45}$	31 986.562	1.423	$9_{45} \leftarrow 8_{44}$	31 986.562	1.423
	$6_{52} \leftarrow 5_{51}$	21 413.586	0.343	$6_{51} \leftarrow 5_{50}$	21 413.586	0.343
	$7_{53} \leftarrow 6_{52}$	24 982.426	0.358	$7_{52} \leftarrow 6_{51}$	24 982.426	0.358
	$8_{54} \leftarrow 7_{53}$	28 551.224	0.354	$8_{53} \leftarrow 7_{52}$	28 551.224	0.354
	$9_{55} \leftarrow 8_{54}$	32 119.974	0.328	$9_{54} \leftarrow 8_{53}$	32 119.974	0.328
	$7_{62} \leftarrow 6_{61}$	25 081.400	-0.702	$7_{61} \leftarrow 6_{60}$	25 081.400	-0.702
	$8_{63} \leftarrow 7_{62}$	28 664.335	-0.859	$8_{62} \leftarrow 7_{61}$	28 664.335	-0.859
	$9_{64} \leftarrow 8_{63}$	32 247.222	-1.039	$9_{63} \leftarrow 8_{62}$	32 247.222	-1.039
$v_5^{\mathrm{b}} = 2$						
	$1_{01} \leftarrow 0_{00}$	3 502.663	-0.212			
	$2_{02} \leftarrow 1_{01}$	7 005.324	-0.426			
	$3_{03} \leftarrow 2_{02}$	10 507.979	-0.646			
	$4_{04} \leftarrow 3_{03}$	14 010.625	-0.873			
	$5_{05} \leftarrow 4_{04}$	17 513.259	-1.110			
	$6_{06} \leftarrow 5_{05}$	21 015.879	-1.360			
	$7_{07} \leftarrow 6_{06}$	24 518.482	-1.625			
	$8_{08} \leftarrow 7_{07}$	28 021.065	-1.908			
	$9_{09} \leftarrow 8_{08}$	31 523.624	-2.212			
	$2_{12} \leftarrow 1_{11}$	7 030.626	-0.057	$2_{11} \leftarrow 1_{10}$	7 060.424	0.002
	$3_{13} \leftarrow 2_{12}$	10 545.929	-0.092	$3_{12} \leftarrow 2_{11}$	10 590.624	-0.004
	$4_{14} \leftarrow 3_{13}$	14 061.219	-0.135	$4_{13} \leftarrow 3_{12}$	14 120.811	-0.018

	$5_{15} \leftarrow 4_{14}$	17 576.494	-0.189	$5_{14} \leftarrow 4_{13}$	17 650.980	-0.043
	$6_{16} \leftarrow 5_{15}$	21 091.748	-0.256	$6_{15} \leftarrow 5_{14}$	21 181.126	-0.081
	$7_{17} \leftarrow 6_{16}$	24 606.978	-0.338	$7_{16} \leftarrow 6_{15}$	24 711.245	-0.135
	$8_{18} \leftarrow 7_{17}$	28 122.180	-0.439	$8_{17} \leftarrow 7_{16}$	28 241.332	-0.208
	$9_{19} \leftarrow 8_{18}$	31 637.349	-0.561	$9_{18} \leftarrow 8_{17}$	31 771.383	-0.302
	$3_{22} \leftarrow 2_{21}$	10 622.897	0.341	$3_{21} \leftarrow 2_{20}$	10 622.902	0.338
	$4_{23} \leftarrow 3_{22}$	14 163.832	0.441	$4_{22} \leftarrow 3_{21}$	14 163.847	0.438
	$5_{24} \leftarrow 4_{23}$	17 704.739	0.530	$5_{23} \leftarrow 4_{22}$	17 704.773	0.527
	$6_{25} \leftarrow 5_{24}$	21 245.612	0.605	$6_{24} \leftarrow 5_{23}$	21 245.676	0.602
	$7_{26} \leftarrow 6_{25}$	24 786.445	0.663	$7_{25} \leftarrow 6_{24}$	24 786.549	0.661
	$8_{27} \leftarrow 7_{26}$	28 327.230	0.702	$8_{26} \leftarrow 7_{25}$	28 327.390	0.701
	$9_{28} \leftarrow 8_{27}$	31 867.961	0.717	$9_{27} \leftarrow 8_{26}$	31 868.192	0.720
	$4_{32} \leftarrow 3_{31}$	14 230.253	0.616	$4_{31} \leftarrow 3_{30}$	14 230.249	0.611
	$5_{33} \leftarrow 4_{32}$	17 787.773	0.748	$5_{32} \leftarrow 4_{31}$	17 787.768	0.743
	$6_{34} \leftarrow 5_{33}$	21 345.264	0.867	$6_{33} \leftarrow 5_{32}$	21 345.258	0.860
	$7_{35} \leftarrow 6_{34}$	24 902.721	0.968	$7_{34} \leftarrow 6_{33}$	24 902.713	0.960
	$8_{36} \leftarrow 7_{35}$	28 460.137	1.049	$8_{35} \leftarrow 7_{34}$	28 460.128	1.041
	$9_{37} \leftarrow 8_{36}$	32 017.506	1.108	$9_{36} \leftarrow 8_{35}$	32 017.497	1.099
	$5_{42} \leftarrow 4_{41}$	17 865.063	0.616	$5_{41} \leftarrow 4_{40}$	17 865.063	0.616
	$6_{43} \leftarrow 5_{42}$	21 438.011	0.707	$6_{42} \leftarrow 5_{41}$	21 438.011	0.707
	$7_{44} \leftarrow 6_{43}$	25 010.923	0.781	$7_{43} \leftarrow 6_{42}$	25 010.923	0.781
	$8_{45} \leftarrow 7_{44}$	28 583.794	0.834	$8_{44} \leftarrow 7_{43}$	28 583.794	0.834
	$9_{46} \leftarrow 8_{45}$	32 156.617	0.864	$9_{45} \leftarrow 8_{44}$	32 156.617	0.864
$v_5^{\mathrm{b}} = 3$						
	$1_{01} \leftarrow 0_{00}$	3 532.712	-0.163			
	$2_{02} \leftarrow 1_{01}$	7 065.422	-0.329			
	$3_{03} \leftarrow 2_{02}$	10 598.127	-0.500			
	$4_{04} \leftarrow 3_{03}$	14 130.826	-0.679			
	$5_{05} \leftarrow 4_{04}$	17 663.516	-0.868			
	$6_{06} \leftarrow 5_{05}$	21 196.194	-1.071			
	$7_{07} \leftarrow 6_{06}$	24 728.860	-1.289			
	$8_{08} \leftarrow 7_{07}$	28 261.510	-1.525			
	$9_{09} \leftarrow 8_{08}$	31 794.142	-1.782			
	$3_{22} \leftarrow 2_{21}$	10 690.054	-0.478	$3_{21} \leftarrow 2_{20}$	10 690.066	-0.483
	$4_{23} \leftarrow 3_{22}$	14 253.363	-0.653	$4_{22} \leftarrow 3_{21}$	14 253.401	-0.657
	$5_{24} \leftarrow 4_{23}$	17 816.635	-0.842	$5_{23} \leftarrow 4_{22}$	17 816.718	-0.844
	$6_{25} \leftarrow 5_{24}$	21 379.862	-1.047	$6_{24} \leftarrow 5_{23}$	21 380.013	-1.046
	$7_{26} \leftarrow 6_{25}$	24 943.035	-1.272	$7_{25} \leftarrow 6_{24}$	24 943.281	-1.265
	$8_{27} \leftarrow 7_{26}$	28 506.144	-1.521	$8_{26} \leftarrow 7_{25}$	28 506.518	-1.505
	$9_{28} \leftarrow 8_{27}$	32 069.180	-1.797	$9_{27} \leftarrow 8_{26}$	32 069.720	-1.769

Tabelle E.4 Extrapolierte Übergangsfrequenzen von ^{81}BrCNO.

	$J'_{k_a k'_c} \leftarrow J''_{k_a k''_c}$	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
$v_5^{\mathrm{b}} = 0$						
	$1_{01} \leftarrow 0_{00}$	3 453.922	-0.415			
	$2_{02} \leftarrow 1_{01}$	6 907.837	-0.833			
	$3_{03} \leftarrow 2_{02}$	10 361.735	-1.255			
	$4_{04} \leftarrow 3_{03}$	13 815.609	-1.685			
	$5_{05} \leftarrow 4_{04}$	17 269.451	-2.124			
	$6_{06} \leftarrow 5_{05}$	20 723.253	-2.576			
	$7_{07} \leftarrow 6_{06}$	24 177.007	-3.041			
	$8_{08} \leftarrow 7_{07}$	27 630.704	-3.524			
	$9_{09} \leftarrow 8_{08}$	31 084.337	-4.026			
	$2_{12} \leftarrow 1_{11}$	6 923.739	0.298	$2_{11} \leftarrow 1_{10}$	6 945.507	-0.335
	$3_{13} \leftarrow 2_{12}$	10 385.593	0.441	$3_{12} \leftarrow 2_{11}$	10 418.242	-0.508

	$4_{14} \leftarrow 3_{13}$	13 847.428	0.576	$4_{13} \leftarrow 3_{12}$	13 890.956	-0.689
	$5_{15} \leftarrow 4_{14}$	17 309.237	0.702	$5_{14} \leftarrow 4_{13}$	17 363.640	-0.879
	$6_{16} \leftarrow 5_{15}$	20 771.015	0.816	$6_{15} \leftarrow 5_{14}$	20 836.288	-1.081
	$7_{17} \leftarrow 6_{16}$	24 232.754	0.915	$7_{16} \leftarrow 6_{15}$	24 308.893	-1.297
	$8_{18} \leftarrow 7_{17}$	27 694.449	0.998	$8_{17} \leftarrow 7_{16}$	27 781.447	-1.530
	$9_{19} \leftarrow 8_{18}$	31 156.094	1.061	$9_{18} \leftarrow 8_{17}$	31 253.943	-1.783
	$3_{22} \leftarrow 2_{21}$	10 447.119	0.511	$3_{21} \leftarrow 2_{20}$	10 447.095	0.486
	$4_{23} \leftarrow 3_{22}$	13 929.463	0.669	$4_{22} \leftarrow 3_{21}$	13 929.431	0.637
	$5_{24} \leftarrow 4_{23}$	17 411.781	0.818	$5_{23} \leftarrow 4_{22}$	17 411.742	0.778
	$6_{25} \leftarrow 5_{24}$	20 894.067	0.955	$6_{24} \leftarrow 5_{23}$	20 894.023	0.906
	$7_{26} \leftarrow 6_{25}$	24 376.315	1.076	$7_{25} \leftarrow 6_{24}$	24 376.266	1.021
	$8_{27} \leftarrow 7_{26}$	27 858.518	1.181	$8_{26} \leftarrow 7_{25}$	27 858.465	1.118
	$9_{28} \leftarrow 8_{27}$	31 340.671	1.266	$9_{27} \leftarrow 8_{26}$	31 340.615	1.196
	$4_{32} \leftarrow 3_{31}$	13 988.995	0.778	$4_{31} \leftarrow 3_{30}$	13 988.995	0.778
	$5_{33} \leftarrow 4_{32}$	17 486.198	0.954	$5_{32} \leftarrow 4_{31}$	17 486.198	0.954
	$6_{34} \leftarrow 5_{33}$	20 983.371	1.117	$6_{33} \leftarrow 5_{32}$	20 983.371	1.117
	$7_{35} \leftarrow 6_{34}$	24 480.506	1.266	$7_{34} \leftarrow 6_{33}$	24 480.506	1.266
	$8_{36} \leftarrow 7_{35}$	27 977.599	1.397	$8_{35} \leftarrow 7_{34}$	27 977.599	1.397
	$9_{37} \leftarrow 8_{36}$	31 474.643	1.509	$9_{36} \leftarrow 8_{35}$	31 474.643	1.509
	$5_{42} \leftarrow 4_{41}$	17 558.445	0.635	$5_{41} \leftarrow 4_{40}$	17 558.445	0.635
	$6_{43} \leftarrow 5_{42}$	21 070.068	0.734	$6_{42} \leftarrow 5_{41}$	21 070.068	0.734
	$7_{44} \leftarrow 6_{43}$	24 581.655	0.818	$7_{43} \leftarrow 6_{42}$	24 581.655	0.818
	$8_{45} \leftarrow 7_{44}$	28 093.199	0.885	$8_{44} \leftarrow 7_{43}$	28 093.199	0.885
	$9_{46} \leftarrow 8_{45}$	31 604.695	0.932	$9_{45} \leftarrow 8_{44}$	31 604.695	0.932
	$6_{52} \leftarrow 5_{51}$	21 154.116	-0.018	$6_{51} \leftarrow 5_{50}$	21 154.116	-0.018
	$7_{53} \leftarrow 6_{52}$	24 679.710	-0.060	$7_{52} \leftarrow 6_{51}$	24 679.710	-0.060
	$8_{54} \leftarrow 7_{53}$	28 205.263	-0.120	$8_{53} \leftarrow 7_{52}$	28 205.263	-0.120
	$9_{55} \leftarrow 8_{54}$	31 730.767	-0.200	$9_{54} \leftarrow 8_{53}$	31 730.767	-0.200
	$7_{62} \leftarrow 6_{61}$	24 774.977	-1.231	$7_{61} \leftarrow 6_{60}$	24 774.977	-1.231
	$8_{63} \leftarrow 7_{62}$	28 314.139	-1.459	$8_{62} \leftarrow 7_{61}$	28 314.139	-1.459
	$9_{64} \leftarrow 8_{63}$	31 853.252	-1.708	$9_{63} \leftarrow 8_{62}$	31 853.252	-1.708
	$8_{72} \leftarrow 7_{71}$	28 420.241	-2.999	$8_{71} \leftarrow 7_{70}$	28 420.241	-2.999
	$9_{73} \leftarrow 8_{72}$	31 972.615	-3.442	$9_{72} \leftarrow 8_{71}$	31 972.615	-3.442
	$9_{82} \leftarrow 8_{81}$	32 089.275	-5.293	$9_{81} \leftarrow 8_{80}$	32 089.275	-5.293
$v_5^{\mathrm{b}} = 1$						
	$1_{01} \leftarrow 0_{00}$	3 447.101	-0.376			
	$2_{02} \leftarrow 1_{01}$	6 894.197	-0.754			
	$3_{03} \leftarrow 2_{02}$	10 341.284	-1.137			
	$4_{04} \leftarrow 3_{03}$	13 788.356	-1.528			
	$5_{05} \leftarrow 4_{04}$	17 235.411	-1.928			
	$6_{06} \leftarrow 5_{05}$	20 682.442	-2.340			
	$7_{07} \leftarrow 6_{06}$	24 129.445	-2.767			
	$8_{08} \leftarrow 7_{07}$	27 576.416	-3.211			
	$9_{09} \leftarrow 8_{08}$	31 023.350	-3.675			
	$2_{12} \leftarrow 1_{11}$	6 937.519	0.298	$2_{11} \leftarrow 1_{10}$	6 961.584	0.069
	$3_{13} \leftarrow 2_{12}$	10 406.266	0.441	$3_{12} \leftarrow 2_{11}$	10 442.362	0.098
	$4_{14} \leftarrow 3_{13}$	13 874.999	0.577	$4_{13} \leftarrow 3_{12}$	13 923.124	0.118
	$5_{15} \leftarrow 4_{14}$	17 343.712	0.702	$5_{14} \leftarrow 4_{13}$	17 403.864	0.129
	$6_{16} \leftarrow 5_{15}$	20 812.401	0.815	$6_{15} \leftarrow 5_{14}$	20 884.576	0.127
	$7_{17} \leftarrow 6_{16}$	24 281.060	0.912	$7_{16} \leftarrow 6_{15}$	24 365.256	0.109
	$8_{18} \leftarrow 7_{17}$	27 749.686	0.992	$8_{17} \leftarrow 7_{16}$	27 845.897	0.074
	$9_{19} \leftarrow 8_{18}$	31 218.272	1.052	$9_{18} \leftarrow 8_{17}$	31 326.494	0.019
	$3_{22} \leftarrow 2_{21}$	10 484.359	0.760	$3_{21} \leftarrow 2_{20}$	10 484.358	0.757
	$4_{23} \leftarrow 3_{22}$	13 979.118	1.001	$4_{22} \leftarrow 3_{21}$	13 979.120	0.997
	$5_{24} \leftarrow 4_{23}$	17 473.853	1.232	$5_{23} \leftarrow 4_{22}$	17 473.859	1.228
	$6_{25} \leftarrow 5_{24}$	20 968.558	1.450	$6_{24} \leftarrow 5_{23}$	20 968.572	1.445
	$7_{26} \leftarrow 6_{25}$	24 463.228	1.652	$7_{25} \leftarrow 6_{24}$	24 463.253	1.647

	$8_{27} \leftarrow 7_{26}$	27 957.856	1.837	$8_{26} \leftarrow 7_{25}$	27 957.896	1.831
	$9_{28} \leftarrow 8_{27}$	31 452.437	2.001	$9_{27} \leftarrow 8_{26}$	31 452.497	1.994
	$4_{32} \leftarrow 3_{31}$	14 047.854	1.074	$4_{31} \leftarrow 3_{30}$	14 047.858	1.078
	$5_{33} \leftarrow 4_{32}$	17 559.775	1.323	$5_{32} \leftarrow 4_{31}$	17 559.780	1.328
	$6_{34} \leftarrow 5_{33}$	21 071.667	1.558	$6_{33} \leftarrow 5_{32}$	21 071.673	1.564
	$7_{35} \leftarrow 6_{34}$	24 583.525	1.778	$7_{34} \leftarrow 6_{33}$	24 583.532	1.785
	$8_{36} \leftarrow 7_{35}$	28 095.343	1.980	$8_{35} \leftarrow 7_{34}$	28 095.350	1.987
	$9_{37} \leftarrow 8_{36}$	31 607.115	2.160	$9_{36} \leftarrow 8_{35}$	31 607.123	2.168
	$5_{42} \leftarrow 4_{41}$	17 638.148	0.980	$5_{41} \leftarrow 4_{40}$	17 638.148	0.980
	$6_{43} \leftarrow 5_{42}$	21 165.714	1.147	$6_{42} \leftarrow 5_{41}$	21 165.714	1.147
	$7_{44} \leftarrow 6_{43}$	24 693.244	1.297	$7_{43} \leftarrow 6_{42}$	24 693.244	1.297
	$8_{45} \leftarrow 7_{44}$	28 220.735	1.429	$8_{44} \leftarrow 7_{43}$	28 220.735	1.429
	$9_{46} \leftarrow 8_{45}$	31 748.178	1.539	$9_{45} \leftarrow 8_{44}$	31 748.178	1.539
	$6_{52} \leftarrow 5_{51}$	21 253.993	0.426	$6_{51} \leftarrow 5_{50}$	21 253.993	0.426
	$7_{53} \leftarrow 6_{52}$	24 796.236	0.455	$7_{52} \leftarrow 6_{51}$	24 796.236	0.455
	$8_{54} \leftarrow 7_{53}$	28 338.437	0.466	$8_{53} \leftarrow 7_{52}$	28 338.437	0.466
	$9_{55} \leftarrow 8_{54}$	31 880.592	0.454	$9_{54} \leftarrow 8_{53}$	31 880.592	0.454
	$7_{62} \leftarrow 6_{61}$	24 894.466	-0.600	$7_{61} \leftarrow 6_{60}$	24 894.466	-0.600
	$8_{63} \leftarrow 7_{62}$	28 450.698	-0.741	$8_{62} \leftarrow 7_{61}$	28 450.698	-0.741
	$9_{64} \leftarrow 8_{63}$	32 006.882	-0.905	$9_{63} \leftarrow 8_{62}$	32 006.882	-0.905
$v_5^{\mathrm{b}} = 2$						
	$1_{01} \leftarrow 0_{00}$	3 476.551	-0.182			
	$2_{02} \leftarrow 1_{01}$	6 953.099	-0.366			
	$3_{03} \leftarrow 2_{02}$	10 429.642	-0.555			
	$4_{04} \leftarrow 3_{03}$	13 906.176	-0.752			
	$5_{05} \leftarrow 4_{04}$	17 382.699	-0.959			
	$6_{06} \leftarrow 5_{05}$	20 859.207	-1.178			
	$7_{07} \leftarrow 6_{06}$	24 335.698	-1.413			
	$8_{08} \leftarrow 7_{07}$	27 812.169	-1.665			
	$9_{09} \leftarrow 8_{08}$	31 288.618	-1.937			
	$2_{12} \leftarrow 1_{11}$	6 978.324	-0.013	$2_{11} \leftarrow 1_{10}$	7 007.700	0.041
	$3_{13} \leftarrow 2_{12}$	10 467.476	-0.026	$3_{12} \leftarrow 2_{11}$	10 511.539	0.055
	$4_{14} \leftarrow 3_{13}$	13 956.615	-0.047	$4_{13} \leftarrow 3_{12}$	14 015.365	0.060
	$5_{15} \leftarrow 4_{14}$	17 445.739	-0.079	$5_{14} \leftarrow 4_{13}$	17 519.172	0.056
	$6_{16} \leftarrow 5_{15}$	20 934.843	-0.123	$6_{15} \leftarrow 5_{14}$	21 022.958	0.038
	$7_{17} \leftarrow 6_{16}$	24 423.923	-0.183	$7_{16} \leftarrow 6_{15}$	24 526.716	0.004
	$8_{18} \leftarrow 7_{17}$	27 912.975	-0.261	$8_{17} \leftarrow 7_{16}$	28 030.443	-0.048
	$9_{19} \leftarrow 8_{18}$	31 401.996	-0.360	$9_{18} \leftarrow 8_{17}$	31 534.135	-0.121
	$3_{22} \leftarrow 2_{21}$	10 543.723	0.388	$3_{21} \leftarrow 2_{20}$	10 543.727	0.384
	$4_{23} \leftarrow 3_{22}$	14 058.267	0.504	$4_{22} \leftarrow 3_{21}$	14 058.281	0.500
	$5_{24} \leftarrow 4_{23}$	17 572.783	0.609	$5_{23} \leftarrow 4_{22}$	17 572.816	0.604
	$6_{25} \leftarrow 5_{24}$	21 087.267	0.700	$6_{24} \leftarrow 5_{23}$	21 087.328	0.696
	$7_{26} \leftarrow 6_{25}$	24 601.710	0.774	$7_{25} \leftarrow 6_{24}$	24 601.811	0.771
	$8_{27} \leftarrow 7_{26}$	28 116.107	0.829	$8_{26} \leftarrow 7_{25}$	28 116.262	0.828
	$9_{28} \leftarrow 8_{27}$	31 630.451	0.862	$9_{27} \leftarrow 8_{26}$	31 630.675	0.863
	$4_{32} \leftarrow 3_{31}$	14 124.186	0.662	$4_{31} \leftarrow 3_{30}$	14 124.182	0.658
	$5_{33} \leftarrow 4_{32}$	17 655.190	0.806	$5_{32} \leftarrow 4_{31}$	17 655.184	0.801
	$6_{34} \leftarrow 5_{33}$	21 186.165	0.937	$6_{33} \leftarrow 5_{32}$	21 186.159	0.930
	$7_{35} \leftarrow 6_{34}$	24 717.106	1.050	$7_{34} \leftarrow 6_{33}$	24 717.099	1.043
	$8_{36} \leftarrow 7_{35}$	28 248.007	1.145	$8_{35} \leftarrow 7_{34}$	28 247.999	1.136
	$9_{37} \leftarrow 8_{36}$	31 778.863	1.216	$9_{36} \leftarrow 8_{35}$	31 778.854	1.207
	$5_{42} \leftarrow 4_{41}$	17 731.893	0.661	$5_{41} \leftarrow 4_{40}$	17 731.893	0.661
	$6_{43} \leftarrow 5_{42}$	21 278.207	0.761	$6_{42} \leftarrow 5_{41}$	21 278.207	0.761
	$7_{44} \leftarrow 6_{43}$	24 824.487	0.845	$7_{43} \leftarrow 6_{42}$	24 824.487	0.845
	$8_{45} \leftarrow 7_{44}$	28 370.726	0.908	$8_{44} \leftarrow 7_{43}$	28 370.726	0.908
	$9_{46} \leftarrow 8_{45}$	31 916.918	0.949	$9_{45} \leftarrow 8_{44}$	31 916.918	0.949
$v_5^{\mathrm{b}} = 3$						
	$1_{01} \leftarrow 0_{00}$	3 506.374	-0.142			

$2_{02} \leftarrow 1_{01}$	7 012.746	-0.287			
$3_{03} \leftarrow 2_{02}$	10 519.114	-0.438			
$4_{04} \leftarrow 3_{03}$	14 025.475	-0.595			
$5_{05} \leftarrow 4_{04}$	17 531.827	-0.763			
$6_{06} \leftarrow 5_{05}$	21 038.168	-0.944			
$7_{07} \leftarrow 6_{06}$	24 544.496	-1.141			
$8_{08} \leftarrow 7_{07}$	28 050.808	-1.355			
$9_{09} \leftarrow 8_{08}$	31 557.103	-1.590			
$3_{22} \leftarrow 2_{21}$	10 610.275	-0.522	$3_{21} \leftarrow 2_{20}$	10 610.288	-0.525
$4_{23} \leftarrow 3_{22}$	14 146.992	-0.711	$4_{22} \leftarrow 3_{21}$	14 147.031	-0.714
$5_{24} \leftarrow 4_{23}$	17 683.673	-0.914	$5_{23} \leftarrow 4_{22}$	17 683.755	-0.915
$6_{25} \leftarrow 5_{24}$	21 220.309	-1.133	$6_{24} \leftarrow 5_{23}$	21 220.458	-1.130
$7_{26} \leftarrow 6_{25}$	24 756.892	-1.372	$7_{25} \leftarrow 6_{24}$	24 757.134	-1.363
$8_{27} \leftarrow 7_{26}$	28 293.412	-1.635	$8_{26} \leftarrow 7_{25}$	28 293.779	-1.617
$9_{28} \leftarrow 8_{27}$	31 829.861	-1.925	$9_{27} \leftarrow 8_{26}$	31 830.389	-1.895

Tabelle E.5 Extrapolierte Übergangsfrequenzen von ^{35}ClCNO.

	$J'_{k_a k'_c} \leftarrow J''_{k_a k''_c}$	$\underline{\nu_{\mathrm{calc}}}$ MHz	$\underline{\nu_{\mathrm{calc}} - \nu_{\mathrm{srb}}}$ MHz	$J'_{k_a k'_c} \leftarrow J''_{k_a k''_c}$	$\underline{\nu_{\mathrm{calc}}}$ MHz	$\underline{\nu_{\mathrm{calc}} - \nu_{\mathrm{srb}}}$ MHz
$v_5^{\mathrm{b}} = 0$						
	$1_{01} \leftarrow 0_{00}$	5 145.561	-0.626			
	$2_{02} \leftarrow 1_{01}$	10 291.108	-1.257			
	$3_{03} \leftarrow 2_{02}$	15 436.625	-1.897			
	$4_{04} \leftarrow 3_{03}$	20 582.098	-2.551			
	$5_{05} \leftarrow 4_{04}$	25 727.513	-3.224			
	$6_{06} \leftarrow 5_{05}$	30 872.855	-3.920			
	$7_{07} \leftarrow 6_{06}$	36 018.109	-4.644			
	$8_{08} \leftarrow 7_{07}$	41 163.260	-5.400			
	$9_{09} \leftarrow 8_{08}$	46 308.295	-6.194			
	$2_{12} \leftarrow 1_{11}$	10 305.175	0.853	$2_{11} \leftarrow 1_{10}$	10 347.087	-0.795
	$3_{13} \leftarrow 2_{12}$	15 457.734	1.268	$3_{12} \leftarrow 2_{11}$	15 520.597	-1.204
	$4_{14} \leftarrow 3_{13}$	20 610.259	1.669	$4_{13} \leftarrow 3_{12}$	20 694.067	-1.627
	$5_{15} \leftarrow 4_{14}$	25 762.739	2.051	$5_{14} \leftarrow 4_{13}$	25 867.483	-2.069
	$6_{16} \leftarrow 5_{15}$	30 915.162	2.409	$6_{15} \leftarrow 5_{14}$	31 040.833	-2.534
	$7_{17} \leftarrow 6_{16}$	36 067.517	2.740	$7_{16} \leftarrow 6_{15}$	36 214.102	-3.026
	$8_{18} \leftarrow 7_{17}$	41 219.794	3.037	$8_{17} \leftarrow 7_{16}$	41 387.277	-3.551
	$9_{19} \leftarrow 8_{18}$	46 371.979	3.297	$9_{18} \leftarrow 8_{17}$	46 560.346	-4.113
	$3_{22} \leftarrow 2_{21}$	15 550.567	0.827	$3_{21} \leftarrow 2_{20}$	15 550.574	0.832
	$4_{23} \leftarrow 3_{22}$	20 734.035	1.081	$4_{22} \leftarrow 3_{21}$	20 734.047	1.087
	$5_{24} \leftarrow 4_{23}$	25 917.458	1.316	$5_{23} \leftarrow 4_{22}$	25 917.475	1.323
	$6_{25} \leftarrow 5_{24}$	31 100.823	1.527	$6_{24} \leftarrow 5_{23}$	31 100.847	1.535
	$7_{26} \leftarrow 6_{25}$	36 284.119	1.711	$7_{25} \leftarrow 6_{24}$	36 284.153	1.718
	$8_{27} \leftarrow 7_{26}$	41 467.335	1.861	$8_{26} \leftarrow 7_{25}$	41 467.381	1.868
	$9_{28} \leftarrow 8_{27}$	46 650.458	1.974	$9_{27} \leftarrow 8_{26}$	46 650.519	1.979
	$4_{32} \leftarrow 3_{31}$	20 815.789	1.144	$4_{31} \leftarrow 3_{30}$	20 815.789	1.144
	$5_{33} \leftarrow 4_{32}$	26 019.654	1.394	$5_{32} \leftarrow 4_{31}$	26 019.654	1.394
	$6_{34} \leftarrow 5_{33}$	31 223.462	1.620	$6_{33} \leftarrow 5_{32}$	31 223.462	1.620
	$7_{35} \leftarrow 6_{34}$	36 427.205	1.817	$7_{34} \leftarrow 6_{33}$	36 427.205	1.817
	$8_{36} \leftarrow 7_{35}$	41 630.869	1.981	$8_{35} \leftarrow 7_{34}$	41 630.869	1.981
	$9_{37} \leftarrow 8_{36}$	46 834.445	2.106	$9_{36} \leftarrow 8_{35}$	46 834.445	2.106
	$5_{42} \leftarrow 4_{41}$	26 119.211	0.642	$5_{41} \leftarrow 4_{40}$	26 119.211	0.642
	$6_{43} \leftarrow 5_{42}$	31 342.932	0.717	$6_{42} \leftarrow 5_{41}$	31 342.932	0.717
	$7_{44} \leftarrow 6_{43}$	36 566.588	0.762	$7_{43} \leftarrow 6_{42}$	36 566.588	0.762
	$8_{45} \leftarrow 7_{44}$	41 790.166	0.774	$8_{44} \leftarrow 7_{43}$	41 790.166	0.774
	$9_{46} \leftarrow 8_{45}$	47 013.657	0.746	$9_{45} \leftarrow 8_{44}$	47 013.657	0.746
	$6_{52} \leftarrow 5_{51}$	31 458.917	-0.839	$6_{51} \leftarrow 5_{50}$	31 458.917	-0.839

	$7_{53} \leftarrow 6_{52}$	36 701.903	-1.053	$7_{52} \leftarrow 6_{51}$	36 701.903	-1.053
	$8_{54} \leftarrow 7_{53}$	41 944.813	-1.303	$8_{53} \leftarrow 7_{52}$	41 944.813	-1.303
	$9_{55} \leftarrow 8_{54}$	47 187.635	-1.592	$9_{54} \leftarrow 8_{53}$	47 187.635	-1.592
	$7_{62} \leftarrow 6_{61}$	36 833.452	-3.357	$7_{61} \leftarrow 6_{60}$	36 833.452	-3.357
	$8_{63} \leftarrow 7_{62}$	42 095.154	-3.938	$8_{62} \leftarrow 7_{61}$	42 095.154	-3.938
	$9_{64} \leftarrow 8_{63}$	47 356.767	-4.559	$9_{63} \leftarrow 8_{62}$	47 356.767	-4.559
	$8_{72} \leftarrow 7_{71}$	42 241.688	-6.900	$8_{71} \leftarrow 7_{70}$	42 241.688	-6.900
	$9_{73} \leftarrow 8_{72}$	47 521.616	-7.895	$9_{72} \leftarrow 8_{71}$	47 521.616	-7.895
	$9_{82} \leftarrow 8_{81}$	47 682.726	-11.402	$9_{81} \leftarrow 8_{80}$	47 682.726	-11.402
$v_5^{\mathrm{b}} = 1$						
	$1_{01} \leftarrow 0_{00}$	5 130.823	-1.197			
	$2_{02} \leftarrow 1_{01}$	10 261.637	-2.400			
	$3_{03} \leftarrow 2_{02}$	15 392.434	-3.611			
	$4_{04} \leftarrow 3_{03}$	20 523.204	-4.837			
	$5_{05} \leftarrow 4_{04}$	25 653.938	-6.082			
	$6_{06} \leftarrow 5_{05}$	30 784.629	-7.351			
	$7_{07} \leftarrow 6_{06}$	35 915.266	-8.649			
	$8_{08} \leftarrow 7_{07}$	41 045.841	-9.979			
	$9_{09} \leftarrow 8_{08}$	46 176.346	-11.348			
	$2_{12} \leftarrow 1_{11}$	10 318.053	0.160	$2_{11} \leftarrow 1_{10}$	10 363.624	-0.524
	$3_{13} \leftarrow 2_{12}$	15 477.058	0.228	$3_{12} \leftarrow 2_{11}$	15 545.410	-0.798
	$4_{14} \leftarrow 3_{13}$	20 636.036	0.281	$4_{13} \leftarrow 3_{12}$	20 727.166	-1.087
	$5_{15} \leftarrow 4_{14}$	25 794.979	0.314	$5_{14} \leftarrow 4_{13}$	25 908.880	-1.396
	$6_{16} \leftarrow 5_{15}$	30 953.879	0.323	$6_{15} \leftarrow 5_{14}$	31 090.544	-1.730
	$7_{17} \leftarrow 6_{16}$	36 112.725	0.303	$7_{16} \leftarrow 6_{15}$	36 272.147	-2.093
	$8_{18} \leftarrow 7_{17}$	41 271.510	0.248	$8_{17} \leftarrow 7_{16}$	41 453.678	-2.491
	$9_{19} \leftarrow 8_{18}$	46 430.224	0.154	$9_{18} \leftarrow 8_{17}$	46 635.128	-2.929
	$3_{22} \leftarrow 2_{21}$	15 596.350	1.116	$3_{21} \leftarrow 2_{20}$	15 596.356	1.116
	$4_{23} \leftarrow 3_{22}$	20 795.081	1.465	$4_{22} \leftarrow 3_{21}$	20 795.095	1.465
	$5_{24} \leftarrow 4_{23}$	25 993.767	1.793	$5_{23} \leftarrow 4_{22}$	25 993.796	1.794
	$6_{25} \leftarrow 5_{24}$	31 192.397	2.096	$6_{24} \leftarrow 5_{23}$	31 192.449	2.097
	$7_{26} \leftarrow 6_{25}$	36 390.959	2.369	$7_{25} \leftarrow 6_{24}$	36 391.042	2.371
	$8_{27} \leftarrow 7_{26}$	41 589.443	2.607	$8_{26} \leftarrow 7_{25}$	41 589.568	2.609
	$9_{28} \leftarrow 8_{27}$	46 787.837	2.804	$9_{27} \leftarrow 8_{26}$	46 788.016	2.808
	$4_{32} \leftarrow 3_{31}$	20 891.864	2.078	$4_{31} \leftarrow 3_{30}$	20 891.864	2.078
	$5_{33} \leftarrow 4_{32}$	26 114.751	2.559	$5_{32} \leftarrow 4_{31}$	26 114.751	2.559
	$6_{34} \leftarrow 5_{33}$	31 337.585	3.014	$6_{33} \leftarrow 5_{32}$	31 337.585	3.014
	$7_{35} \leftarrow 6_{34}$	36 560.356	3.439	$7_{34} \leftarrow 6_{33}$	36 560.356	3.439
	$8_{36} \leftarrow 7_{35}$	41 783.053	3.827	$8_{35} \leftarrow 7_{34}$	41 783.053	3.827
	$9_{37} \leftarrow 8_{36}$	47 005.666	4.175	$9_{36} \leftarrow 8_{35}$	47 005.666	4.175
	$5_{42} \leftarrow 4_{41}$	26 224.508	2.305	$5_{41} \leftarrow 4_{40}$	26 224.508	2.305
	$6_{43} \leftarrow 5_{42}$	31 469.292	2.708	$6_{42} \leftarrow 5_{41}$	31 469.292	2.708
	$7_{44} \leftarrow 6_{43}$	36 714.012	3.080	$7_{43} \leftarrow 6_{42}$	36 714.012	3.080
	$8_{45} \leftarrow 7_{44}$	41 958.657	3.415	$8_{44} \leftarrow 7_{43}$	41 958.657	3.415
	$9_{46} \leftarrow 8_{45}$	47 203.216	3.709	$9_{45} \leftarrow 8_{44}$	47 203.216	3.709
	$6_{52} \leftarrow 5_{51}$	31 592.316	1.529	$6_{51} \leftarrow 5_{50}$	31 592.316	1.529
	$7_{53} \leftarrow 6_{52}$	36 857.538	1.702	$7_{52} \leftarrow 6_{51}$	36 857.538	1.702
	$8_{54} \leftarrow 7_{53}$	42 122.683	1.839	$8_{53} \leftarrow 7_{52}$	42 122.683	1.839
	$9_{55} \leftarrow 8_{54}$	47 387.742	1.933	$9_{54} \leftarrow 8_{53}$	47 387.742	1.933
	$7_{62} \leftarrow 6_{61}$	36 993.807	-0.419	$7_{61} \leftarrow 6_{60}$	36 993.807	-0.419
	$8_{63} \leftarrow 7_{62}$	42 278.416	-0.588	$8_{62} \leftarrow 7_{61}$	42 278.416	-0.588
	$9_{64} \leftarrow 8_{63}$	47 562.936	-0.801	$9_{63} \leftarrow 8_{62}$	47 562.936	-0.801
	$8_{72} \leftarrow 7_{71}$	42 427.775	-3.664	$8_{71} \leftarrow 7_{70}$	42 427.775	-3.664
	$9_{73} \leftarrow 8_{72}$	47 730.960	-4.265	$9_{72} \leftarrow 8_{71}$	47 730.960	-4.265
	$9_{82} \leftarrow 8_{81}$	47 893.201	-8.313	$9_{81} \leftarrow 8_{80}$	47 893.201	-8.313
$v_5^{\mathrm{b}} = 2$						
	$1_{01} \leftarrow 0_{00}$	5 170.883	-0.430			
	$2_{02} \leftarrow 1_{01}$	10 341.761	-0.865			

	$3_{03} \leftarrow 2_{02}$	15 512.630	-1.309			
	$4_{04} \leftarrow 3_{03}$	20 683.485	-1.769			
	$5_{05} \leftarrow 4_{04}$	25 854.321	-2.247			
	$6_{06} \leftarrow 5_{05}$	31 025.133	-2.751			
	$7_{07} \leftarrow 6_{06}$	36 195.917	-3.283			
	$8_{08} \leftarrow 7_{07}$	41 366.669	-3.850			
	$9_{09} \leftarrow 8_{08}$	46 537.383	-4.455			
	$2_{12} \leftarrow 1_{11}$	10 371.843	0.006	$2_{11} \leftarrow 1_{10}$	10 427.191	0.083
	$3_{13} \leftarrow 2_{12}$	15 557.747	-0.003	$3_{12} \leftarrow 2_{11}$	15 640.766	0.112
	$4_{14} \leftarrow 3_{13}$	20 743.630	-0.028	$4_{13} \leftarrow 3_{12}$	20 854.317	0.126
	$5_{15} \leftarrow 4_{14}$	25 929.485	-0.073	$5_{14} \leftarrow 4_{13}$	26 067.836	0.118
	$6_{16} \leftarrow 5_{15}$	31 115.305	-0.143	$6_{15} \leftarrow 5_{14}$	31 281.315	0.085
	$7_{17} \leftarrow 6_{16}$	36 301.084	-0.244	$7_{16} \leftarrow 6_{15}$	36 494.746	0.022
	$8_{18} \leftarrow 7_{17}$	41 486.813	-0.379	$8_{17} \leftarrow 7_{16}$	41 708.120	-0.078
	$9_{19} \leftarrow 8_{18}$	46 672.487	-0.555	$9_{18} \leftarrow 8_{17}$	46 921.431	-0.219
	$3_{22} \leftarrow 2_{21}$	15 676.140	0.820	$3_{21} \leftarrow 2_{20}$	15 676.161	0.821
	$4_{23} \leftarrow 3_{22}$	20 901.456	1.068	$4_{22} \leftarrow 3_{21}$	20 901.508	1.070
	$5_{24} \leftarrow 4_{23}$	26 126.718	1.293	$5_{23} \leftarrow 4_{22}$	26 126.823	1.298
	$6_{25} \leftarrow 5_{24}$	31 351.913	1.491	$6_{24} \leftarrow 5_{23}$	31 352.095	1.500
	$7_{26} \leftarrow 6_{25}$	36 577.025	1.655	$7_{25} \leftarrow 6_{24}$	36 577.317	1.670
	$8_{27} \leftarrow 7_{26}$	41 802.042	1.780	$8_{26} \leftarrow 7_{25}$	41 802.481	1.803
	$9_{28} \leftarrow 8_{27}$	47 026.950	1.861	$9_{27} \leftarrow 8_{26}$	47 027.578	1.894
	$4_{32} \leftarrow 3_{31}$	20 992.395	-0.372	$4_{31} \leftarrow 3_{30}$	20 992.392	-0.376
	$5_{33} \leftarrow 4_{32}$	26 240.420	-0.500	$5_{32} \leftarrow 4_{31}$	26 240.415	-0.505
	$6_{34} \leftarrow 5_{33}$	31 488.395	-0.651	$6_{33} \leftarrow 5_{32}$	31 488.389	-0.657
	$7_{35} \leftarrow 6_{34}$	36 736.311	-0.831	$7_{34} \leftarrow 6_{33}$	36 736.304	-0.838
	$8_{36} \leftarrow 7_{35}$	41 984.157	-1.043	$8_{35} \leftarrow 7_{34}$	41 984.149	-1.051
	$9_{37} \leftarrow 8_{36}$	47 231.924	-1.293	$9_{36} \leftarrow 8_{35}$	47 231.915	-1.302
	$5_{42} \leftarrow 4_{41}$	26 351.234	2.764	$5_{41} \leftarrow 4_{40}$	26 351.234	2.764
	$6_{43} \leftarrow 5_{42}$	31 621.361	3.255	$6_{42} \leftarrow 5_{41}$	31 621.361	3.255
	$7_{44} \leftarrow 6_{43}$	36 891.423	3.712	$7_{43} \leftarrow 6_{42}$	36 891.423	3.712
	$8_{45} \leftarrow 7_{44}$	42 161.409	4.130	$8_{44} \leftarrow 7_{43}$	42 161.409	4.130
	$9_{46} \leftarrow 8_{45}$	47 431.307	4.502	$9_{45} \leftarrow 8_{44}$	47 431.307	4.502
	$6_{52} \leftarrow 5_{51}$	31 742.448	2.152	$6_{51} \leftarrow 5_{50}$	31 742.448	2.152
	$7_{53} \leftarrow 6_{52}$	37 032.687	2.422	$7_{52} \leftarrow 6_{51}$	37 032.687	2.422
	$8_{54} \leftarrow 7_{53}$	42 322.848	2.651	$8_{53} \leftarrow 7_{52}$	42 322.848	2.651
	$9_{55} \leftarrow 8_{54}$	47 612.919	2.833	$9_{54} \leftarrow 8_{53}$	47 612.919	2.833
	$7_{62} \leftarrow 6_{61}$	37 168.052	1.360	$7_{61} \leftarrow 6_{60}$	37 168.052	1.360
	$8_{63} \leftarrow 7_{62}$	42 477.545	1.434	$8_{62} \leftarrow 7_{61}$	42 477.545	1.434
	$9_{64} \leftarrow 8_{63}$	47 786.946	1.459	$9_{63} \leftarrow 8_{62}$	47 786.946	1.459
	$8_{72} \leftarrow 7_{71}$	42 624.433	-2.003	$8_{71} \leftarrow 7_{70}$	42 624.433	-2.003
	$9_{73} \leftarrow 8_{72}$	47 952.191	-2.410	$9_{72} \leftarrow 8_{71}$	47 952.191	-2.410
	$9_{82} \leftarrow 8_{81}$	48 111.324	-7.203	$9_{81} \leftarrow 8_{80}$	48 111.324	-7.203
$v_5^{\mathrm{b}} = 3$						
	$1_{01} \leftarrow 0_{00}$	5 213.097	-0.139			
	$2_{02} \leftarrow 1_{01}$	10 426.190	-0.284			
	$3_{03} \leftarrow 2_{02}$	15 639.279	-0.439			
	$4_{04} \leftarrow 3_{03}$	20 852.361	-0.609			
	$5_{05} \leftarrow 4_{04}$	26 065.432	-0.799			
	$6_{06} \leftarrow 5_{05}$	31 278.491	-1.015			
	$7_{07} \leftarrow 6_{06}$	36 491.535	-1.261			
	$8_{08} \leftarrow 7_{07}$	41 704.561	-1.543			
	$9_{09} \leftarrow 8_{08}$	46 917.568	-1.866			
	$2_{12} \leftarrow 1_{11}$	10 434.977	-0.574	$2_{11} \leftarrow 1_{10}$	10 501.667	0.153
	$3_{13} \leftarrow 2_{12}$	15 652.451	-0.874	$3_{12} \leftarrow 2_{11}$	15 752.482	0.215
	$4_{14} \leftarrow 3_{13}$	20 869.907	-1.190	$4_{13} \leftarrow 3_{12}$	21 003.276	0.261
	$5_{15} \leftarrow 4_{14}$	26 087.340	-1.528	$5_{14} \leftarrow 4_{13}$	26 254.041	0.284
	$6_{16} \leftarrow 5_{15}$	31 304.742	-1.891	$6_{15} \leftarrow 5_{14}$	31 504.770	0.279

$7_{17} \leftarrow 6_{16}$	36 522.109	-2.286	$7_{16} \leftarrow 6_{15}$	36 755.456	0.241
$8_{18} \leftarrow 7_{17}$	41 739.434	-2.718	$8_{17} \leftarrow 7_{16}$	42 006.091	0.163
$9_{19} \leftarrow 8_{18}$	46 956.712	-3.192	$9_{18} \leftarrow 8_{17}$	47 256.669	0.041
$3_{22} \leftarrow 2_{21}$	15 766.056	-1.629	$3_{21} \leftarrow 2_{20}$	15 766.095	-1.633
$4_{23} \leftarrow 3_{22}$	21 021.326	-2.196	$4_{22} \leftarrow 3_{21}$	21 021.434	-2.196
$5_{24} \leftarrow 4_{23}$	26 276.525	-2.783	$5_{23} \leftarrow 4_{22}$	26 276.748	-2.776
$6_{25} \leftarrow 5_{24}$	31 531.636	-3.395	$6_{24} \leftarrow 5_{23}$	31 532.034	-3.375
$7_{26} \leftarrow 6_{25}$	36 786.641	-4.038	$7_{25} \leftarrow 6_{24}$	36 787.285	-3.999
$8_{27} \leftarrow 7_{26}$	42 041.521	-4.716	$8_{26} \leftarrow 7_{25}$	42 042.495	-4.652
$9_{28} \leftarrow 8_{27}$	47 296.260	-5.436	$9_{27} \leftarrow 8_{26}$	47 297.658	-5.337
$4_{32} \leftarrow 3_{31}$	21 109.498	1.919	$4_{31} \leftarrow 3_{30}$	21 109.488	1.910
$5_{33} \leftarrow 4_{32}$	26 386.784	2.354	$5_{32} \leftarrow 4_{31}$	26 386.772	2.342
$6_{34} \leftarrow 5_{33}$	31 664.011	2.758	$6_{33} \leftarrow 5_{32}$	31 663.996	2.743
$7_{35} \leftarrow 6_{34}$	36 941.166	3.126	$7_{34} \leftarrow 6_{33}$	36 941.150	3.109
$8_{36} \leftarrow 7_{35}$	42 218.239	3.451	$8_{35} \leftarrow 7_{34}$	42 218.221	3.432
$9_{37} \leftarrow 8_{36}$	47 495.217	3.728	$9_{36} \leftarrow 8_{35}$	47 495.198	3.707
$5_{42} \leftarrow 4_{41}$	26 483.469	-1.894	$5_{41} \leftarrow 4_{40}$	26 483.469	-1.894
$6_{43} \leftarrow 5_{42}$	31 780.024	-2.351	$6_{42} \leftarrow 5_{41}$	31 780.024	-2.351
$7_{44} \leftarrow 6_{43}$	37 076.504	-2.851	$7_{43} \leftarrow 6_{42}$	37 076.504	-2.851
$8_{45} \leftarrow 7_{44}$	42 372.895	-3.401	$8_{44} \leftarrow 7_{43}$	42 372.895	-3.401
$9_{46} \leftarrow 8_{45}$	47 669.185	-4.009	$9_{45} \leftarrow 8_{44}$	47 669.185	-4.009

Tabelle E.6 Extrapolierte Übergangsfrequenzen von ^{37}ClCNO.

$J'_{k_a k'_c} \leftarrow J''_{k_a k''_c}$	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
$v_5^{\mathrm{b}} = 0$					
$1_{01} \leftarrow 0_{00}$	5 022.890	-0.613			
$2_{02} \leftarrow 1_{01}$	10 045.766	-1.231			
$3_{03} \leftarrow 2_{02}$	15 068.614	-1.857			
$4_{04} \leftarrow 3_{03}$	20 091.420	-2.497			
$5_{05} \leftarrow 4_{04}$	25 114.170	-3.155			
$6_{06} \leftarrow 5_{05}$	30 136.850	-3.835			
$7_{07} \leftarrow 6_{06}$	35 159.446	-4.541			
$8_{08} \leftarrow 7_{07}$	40 181.944	-5.279			
$9_{09} \leftarrow 8_{08}$	45 204.330	-6.052			
$2_{12} \leftarrow 1_{11}$	10 059.863	0.931	$2_{11} \leftarrow 1_{10}$	10 099.980	-0.683
$3_{13} \leftarrow 2_{12}$	15 089.767	1.386	$3_{12} \leftarrow 2_{11}$	15 149.937	-1.035
$4_{14} \leftarrow 3_{13}$	20 119.638	1.827	$4_{13} \leftarrow 3_{12}$	20 199.857	-1.401
$5_{15} \leftarrow 4_{14}$	25 149.467	2.250	$5_{14} \leftarrow 4_{13}$	25 249.725	-1.784
$6_{16} \leftarrow 5_{15}$	30 179.240	2.650	$6_{15} \leftarrow 5_{14}$	30 299.529	-2.190
$7_{17} \leftarrow 6_{16}$	35 208.949	3.024	$7_{16} \leftarrow 6_{15}$	35 349.256	-2.622
$8_{18} \leftarrow 7_{17}$	40 238.582	3.366	$8_{17} \leftarrow 7_{16}$	40 398.894	-3.085
$9_{19} \leftarrow 8_{18}$	45 268.128	3.672	$9_{18} \leftarrow 8_{17}$	45 448.429	-3.584
$3_{22} \leftarrow 2_{21}$	15 179.817	1.042	$3_{21} \leftarrow 2_{20}$	15 179.826	1.050
$4_{23} \leftarrow 3_{22}$	20 239.704	1.368	$4_{22} \leftarrow 3_{21}$	20 239.718	1.378
$5_{24} \leftarrow 4_{23}$	25 299.547	1.677	$5_{23} \leftarrow 4_{22}$	25 299.567	1.688
$6_{25} \leftarrow 5_{24}$	30 359.336	1.963	$6_{24} \leftarrow 5_{23}$	30 359.363	1.975
$7_{26} \leftarrow 6_{25}$	35 419.058	2.222	$7_{25} \leftarrow 6_{24}$	35 419.095	2.235
$8_{27} \leftarrow 7_{26}$	40 478.703	2.449	$8_{26} \leftarrow 7_{25}$	40 478.752	2.462
$9_{28} \leftarrow 8_{27}$	45 538.261	2.641	$9_{27} \leftarrow 8_{26}$	45 538.324	2.652
$4_{32} \leftarrow 3_{31}$	20 319.580	1.516	$4_{31} \leftarrow 3_{30}$	20 319.580	1.516
$5_{33} \leftarrow 4_{32}$	25 399.396	1.860	$5_{32} \leftarrow 4_{31}$	25 399.396	1.860
$6_{34} \leftarrow 5_{33}$	30 479.158	2.182	$6_{33} \leftarrow 5_{32}$	30 479.158	2.182
$7_{35} \leftarrow 6_{34}$	35 558.857	2.476	$7_{34} \leftarrow 6_{33}$	35 558.857	2.476
$8_{36} \leftarrow 7_{35}$	40 638.481	2.738	$8_{35} \leftarrow 7_{34}$	40 638.481	2.738
$9_{37} \leftarrow 8_{36}$	45 718.020	2.963	$9_{36} \leftarrow 8_{35}$	45 718.020	2.963

	$5_{42} \leftarrow 4_{41}$	25 496.686	1.211	$5_{41} \leftarrow 4_{40}$	25 496.686	1.211
	$6_{43} \leftarrow 5_{42}$	30 595.907	1.402	$6_{42} \leftarrow 5_{41}$	30 595.907	1.402
	$7_{44} \leftarrow 6_{43}$	35 695.066	1.565	$7_{43} \leftarrow 6_{42}$	35 695.066	1.565
	$8_{45} \leftarrow 7_{44}$	40 794.151	1.696	$8_{44} \leftarrow 7_{43}$	40 794.151	1.696
	$9_{46} \leftarrow 8_{45}$	45 893.151	1.789	$9_{45} \leftarrow 8_{44}$	45 893.151	1.789
	$6_{52} \leftarrow 5_{51}$	30 709.262	-0.031	$6_{51} \leftarrow 5_{50}$	30 709.262	-0.031
	$7_{53} \leftarrow 6_{52}$	35 827.314	-0.107	$7_{52} \leftarrow 6_{51}$	35 827.314	-0.107
	$8_{54} \leftarrow 7_{53}$	40 945.292	-0.217	$8_{53} \leftarrow 7_{52}$	40 945.292	-0.217
	$9_{55} \leftarrow 8_{54}$	46 063.186	-0.365	$9_{54} \leftarrow 8_{53}$	46 063.186	-0.365
	$7_{62} \leftarrow 6_{61}$	35 955.893	-2.266	$7_{61} \leftarrow 6_{60}$	35 955.893	-2.266
	$8_{63} \leftarrow 7_{62}$	41 092.238	-2.686	$8_{62} \leftarrow 7_{61}$	41 092.238	-2.686
	$9_{64} \leftarrow 8_{63}$	46 228.499	-3.145	$9_{63} \leftarrow 8_{62}$	46 228.499	-3.145
	$8_{72} \leftarrow 7_{71}$	41 235.469	-5.487	$8_{71} \leftarrow 7_{70}$	41 235.469	-5.487
	$9_{73} \leftarrow 8_{72}$	46 389.631	-6.299	$9_{72} \leftarrow 8_{71}$	46 389.631	-6.299
	$9_{82} \leftarrow 8_{81}$	46 547.109	-9.635	$9_{81} \leftarrow 8_{80}$	46 547.109	-9.635
$v_5^{\mathrm{b}} = 1$						
	$1_{01} \leftarrow 0_{00}$	5 008.450	-1.037			
	$2_{02} \leftarrow 1_{01}$	10 016.892	-2.079			
	$3_{03} \leftarrow 2_{02}$	15 025.317	-3.131			
	$4_{04} \leftarrow 3_{03}$	20 033.717	-4.195			
	$5_{05} \leftarrow 4_{04}$	25 042.082	-5.278			
	$6_{06} \leftarrow 5_{05}$	30 050.405	-6.384			
	$7_{07} \leftarrow 6_{06}$	35 058.678	-7.516			
	$8_{08} \leftarrow 7_{07}$	40 066.890	-8.681			
	$9_{09} \leftarrow 8_{08}$	45 075.035	-9.882			
	$2_{12} \leftarrow 1_{11}$	10 072.484	0.416	$2_{11} \leftarrow 1_{10}$	10 116.094	-0.258
	$3_{13} \leftarrow 2_{12}$	15 108.705	0.613	$3_{12} \leftarrow 2_{11}$	15 174.117	-0.399
	$4_{14} \leftarrow 3_{13}$	20 144.901	0.795	$4_{13} \leftarrow 3_{12}$	20 232.110	-0.554
	$5_{15} \leftarrow 4_{14}$	25 181.063	0.959	$5_{14} \leftarrow 4_{13}$	25 290.065	-0.728
	$6_{16} \leftarrow 5_{15}$	30 217.183	1.099	$6_{15} \leftarrow 5_{14}$	30 347.970	-0.926
	$7_{17} \leftarrow 6_{16}$	35 253.252	1.211	$7_{16} \leftarrow 6_{15}$	35 405.817	-1.152
	$8_{18} \leftarrow 7_{17}$	40 289.262	1.290	$8_{17} \leftarrow 7_{16}$	40 463.596	-1.411
	$9_{19} \leftarrow 8_{18}$	45 325.204	1.332	$9_{18} \leftarrow 8_{17}$	45 521.296	-1.708
	$3_{22} \leftarrow 2_{21}$	15 224.577	1.475	$3_{21} \leftarrow 2_{20}$	15 224.584	1.476
	$4_{23} \leftarrow 3_{22}$	20 299.386	1.944	$4_{22} \leftarrow 3_{21}$	20 299.401	1.946
	$5_{24} \leftarrow 4_{23}$	25 374.152	2.394	$5_{23} \leftarrow 4_{22}$	25 374.181	2.397
	$6_{25} \leftarrow 5_{24}$	30 448.864	2.819	$6_{24} \leftarrow 5_{23}$	30 448.915	2.823
	$7_{26} \leftarrow 6_{25}$	35 523.513	3.216	$7_{25} \leftarrow 6_{24}$	35 523.592	3.221
	$8_{27} \leftarrow 7_{26}$	40 598.086	3.579	$8_{26} \leftarrow 7_{25}$	40 598.204	3.585
	$9_{28} \leftarrow 8_{27}$	45 672.574	3.903	$9_{27} \leftarrow 8_{26}$	45 672.742	3.911
	$4_{32} \leftarrow 3_{31}$	20 393.950	2.551	$4_{31} \leftarrow 3_{30}$	20 393.950	2.551
	$5_{33} \leftarrow 4_{32}$	25 492.362	3.152	$5_{32} \leftarrow 4_{31}$	25 492.362	3.152
	$6_{34} \leftarrow 5_{33}$	30 590.723	3.729	$6_{33} \leftarrow 5_{32}$	30 590.723	3.729
	$7_{35} \leftarrow 6_{34}$	35 689.024	4.276	$7_{34} \leftarrow 6_{33}$	35 689.024	4.276
	$8_{36} \leftarrow 7_{35}$	40 787.255	4.789	$8_{35} \leftarrow 7_{34}$	40 787.255	4.789
	$9_{37} \leftarrow 8_{36}$	45 885.404	5.262	$9_{36} \leftarrow 8_{35}$	45 885.404	5.262
	$5_{42} \leftarrow 4_{41}$	25 599.610	2.924	$5_{41} \leftarrow 4_{40}$	25 599.610	2.924
	$6_{43} \leftarrow 5_{42}$	30 719.420	3.454	$6_{42} \leftarrow 5_{41}$	30 719.420	3.454
	$7_{44} \leftarrow 6_{43}$	35 839.168	3.954	$7_{43} \leftarrow 6_{42}$	35 839.168	3.954
	$8_{45} \leftarrow 7_{44}$	40 958.846	4.419	$8_{44} \leftarrow 7_{43}$	40 958.846	4.419
	$9_{46} \leftarrow 8_{45}$	46 078.441	4.844	$9_{45} \leftarrow 8_{44}$	46 078.441	4.844
	$6_{52} \leftarrow 5_{51}$	30 839.666	2.357	$6_{51} \leftarrow 5_{50}$	30 839.666	2.357
	$7_{53} \leftarrow 6_{52}$	35 979.452	2.672	$7_{52} \leftarrow 6_{51}$	35 979.452	2.672
	$8_{54} \leftarrow 7_{53}$	41 119.167	2.951	$8_{53} \leftarrow 7_{52}$	41 119.167	2.951
	$9_{55} \leftarrow 8_{54}$	46 258.798	3.190	$9_{54} \leftarrow 8_{53}$	46 258.798	3.190
	$7_{62} \leftarrow 6_{61}$	36 112.656	0.670	$7_{61} \leftarrow 6_{60}$	36 112.656	0.670
	$8_{63} \leftarrow 7_{62}$	41 271.396	0.661	$8_{62} \leftarrow 7_{61}$	41 271.396	0.661
	$9_{64} \leftarrow 8_{63}$	46 430.051	0.610	$9_{63} \leftarrow 8_{62}$	46 430.051	0.610

	$8_{72} \leftarrow 7_{71}$	41 417.434	-2.233	$8_{71} \leftarrow 7_{70}$	41 417.434	-2.233
	$9_{73} \leftarrow 8_{72}$	46 594.340	-2.649	$9_{72} \leftarrow 8_{71}$	46 594.340	-2.649
	$9_{82} \leftarrow 8_{81}$	46 753.041	-6.419	$9_{81} \leftarrow 8_{80}$	46 753.041	-6.419
$v_5^b = 2$						
	$1_{01} \leftarrow 0_{00}$	5 047.511	-0.229			
	$2_{02} \leftarrow 1_{01}$	10 095.016	-0.463			
	$3_{03} \leftarrow 2_{02}$	15 142.513	-0.706			
	$4_{04} \leftarrow 3_{03}$	20 189.997	-0.963			
	$5_{05} \leftarrow 4_{04}$	25 237.462	-1.239			
	$6_{06} \leftarrow 5_{05}$	30 284.904	-1.538			
	$7_{07} \leftarrow 6_{06}$	35 332.319	-1.865			
	$8_{08} \leftarrow 7_{07}$	40 379.702	-2.224			
	$9_{09} \leftarrow 8_{08}$	45 427.048	-2.622			
	$2_{12} \leftarrow 1_{11}$	10 125.079	0.336	$2_{11} \leftarrow 1_{10}$	10 178.026	0.396
	$3_{13} \leftarrow 2_{12}$	15 187.602	0.492	$3_{12} \leftarrow 2_{11}$	15 267.019	0.581
	$4_{14} \leftarrow 3_{13}$	20 250.105	0.633	$4_{13} \leftarrow 3_{12}$	20 355.990	0.752
	$5_{15} \leftarrow 4_{14}$	25 312.581	0.755	$5_{14} \leftarrow 4_{13}$	25 444.930	0.903
	$6_{16} \leftarrow 5_{15}$	30 375.023	0.854	$6_{15} \leftarrow 5_{14}$	30 533.831	1.029
	$7_{17} \leftarrow 6_{16}$	35 437.425	0.923	$7_{16} \leftarrow 6_{15}$	35 622.686	1.126
	$8_{18} \leftarrow 7_{17}$	40 499.780	0.958	$8_{17} \leftarrow 7_{16}$	40 711.487	1.188
	$9_{19} \leftarrow 8_{18}$	45 562.082	0.955	$9_{18} \leftarrow 8_{17}$	45 800.226	1.211
	$3_{22} \leftarrow 2_{21}$	15 302.557	1.317	$3_{21} \leftarrow 2_{20}$	15 302.575	1.317
	$4_{23} \leftarrow 3_{22}$	20 403.350	1.731	$4_{22} \leftarrow 3_{21}$	20 403.396	1.732
	$5_{24} \leftarrow 4_{23}$	25 504.091	2.124	$5_{23} \leftarrow 4_{22}$	25 504.185	2.128
	$6_{25} \leftarrow 5_{24}$	30 604.767	2.491	$6_{24} \leftarrow 5_{23}$	30 604.934	2.498
	$7_{26} \leftarrow 6_{25}$	35 705.367	2.826	$7_{25} \leftarrow 6_{24}$	35 705.634	2.838
	$8_{27} \leftarrow 7_{26}$	40 805.877	3.123	$8_{26} \leftarrow 7_{25}$	40 806.279	3.143
	$9_{28} \leftarrow 8_{27}$	45 906.284	3.378	$9_{27} \leftarrow 8_{26}$	45 906.859	3.407
	$4_{32} \leftarrow 3_{31}$	20 490.927	-1.007	$4_{31} \leftarrow 3_{30}$	20 490.936	-0.998
	$5_{33} \leftarrow 4_{32}$	25 613.594	-1.286	$5_{32} \leftarrow 4_{31}$	25 613.604	-1.276
	$6_{34} \leftarrow 5_{33}$	30 736.218	-1.584	$6_{33} \leftarrow 5_{32}$	30 736.229	-1.573
	$7_{35} \leftarrow 6_{34}$	35 858.790	-1.903	$7_{34} \leftarrow 6_{33}$	35 858.802	-1.892
	$8_{36} \leftarrow 7_{35}$	40 981.302	-2.249	$8_{35} \leftarrow 7_{34}$	40 981.313	-2.238
	$9_{37} \leftarrow 8_{36}$	46 103.744	-2.624	$9_{36} \leftarrow 8_{35}$	46 103.754	-2.614
	$5_{42} \leftarrow 4_{41}$	25 723.468	3.465	$5_{41} \leftarrow 4_{40}$	25 723.468	3.465
	$6_{43} \leftarrow 5_{42}$	30 868.047	4.099	$6_{42} \leftarrow 5_{41}$	30 868.047	4.099
	$7_{44} \leftarrow 6_{43}$	36 012.564	4.700	$7_{43} \leftarrow 6_{42}$	36 012.564	4.700
	$8_{45} \leftarrow 7_{44}$	41 157.008	5.263	$8_{44} \leftarrow 7_{43}$	41 157.008	5.263
	$9_{46} \leftarrow 8_{45}$	46 301.369	5.783	$9_{45} \leftarrow 8_{44}$	46 301.369	5.783
	$6_{52} \leftarrow 5_{51}$	30 986.507	3.142	$6_{51} \leftarrow 5_{50}$	30 986.507	3.142
	$7_{53} \leftarrow 6_{52}$	36 150.764	3.581	$7_{52} \leftarrow 6_{51}$	36 150.764	3.581
	$8_{54} \leftarrow 7_{53}$	41 314.946	3.982	$8_{53} \leftarrow 7_{52}$	41 314.946	3.982
	$9_{55} \leftarrow 8_{54}$	46 479.044	4.338	$9_{54} \leftarrow 8_{53}$	46 479.044	4.338
	$7_{62} \leftarrow 6_{61}$	36 283.299	2.795	$7_{61} \leftarrow 6_{60}$	36 283.299	2.795
	$8_{63} \leftarrow 7_{62}$	41 466.408	3.077	$8_{62} \leftarrow 7_{61}$	41 466.408	3.077
	$9_{64} \leftarrow 8_{63}$	46 649.429	3.313	$9_{63} \leftarrow 8_{62}$	46 649.429	3.313
$v_5^b = 3$						
	$1_{01} \leftarrow 0_{00}$	5 088.836	0.088			
	$2_{02} \leftarrow 1_{01}$	10 177.670	0.171			
	$3_{03} \leftarrow 2_{02}$	15 266.498	0.244			
	$4_{04} \leftarrow 3_{03}$	20 355.318	0.301			
	$5_{05} \leftarrow 4_{04}$	25 444.127	0.339			
	$6_{06} \leftarrow 5_{05}$	30 532.921	0.351			
	$7_{07} \leftarrow 6_{06}$	35 621.700	0.333			
	$8_{08} \leftarrow 7_{07}$	40 710.459	0.280			
	$9_{09} \leftarrow 8_{08}$	45 799.196	0.186			
	$2_{12} \leftarrow 1_{11}$	10 186.990	-0.109	$2_{11} \leftarrow 1_{10}$	10 250.815	0.606
	$3_{13} \leftarrow 2_{12}$	15 280.471	-0.176	$3_{12} \leftarrow 2_{11}$	15 376.205	0.896

$4_{14} \leftarrow 3_{13}$	20 373.934	-0.258	$4_{13} \leftarrow 3_{12}$	20 501.575	1.171
$5_{15} \leftarrow 4_{14}$	25 467.375	-0.360	$5_{14} \leftarrow 4_{13}$	25 626.917	1.424
$6_{16} \leftarrow 5_{15}$	30 560.787	-0.487	$6_{15} \leftarrow 5_{14}$	30 752.225	1.650
$7_{17} \leftarrow 6_{16}$	35 654.164	-0.645	$7_{16} \leftarrow 6_{15}$	35 877.492	1.846
$8_{18} \leftarrow 7_{17}$	40 747.502	-0.837	$8_{17} \leftarrow 7_{16}$	41 002.710	2.004
$9_{19} \leftarrow 8_{18}$	45 840.793	-1.069	$9_{18} \leftarrow 8_{17}$	46 127.874	2.120
$3_{22} \leftarrow 2_{21}$	15 389.543	-1.913	$3_{21} \leftarrow 2_{20}$	15 389.577	-1.918
$4_{23} \leftarrow 3_{22}$	20 519.316	-2.569	$4_{22} \leftarrow 3_{21}$	20 519.412	-2.573
$5_{24} \leftarrow 4_{23}$	25 649.027	-3.243	$5_{23} \leftarrow 4_{22}$	25 649.228	-3.241
$6_{25} \leftarrow 5_{24}$	30 778.658	-3.937	$6_{24} \leftarrow 5_{23}$	30 779.018	-3.925
$7_{26} \leftarrow 6_{25}$	35 908.193	-4.656	$7_{25} \leftarrow 6_{24}$	35 908.778	-4.628
$8_{27} \leftarrow 7_{26}$	41 037.618	-5.404	$8_{26} \leftarrow 7_{25}$	41 038.503	-5.355
$9_{28} \leftarrow 8_{27}$	46 166.915	-6.185	$9_{27} \leftarrow 8_{26}$	46 168.187	-6.108