

Supplementary Material

Fourier-transform microwave spectroscopy of the *s-trans*-3-propenyl
(CH₂CHĊO) and 3-propenyl (ĊH₂CHCO) radicals

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Table S1. Cartesian coordinates of the optimized geometries for the three conformers of CH₂CHCO calculated at all-electron RCCSD(T)/cc-pCVTZ-F12

s-trans-CH₂CHCO

RCCSD(T)-F12A/CVTZ-F12 ENERGY=-191.26137821			
H	0.0000000000	1.2699402903	-1.8672918098
C	0.0000000000	0.1900179059	-1.8220659514
C	0.0000000000	-0.4334266678	-0.6430666190
H	0.0000000000	-0.3613092394	-2.7506471676
H	0.0000000000	-1.5140826328	-0.5494597205
C	0.0000000000	0.3525248559	0.6058384686
O	0.0000000000	-0.0437141495	1.7205075124

linear-CH₂CHCO

RCCSD(T)-F12A/CVTZ-F12 ENERGY=-191.25888704			
H	0.0000000000	1.4411301938	-1.6361344174
C	0.0000000000	0.3730079633	-1.7754838095
C	0.0000000000	-0.5105625085	-0.6770522321
H	0.0000000000	-0.0274304612	-2.7738699200
H	0.0000000000	-1.5833150843	-0.8133788105
C	0.0000000000	-0.1252078932	0.6029171572
O	0.0000000000	0.2078218541	1.7167763204

s-cis-CH₂CHCO

RCCSD(T)-F12A/CVTZ-F12 ENERGY=-191.25825683			
H	-1.4808425741	-0.2078664268	-1.0651462608
C	-0.5117454375	-0.0283473557	-1.5093851145
C	0.5782904389	0.0823215632	-0.7445133394
H	-0.4487420464	0.0452994285	-2.5854060496
H	1.5657474434	0.2232571680	-1.1565584155
C	0.4899374342	-0.1570630706	0.7110401761
O	-0.3945695865	0.0735172181	1.4604036973

Table S2 Observed transition frequencies of *s-trans*-CH₂CHCO (in MHz)

N'	K_a	K_c	J	F_1'	F_2'	F'	N''	K_a	K_c	J''	F_1	F_2''	F''	Obs.	Obs-Calc	Int.
1	0	1	0.5	0	0.5	1	0	0	0	0.5	1	0.5	0	8986.954	0.002	0.218
			0.5	1	0.5	1				0.5	1	1.5	2	8979.731	0.001	0.580
			0.5	1	1.5	1				0.5	1	1.5	1	8982.566	0.002	0.607
			0.5	1	1.5	2				0.5	1	1.5	2	8984.005	-0.002	1.347
			1.5	1	0.5	0				0.5	0	0.5	1	8976.784	-0.002	0.331
			1.5	1	0.5	1				0.5	0	0.5	1	8976.588	0.001	0.915
			1.5	1	1.5	1				0.5	0	0.5	0	8976.433	-0.000	0.912
			1.5	1	1.5	2				0.5	0	0.5	1	8976.238	-0.001	1.639
			1.5	2	1.5	2				0.5	1	0.5	1	8973.024	0.000	1.091
			1.5	2	1.5	2				0.5	1	1.5	1	8972.384	0.001	0.575
			1.5	2	2.5	2				0.5	1	0.5	1	8973.245	0.001	0.460
			1.5	2	2.5	2				0.5	1	1.5	1	8972.604	0.001	0.910
			1.5	2	2.5	2				0.5	1	1.5	2	8972.922	-0.001	0.297
			1.5	2	2.5	3				0.5	1	1.5	2	8972.181	0.000	2.333
2	0	2	1.5	1	0.5	1	1	0	1	0.5	0	0.5	1	17955.019	0.001	0.406
			1.5	1	0.5	1				0.5	1	0.5	0	17962.848	0.001	0.177
			1.5	1	0.5	1				0.5	1	0.5	1	17962.241	0.001	0.324
			1.5	1	0.5	1				0.5	1	1.5	2	17957.965	0.001	0.182
			1.5	1	1.5	1				0.5	0	0.5	0	17957.489	0.001	0.583
			1.5	1	1.5	1				0.5	0	0.5	1	17956.968	0.003	0.073
			1.5	1	1.5	1				0.5	1	1.5	1	17961.031 ^a	-0.003	0.453
			1.5	1	1.5	2				0.5	0	0.5	1	17958.082	-0.001	1.308
			1.5	1	1.5	2				0.5	1	1.5	2	17961.031 ^a	0.002	0.569
			1.5	2	1.5	1				0.5	1	0.5	0	17955.550	-0.002	0.479
			1.5	2	1.5	1				0.5	1	0.5	1	17954.948	0.002	0.331
			1.5	2	1.5	2				0.5	1	0.5	1	17955.801	0.000	1.072
			1.5	2	1.5	2				0.5	1	1.5	1	17952.646	-0.001	0.077
			1.5	2	2.5	2				0.5	1	1.5	1	17954.242	-0.000	1.322
			1.5	2	2.5	2				0.5	1	1.5	2	17953.120	0.000	0.127
			1.5	2	2.5	3				0.5	1	1.5	2	17954.015	-0.001	2.035
			1.5	2	1.5	1				1.5	2	1.5	1	17961.230	0.000	0.164
			1.5	2	1.5	1				1.5	2	2.5	2	17961.753	0.001	0.065
			1.5	2	1.5	2				1.5	2	1.5	1	17962.084	-0.000	0.054
			1.5	2	1.5	2				1.5	2	1.5	2	17962.824	-0.004	0.174
			1.5	2	1.5	2				1.5	2	2.5	2	17962.609	0.002	0.151
			1.5	2	1.5	2				1.5	2	2.5	3	17963.349	-0.001	0.055
			1.5	2	2.5	2				1.5	2	1.5	2	17964.424	0.000	0.293
			1.5	2	2.5	2				1.5	2	2.5	2	17964.205	0.002	0.165
			1.5	2	2.5	3				1.5	2	2.5	2	17965.098	-0.001	0.090
			1.5	2	2.5	3				1.5	2	2.5	3	17965.840	-0.001	0.646
2.5	2	1.5	1	1.5	1	0.5	0	17951.658	0.003	0.660						
2.5	2	1.5	1	1.5	1	0.5	1	17951.851	-0.004	0.457						
2.5	2	1.5	2	1.5	1	0.5	1	17951.539	0.000	1.499						
2.5	2	1.5	2	1.5	1	1.5	2	17951.887	0.001	0.405						
2.5	2	2.5	2	1.5	1	1.5	1	17951.421	-0.000	1.866						
2.5	2	2.5	3	1.5	1	1.5	2	17951.265	-0.001	2.762						

			2.5	3	2.5	2				1.5	2	1.5	1	17948.635	-0.002	1.714
			2.5	3	2.5	2				1.5	2	2.5	2	17949.162	0.002	0.262
			2.5	3	2.5	3				1.5	2	2.5	2	17948.425	-0.001	1.939
			2.5	3	3.5	3				1.5	2	1.5	2	17948.354	0.001	2.157
			2.5	3	3.5	4				1.5	2	2.5	3	17948.143	0.001	3.600
2	1	2	1.5	1	0.5	0	1	1	1	0.5	0	0.5	1	17867.113	0.006	0.192
			1.5	1	0.5	1				0.5	0	0.5	1	17867.925	-0.001	0.509
			1.5	1	0.5	1				0.5	1	1.5	2	17880.742	0.001	0.093
			1.5	1	1.5	1				0.5	0	0.5	0	17868.998	-0.002	0.464
			1.5	1	1.5	1				0.5	1	1.5	1	17881.492	0.003	0.187
			1.5	1	1.5	2				0.5	0	0.5	1	17869.774	-0.002	0.786
			1.5	1	1.5	2				0.5	1	0.5	1	17880.836	-0.000	0.154
			1.5	1	1.5	2				0.5	1	1.5	2	17882.592	0.002	0.287
			1.5	2	1.5	1				0.5	1	0.5	0	17859.306	0.002	0.419
			1.5	2	1.5	1				0.5	1	0.5	1	17859.631	0.001	0.230
			1.5	2	1.5	2				0.5	1	0.5	1	17860.550	-0.003	0.965
			1.5	2	1.5	2				0.5	1	1.5	2	17862.304	-0.003	0.296
			1.5	2	2.5	2				0.5	1	1.5	1	17862.760	-0.001	1.183
			1.5	2	2.5	3				0.5	1	1.5	2	17863.967	0.001	1.810
			1.5	1	1.5	2				1.5	1	1.5	2	17241.987	-0.002	0.141
			1.5	2	2.5	3				1.5	2	2.5	3	17192.411	0.005	0.191
			2.5	2	1.5	1				1.5	1	0.5	0	17547.250	-0.001	0.444
			2.5	2	1.5	1				1.5	1	0.5	1	17547.482	0.013	0.190
			2.5	2	1.5	2				1.5	1	0.5	1	17546.763	-0.003	0.913
			2.5	2	1.5	2				1.5	1	1.5	1	17545.988	0.003	0.385
			2.5	2	1.5	2				1.5	2	1.5	2	17515.833	0.003	0.122
			2.5	2	2.5	2				1.5	1	0.5	1	17547.044	-0.003	0.228
			2.5	2	2.5	2				1.5	1	1.5	1	17546.265	-0.001	0.803
			2.5	2	2.5	2				1.5	1	1.5	2	17546.478	-0.006	0.300
			2.5	2	2.5	2				1.5	2	2.5	2	17515.311	0.001	0.103
			2.5	2	2.5	3				1.5	1	1.5	2	17545.777	-0.004	1.862
			2.5	2	2.5	3				1.5	2	2.5	3	17514.815	-0.006	0.217
			2.5	3	2.5	2				1.5	2	1.5	1	17542.689	-0.001	1.266
			2.5	3	2.5	2				1.5	2	1.5	2	17542.910	0.005	0.129
			2.5	3	2.5	3				1.5	2	1.5	2	17542.196	-0.000	1.531
			2.5	3	2.5	3				1.5	2	2.5	2	17541.396	0.001	0.562
			2.5	3	3.5	3				1.5	2	1.5	2	17542.406	-0.002	0.452
			2.5	3	3.5	3				1.5	2	2.5	2	17541.603	-0.004	1.445
			2.5	3	3.5	4				1.5	2	2.5	3	17541.111	-0.002	2.719
2	1	1	1.5	1	0.5	0	1	1	0	0.5	0	0.5	1	18521.768	-0.005	0.188
			1.5	1	0.5	1				0.5	0	0.5	1	18522.234	0.001	0.455
			1.5	1	0.5	1				0.5	1	1.5	2	18545.982	0.001	0.085
			1.5	1	1.5	1				0.5	0	0.5	0	18523.209	0.001	0.423
			1.5	1	1.5	1				0.5	1	1.5	1	18546.045	-0.001	0.199
			1.5	1	1.5	2				0.5	0	0.5	1	18523.573	0.002	0.803
			1.5	1	1.5	2				0.5	1	0.5	1	18544.956	0.003	0.140
			1.5	1	1.5	2				0.5	1	1.5	2	18547.318	-0.001	0.297
			1.5	2	1.5	1				0.5	1	0.5	0	18517.791	-0.004	0.425
			1.5	2	1.5	1				0.5	1	0.5	1	18518.705	0.001	0.263
			1.5	2	1.5	2				0.5	1	0.5	1	18519.226	0.006	1.008

			1.5	2	1.5	2			0.5	1	1.5	2	18521.590	0.004	0.250	
			1.5	2	2.5	2			0.5	1	1.5	1	18521.493	0.000	1.207	
			1.5	2	2.5	3			0.5	1	1.5	2	18522.821	-0.001	1.807	
			1.5	2	2.5	3			1.5	2	2.5	3	17833.548	0.001	0.196	
			2.5	2	1.5	1			1.5	1	0.5	0	18214.633	-0.000	0.445	
			2.5	2	1.5	2			1.5	1	0.5	1	18214.220	-0.002	0.809	
			2.5	2	1.5	2			1.5	1	1.5	1	18213.466	0.001	0.498	
			2.5	2	1.5	2			1.5	2	1.5	2	18180.786	-0.004	0.111	
			2.5	2	2.5	2			1.5	1	0.5	1	18214.407	0.002	0.313	
			2.5	2	2.5	2			1.5	1	1.5	1	18213.653	0.005	0.717	
			2.5	2	2.5	2			1.5	1	1.5	2	18213.703	-0.006	0.306	
			2.5	2	2.5	2			1.5	2	2.5	2	18180.215	0.002	0.094	
			2.5	2	2.5	3			1.5	1	1.5	2	18213.234	-0.003	1.868	
			2.5	2	2.5	3			1.5	2	2.5	3	18179.781	-0.002	0.214	
			2.5	3	2.5	2			1.5	2	1.5	1	18210.871	-0.002	1.267	
			2.5	3	2.5	2			1.5	2	2.5	2	18210.149	-0.005	0.098	
			2.5	3	2.5	3			1.5	2	1.5	2	18210.444	-0.003	1.331	
			2.5	3	2.5	3			1.5	2	2.5	2	18209.687	-0.000	0.771	
			2.5	3	3.5	3			1.5	2	1.5	2	18210.577	0.001	0.644	
			2.5	3	3.5	3			1.5	2	2.5	2	18209.819	0.002	1.248	
			2.5	3	3.5	4			1.5	2	2.5	3	18209.389	-0.002	2.720	
3	0	3	2.5	2	1.5	1	2	0	2	1.5	1	0.5	1	26929.524	0.001	0.371
			2.5	2	1.5	2			1.5	1	0.5	1	26930.669	-0.001	1.422	
			2.5	2	1.5	2			1.5	2	1.5	2	26937.109	-0.001	0.252	
			2.5	2	2.5	2			1.5	1	1.5	1	26930.132	-0.002	1.683	
			2.5	2	2.5	2			1.5	2	2.5	2	26936.927	0.001	0.305	
			2.5	2	2.5	3			1.5	1	1.5	2	26930.163	-0.001	2.534	
			2.5	2	2.5	3			1.5	2	2.5	3	26937.174	-0.003	0.395	
			2.5	3	2.5	2			1.5	2	1.5	1	26927.930	0.003	1.599	
			2.5	3	2.5	2			1.5	2	1.5	2	26927.072	-0.000	0.222	
			2.5	3	2.5	3			1.5	2	1.5	2	26927.907	-0.001	2.455	
			2.5	3	2.5	3			1.5	2	2.5	3	26925.418	0.002	0.223	
			2.5	3	3.5	3			1.5	2	2.5	2	26927.566	0.002	2.542	
			2.5	3	3.5	4			1.5	2	2.5	3	26927.532	-0.001	3.401	
			2.5	3	3.5	3			2.5	3	3.5	3	26943.637	0.002	0.291	
			2.5	3	3.5	4			2.5	3	3.5	4	26945.231	-0.001	0.397	
			3.5	3	2.5	2			2.5	2	1.5	1	26923.688	0.004	1.783	
			3.5	3	2.5	2			2.5	2	1.5	2	26923.999	-0.001	0.271	
			3.5	3	2.5	3			2.5	2	1.5	2	26923.554	-0.001	2.690	
			3.5	3	2.5	3			2.5	2	2.5	3	26924.177	0.001	0.247	
			3.5	3	3.5	3			2.5	2	2.5	2	26923.489	0.002	2.876	
			3.5	3	3.5	4			2.5	2	2.5	3	26923.361	-0.001	3.814	
			3.5	4	3.5	3			2.5	3	2.5	2	26921.130	-0.001	2.775	
			3.5	4	3.5	4			2.5	3	2.5	3	26921.052	0.001	3.601	
			3.5	4	4.5	4			2.5	3	3.5	3	26920.960	0.001	3.727	
			3.5	4	4.5	5			2.5	3	3.5	4	26920.880	0.002	4.714	
3	1	3	2.5	2	1.5	1	2	1	2	1.5	1	0.5	0	26514.390	0.000	0.536
			2.5	2	1.5	2			1.5	1	0.5	1	26514.683	0.003	1.220	
			2.5	2	2.5	2			1.5	1	1.5	1	26514.659	-0.002	1.516	
			2.5	2	2.5	3			1.5	1	1.5	2	26514.947	-0.000	2.264	

			2.5	3	2.5	2				1.5	2	1.5	1	26511.229	-0.000	1.502
			2.5	3	2.5	3				1.5	2	1.5	2	26511.418	0.001	2.240
			2.5	3	3.5	3				1.5	2	2.5	2	26511.521	-0.002	2.426
			2.5	3	3.5	4				1.5	2	2.5	3	26511.705	-0.001	3.235
			3.5	3	2.5	2				2.5	2	1.5	1	26392.803	0.001	1.502
			3.5	3	2.5	3				2.5	2	2.5	2	26392.512	-0.004	1.742
			3.5	3	3.5	3				2.5	2	1.5	2	26392.550	0.002	1.985
			3.5	3	3.5	4				2.5	2	2.5	3	26392.264	0.002	3.222
			3.5	4	3.5	3				2.5	3	2.5	2	26390.082	-0.001	2.449
			3.5	4	3.5	4				2.5	3	2.5	3	26390.006	0.000	1.132
			3.5	4	3.5	4				2.5	3	3.5	3	26389.794	0.000	2.103
			3.5	4	4.5	4				2.5	3	2.5	3	26389.748	0.000	2.282
			3.5	4	4.5	4				2.5	3	3.5	3	26389.537	0.001	1.132
			3.5	4	4.5	5				2.5	3	3.5	4	26389.458	-0.000	4.199
3	1	2	2.5	2	1.5	1	2	1	1	1.5	1	0.5	0	27503.582	0.002	0.535
			2.5	2	1.5	1				1.5	1	0.5	1	27503.119	-0.002	0.335
			2.5	2	1.5	2				1.5	1	0.5	1	27503.845	0.001	1.266
			2.5	2	2.5	2				1.5	1	1.5	1	27503.976	0.000	1.500
			2.5	2	2.5	3				1.5	1	1.5	2	27504.236	-0.002	2.257
			2.5	3	2.5	2				1.5	2	1.5	1	27501.757	-0.001	1.504
			2.5	3	2.5	2				1.5	2	1.5	2	27501.235	-0.007	0.211
			2.5	3	2.5	3				1.5	2	1.5	2	27501.975	-0.001	2.297
			2.5	3	2.5	3				1.5	2	2.5	3	27500.744	0.004	0.198
			2.5	3	3.5	3				1.5	2	2.5	2	27502.155	0.001	2.425
			2.5	3	3.5	4				1.5	2	2.5	3	27502.369	-0.001	3.234
			3.5	3	2.5	2				2.5	2	1.5	1	27391.786	0.001	1.508
			3.5	3	2.5	3				2.5	2	1.5	2	27391.734	0.003	0.882
			3.5	3	2.5	3				2.5	2	2.5	2	27391.547	-0.001	1.386
			3.5	3	3.5	3				2.5	2	1.5	2	27391.492	0.002	1.607
			3.5	3	3.5	4				2.5	2	2.5	3	27391.252	-0.002	3.234
			3.5	4	3.5	3				2.5	3	2.5	2	27389.767	-0.000	2.451
			3.5	4	3.5	4				2.5	3	2.5	3	27389.680	0.002	1.456
			3.5	4	3.5	4				2.5	3	3.5	3	27389.552	0.003	1.807
			3.5	4	4.5	4				2.5	3	2.5	3	27389.405	-0.004	1.967
			3.5	4	4.5	4				2.5	3	3.5	3	27389.277	-0.003	1.423
			3.5	4	4.5	5				2.5	3	3.5	4	27389.190	-0.001	4.199
2	1	1	1.5	2	1.5	2	2	0	2	1.5	2	1.5	2	56159.900 ^b	0.011	0.981
			1.5	2	2.5	2				1.5	2	2.5	2	56159.018 ^b	0.008	1.172
			1.5	2	2.5	3				1.5	2	2.5	3	56158.636 ^b	0.003	1.641*
			2.5	3	2.5	2				2.5	3	2.5	2	56551.219 ^b	-0.002	1.991*
			2.5	3	3.5	3				2.5	3	3.5	4	56552.651 ^b	0.008	0.238*
			2.5	3	3.5	4				2.5	3	3.5	4	56552.172 ^b	-0.004	3.739*
3	1	2	2.5	3	2.5	3	3	0	3	2.5	3	2.5	3	56733.944 ^b	-0.013	1.961*
			2.5	3	3.5	4				2.5	3	3.5	4	56733.468 ^b	-0.002	2.712*
			3.5	4	3.5	3				3.5	4	3.5	3	57019.846 ^b	-0.011	3.103*
			3.5	4	4.5	5				3.5	4	4.5	5	57020.481 ^b	-0.007	4.983*

^aOverlapped lines. Weights of 0.25 were given.

^bObserved by double resonance. Weights of 0.25 were given.

Table S3 Observed transition frequencies of linear-CH₂CHCO (in MHz)

N'	K_a'	K_c'	J'	F_1'	F_2'	F'	N''	K_a''	K_c''	J''	F_1''	F_2''	F''	Obs.	Obs-Calc	Int.	
1	0	1	0.5	1	0.5	1	0	0	0	0.5	1	1.5	2	9079.907	0.006	0.781	
			0.5	1	1.5	1					0.5	0	0.5	0	9081.554	-0.000	0.880
			0.5	1	1.5	2					0.5	0	0.5	1	9081.841	-0.000	1.664
			1.5	1	0.5	1					0.5	0	0.5	1	9079.847	-0.001	0.879
			1.5	1	1.5	1					0.5	1	1.5	1	9080.075	-0.005	0.923
			1.5	1	1.5	2					0.5	1	1.5	2	9080.235	-0.001	1.608
			1.5	2	1.5	1					0.5	1	0.5	0	9081.147	0.000	0.738
			1.5	2	1.5	2					0.5	1	0.5	1	9079.431	0.000	1.612
			1.5	2	2.5	2					0.5	1	1.5	1	9079.300	0.001	1.658
			1.5	2	2.5	3					0.5	1	1.5	2	9079.047	-0.001	2.334
2	0	2	1.5	1	0.5	1	1	0	1	0.5	1	0.5	1	18167.323	-0.000	0.608	
			1.5	1	1.5	2					0.5	0	0.5	1	18157.578	-0.001	1.462
			1.5	2	1.5	1					0.5	1	0.5	0	18161.195	0.003	0.486
			1.5	2	1.5	2					0.5	1	0.5	1	18160.480	0.003	0.838
			1.5	2	2.5	2					0.5	1	1.5	1	18159.685	-0.002	1.875
			1.5	2	2.5	3					0.5	1	1.5	2	18159.782	0.001	2.794
			1.5	2	1.5	1					1.5	1	1.5	1	18162.033	-0.001	0.388
			1.5	2	1.5	2					1.5	1	1.5	2	18160.139	-0.002	0.864
			2.5	2	1.5	2					0.5	1	1.5	2	18156.509	0.001	0.391
			2.5	2	1.5	1					1.5	1	0.5	0	18158.194	0.000	0.665
			2.5	2	1.5	2					1.5	1	0.5	1	18158.503	0.001	1.542
			2.5	2	2.5	2					1.5	1	1.5	1	18158.088	0.000	1.414
			2.5	2	2.5	2					1.5	2	2.5	2	18158.870	0.001	0.442
			2.5	2	2.5	3					1.5	1	1.5	2	18157.501	-0.001	1.891
			2.5	2	2.5	3					1.5	2	2.5	3	18158.689	-0.001	0.875
			2.5	3	2.5	2					1.5	2	1.5	1	18157.350	0.000	1.799
			2.5	3	2.5	3					1.5	2	1.5	2	18156.955	-0.001	2.758
			2.5	3	3.5	3					1.5	2	2.5	2	18156.973	0.001	2.777
2.5	3	3.5	4					1.5	2	2.5	3	18156.755	-0.001	3.601			
2	1	2	1.5	2	1.5	2	1	1	1	0.5	1	0.5	1	17814.335	0.000	0.998	
			1.5	2	2.5	2					0.5	1	1.5	1	17821.642	0.000	1.033
			1.5	2	2.5	3					0.5	1	1.5	2	17821.518	-0.000	1.667
			2.5	2	1.5	2					1.5	1	0.5	1	17703.625	0.001	1.212
			2.5	2	2.5	2					1.5	1	1.5	1	17706.134	0.000	1.189
			2.5	2	2.5	3					1.5	1	1.5	2	17705.596	0.000	1.882
			2.5	3	2.5	2					1.5	2	1.5	1	17708.343	0.000	1.331
			2.5	3	2.5	3					1.5	2	1.5	2	17707.579	0.001	2.080
			2.5	3	3.5	3					1.5	2	2.5	2	17708.556	-0.002	1.986
			2.5	3	3.5	4					1.5	2	2.5	3	17707.972	-0.001	2.708
2	1	1	1.5	1	1.5	2	1	1	0	0.5	1	0.5	1	18680.138	0.000	0.714	
			1.5	2	2.5	2					0.5	1	1.5	1	18675.122	0.000	0.609
			1.5	2	2.5	3					0.5	1	1.5	2	18675.518	0.000	1.652
			2.5	2	1.5	2					1.5	1	0.5	1	18554.571	-0.000	1.218
			2.5	2	2.5	2					1.5	2	1.5	1	18558.270	-0.001	1.327
			2.5	2	2.5	3					1.5	2	1.5	2	18557.683	0.001	2.069
			2.5	3	2.5	2					1.5	1	1.5	1	18557.746	-0.000	1.189
			2.5	3	2.5	3					1.5	1	1.5	2	18557.406	0.000	1.881

			2.5	3	3.5	3				1.5	2	2.5	2	18558.774	-0.001	1.988
			2.5	3	3.5	4				1.5	2	2.5	3	18558.490	-0.000	2.707
3	0	3	2.5	2	2.5	2	2	0	2	1.5	1	1.5	1	27231.978	0.002	1.765
			2.5	2	2.5	3				1.5	1	1.5	2	27231.592	0.000	2.694
			2.5	3	2.5	2				1.5	2	1.5	1	27231.356	0.001	1.581
			2.5	3	2.5	3				1.5	2	1.5	2	27230.968	-0.002	2.189
			2.5	3	3.5	3				1.5	2	2.5	2	27231.425	-0.003	2.894
			2.5	3	3.5	4				1.5	2	2.5	3	27231.440	0.001	3.849
			3.5	3	2.5	3				2.5	2	1.5	2	27230.172	-0.002	2.725
			3.5	3	3.5	3				2.5	2	2.5	2	27229.471	0.002	2.565
			3.5	3	3.5	4				2.5	2	2.5	3	27229.118	0.001	3.244
			3.5	4	3.5	3				2.5	3	2.5	2	27228.734	0.001	2.841
			3.5	4	3.5	4				2.5	3	2.5	3	27228.463	-0.001	3.823
			3.5	4	4.5	4				2.5	3	3.5	3	27228.500	0.000	3.827
			3.5	4	4.5	5				2.5	3	3.5	4	27228.330	-0.000	4.716
2	1	2	1.5	2	1.5	2	3	0	3	2.5	2	2.5	3	16346.006	0.000	0.819
			2.5	2	2.5	2				2.5	3	3.5	3	16453.591	0.000	0.579
			2.5	2	2.5	3				2.5	3	3.5	4	16456.129	-0.001	0.805
			2.5	2	1.5	2				3.5	3	2.5	3	16479.711	0.002	0.742
			2.5	3	2.5	2				3.5	4	3.5	3	16492.805	-0.002	0.831
			2.5	3	2.5	3				3.5	4	3.5	4	16492.225	-0.003	1.154
			2.5	3	3.5	3				3.5	4	4.5	4	16493.962	0.001	1.153
			2.5	3	3.5	4				3.5	4	4.5	5	16493.261	0.001	1.513
