

Supplemental material for: Rotating turbulent thermal convection at very large Rayleigh numbers

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1 Heat transport for the non-rotating case

Figure 1 shows the Nusselt number when no rotation was present $Nu_0 = Nu(1/Ro = 0)$ as function of the Rayleigh number Ra . A power law fit to all data results in $Nu_0 \propto Ra^{0.314 \pm 0.002}$. This is in good agreement with previous measurement in the same cell (Ahlers *et al.*, 2009; He *et al.*, 2012) and also agrees with the Grossmann-Lohse model (Grossmann & Lohse (2000)).

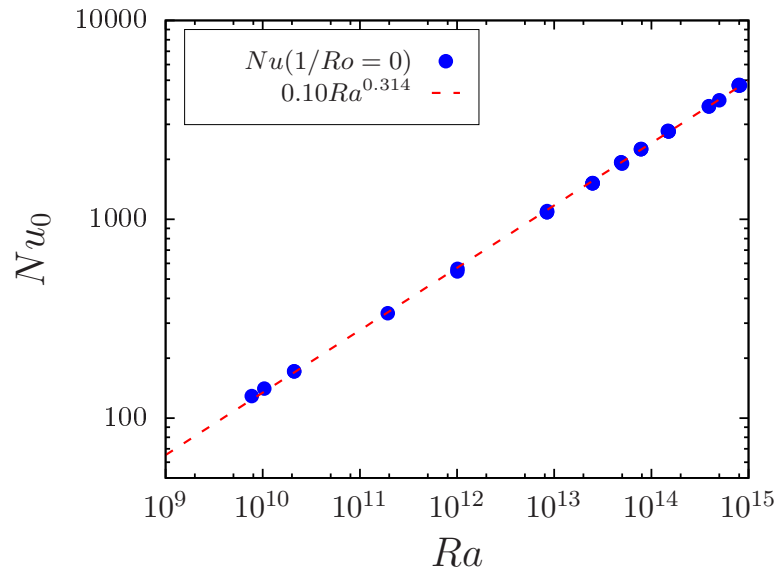


Figure 1: $Nu_0 = Nu(1/Ro = 0)$ as function of Ra . Red dashed line shows a fitted power law with $0.10Ra^{0.314 \pm 0.002}$.

2 Heat transport for the rotating case

We have made fits of the form $Nu \propto Ra^a Ek^b$ to data with sufficiently fast rotation $1/Ro > 1/Ro_2^* = 4.0$. While the best fit yields a value of $a = 0.54$ and $b = 0.46$, a closer look finds an extended residual minima valley for the fit parameters a, b . This is shown in fig. 2(a), where brighter color (yellow) shows a low residual value for the fit, while dark (dark blue) areas display high residuals. We find that any combination of a and b with $b = 0.85a$ fits the Nu data very well. For $a = 1, b = 0.85$, the Nu data with $1/Ro > 4$ is plotted in fig. 2b, with then $Nu \propto (RaEk^{0.85})^{0.54}$.

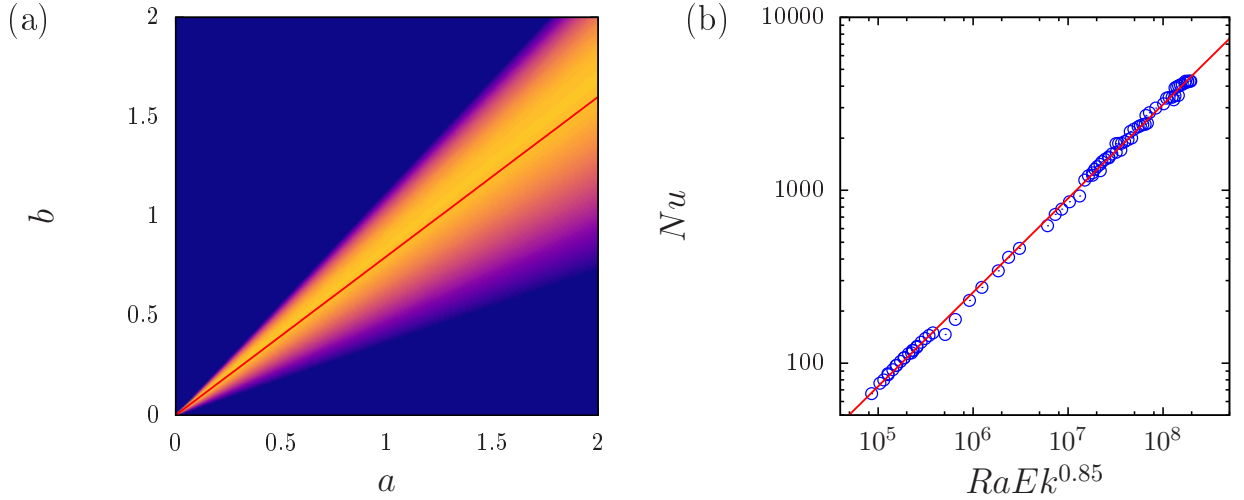


Figure 2: (a) fitted exponents a and b from $Nu = Ra^a Ek^b$ for data with $1/Ro > 4$ on a residual heatmap, where lighter color corresponds to lower residual in the fit. Residuals are the X^2 values of the fits $X^2 = \sum \left(\left(Nu - Nu_{fit}(Ra^a Ek^b) \right) / (Nu - \langle Nu \rangle) \right)$. The red line symbolizes $b = 0.85a$, for which residuals are equally at a minimum. (b) best fit for Nu as function of $RaEk^{0.85}$, corresponding to a point on the minima curve of (a). Red line is a power law fit to the data with $Nu \propto (RaEk^{0.85})^{0.54}$.

References

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3 Measurements

P [bar]	ΔT [K]	T_m [°C]	Ra	Pr	$1/Ro$	Ek	Fr	Nu
0.999	7.004	24.99	7.70e+09	0.718	0.000	∞	0.0000	128.99
0.993	7.000	25.00	7.60e+09	0.718	0.652	2.979e-05	0.0012	128.89
1.004	7.003	25.00	7.77e+09	0.718	1.034	1.860e-05	0.0031	128.70
1.003	7.006	25.00	7.76e+09	0.718	1.638	1.175e-05	0.0078	125.86
1.002	7.001	25.00	7.74e+09	0.718	2.597	7.418e-06	0.0197	124.15
0.990	7.002	25.00	7.56e+09	0.718	4.116	4.736e-06	0.0495	114.61
0.998	7.003	25.00	7.68e+09	0.718	5.180	3.732e-06	0.0784	106.99
1.000	7.000	25.00	7.70e+09	0.718	6.523	2.960e-06	0.1243	96.91
1.001	6.998	25.00	7.73e+09	0.718	8.213	2.347e-06	0.1970	86.85
1.004	6.998	25.00	7.76e+09	0.718	10.340	1.860e-06	0.3123	76.59
1.001	6.998	24.99	7.73e+09	0.718	13.048	1.477e-06	0.4972	66.60
0.994	9.545	24.99	1.04e+10	0.718	0.000	∞	0.0000	140.73
0.991	9.546	24.99	1.03e+10	0.718	0.559	2.986e-05	0.0012	140.95
0.994	9.544	24.99	1.04e+10	0.718	0.885	1.878e-05	0.0031	140.44
1.001	9.550	25.00	1.05e+10	0.718	1.403	1.177e-05	0.0078	138.42
1.003	9.553	25.00	1.06e+10	0.718	2.223	7.412e-06	0.0197	136.57
1.001	9.560	25.00	1.06e+10	0.718	3.139	5.255e-06	0.0393	133.15
0.995	9.534	24.98	1.04e+10	0.718	3.527	4.712e-06	0.0495	130.05
0.995	9.598	24.99	1.05e+10	0.718	3.944	4.199e-06	0.0623	127.26
0.995	9.596	25.00	1.05e+10	0.718	4.425	3.743e-06	0.0784	123.49
0.990	9.600	25.00	1.04e+10	0.718	4.965	3.352e-06	0.0987	118.63
0.992	9.603	25.00	1.04e+10	0.718	5.569	2.984e-06	0.1243	113.48
0.990	9.609	25.00	1.04e+10	0.718	6.247	2.665e-06	0.1565	107.77
0.993	9.612	25.00	1.04e+10	0.718	7.008	2.366e-06	0.1970	102.28
0.997	9.619	25.00	1.05e+10	0.718	7.860	2.102e-06	0.2478	97.19
0.998	9.622	25.00	1.05e+10	0.718	8.818	1.871e-06	0.3123	91.60
0.987	9.628	25.01	1.03e+10	0.718	9.892	1.686e-06	0.3930	85.81
0.980	9.629	25.01	1.02e+10	0.718	11.124	1.510e-06	0.4972	79.96
0.998	19.179	24.78	2.11e+10	0.718	0.000	∞	0.0000	171.75
0.996	19.177	24.78	2.10e+10	0.718	0.000	∞	0.0000	171.95
0.996	19.179	24.78	2.10e+10	0.718	0.394	2.968e-05	0.0012	171.70
0.996	19.178	24.78	2.10e+10	0.718	0.624	1.872e-05	0.0031	171.98
0.992	19.185	24.79	2.09e+10	0.718	0.989	1.185e-05	0.0078	170.12
0.990	19.206	24.80	2.08e+10	0.718	1.567	7.496e-06	0.0197	166.19
0.990	19.218	24.80	2.08e+10	0.718	2.483	4.731e-06	0.0495	163.72
0.993	19.231	24.81	2.09e+10	0.718	3.125	3.746e-06	0.0784	160.89
0.994	19.237	24.81	2.10e+10	0.718	3.506	3.336e-06	0.0987	156.98
0.989	19.231	24.81	2.08e+10	0.718	3.507	3.353e-06	0.0987	157.90
0.990	19.234	24.81	2.08e+10	0.718	3.934	2.986e-06	0.1243	154.52
0.984	19.243	24.82	2.06e+10	0.718	4.413	2.678e-06	0.1565	149.78
0.987	19.253	24.82	2.07e+10	0.718	4.950	2.380e-06	0.1970	144.63
0.993	19.269	24.83	2.10e+10	0.718	5.552	2.108e-06	0.2478	138.89
0.989	19.286	24.84	2.08e+10	0.718	6.227	1.886e-06	0.3123	132.12
0.987	19.310	24.85	2.07e+10	0.718	6.983	1.685e-06	0.3930	124.96
0.993	19.329	24.86	2.10e+10	0.718	7.849	1.489e-06	0.4972	118.22

Table 1: Data taken in the HPCF-II cell with N₂

P [bar]	ΔT [K]	T_m [°C]	Ra	Pr	$1/Ro$	Ek	Fr	Nu
5.050	4.998	22.00	8.44e+12	0.804	0.000	∞	0.0000	1099.37
5.041	4.998	22.00	8.41e+12	0.804	0.000	∞	0.0000	1084.81
5.039	5.004	22.00	8.41e+12	0.804	0.000	∞	0.0000	1084.77
5.049	4.992	21.99	8.43e+12	0.804	0.069	8.899e-06	0.0000	1098.73
5.047	4.998	22.00	8.43e+12	0.804	0.139	4.451e-06	0.0000	1097.52
5.048	4.999	21.99	8.44e+12	0.804	0.277	2.225e-06	0.0002	1088.79
5.046	4.998	22.00	8.43e+12	0.804	0.416	1.484e-06	0.0004	1085.88
5.045	4.998	21.99	8.42e+12	0.804	0.555	1.113e-06	0.0008	1084.15
5.045	4.999	21.99	8.42e+12	0.804	0.694	8.906e-07	0.0012	1076.46
5.045	4.999	22.00	8.42e+12	0.804	1.040	5.937e-07	0.0028	1058.75
5.046	4.999	22.00	8.43e+12	0.804	1.249	4.947e-07	0.0040	1051.56
5.047	4.999	21.99	8.43e+12	0.804	1.387	4.451e-07	0.0050	1049.37
5.047	4.998	21.99	8.43e+12	0.804	1.734	3.561e-07	0.0078	1042.41
5.045	5.001	21.99	8.43e+12	0.804	2.081	2.969e-07	0.0112	1032.71
5.047	5.002	22.00	8.44e+12	0.804	2.774	2.226e-07	0.0199	997.24
5.043	4.999	21.99	8.42e+12	0.804	3.468	1.782e-07	0.0311	966.17
5.045	5.000	22.00	8.43e+12	0.804	4.162	1.484e-07	0.0448	926.06
5.042	4.998	22.00	8.41e+12	0.804	5.550	1.114e-07	0.0796	857.42
5.045	5.001	22.00	8.43e+12	0.804	6.935	8.906e-08	0.1243	776.52
5.042	4.997	21.99	8.41e+12	0.804	8.326	7.427e-08	0.1790	724.56
5.045	5.002	22.00	8.43e+12	0.804	10.402	5.938e-08	0.2797	623.39
5.006	14.999	22.00	2.48e+13	0.804	0.000	∞	0.0000	1514.13
5.013	14.997	22.00	2.49e+13	0.804	0.000	∞	0.0000	1519.38
5.010	15.007	22.00	2.49e+13	0.804	0.000	∞	0.0000	1520.22
5.003	15.000	22.00	2.48e+13	0.804	0.040	8.986e-06	0.0000	1500.84
5.022	15.003	22.00	2.50e+13	0.804	0.080	4.475e-06	0.0000	1532.74
5.002	14.998	21.99	2.48e+13	0.804	0.160	2.247e-06	0.0002	1489.42
5.000	15.001	22.00	2.47e+13	0.804	0.240	1.499e-06	0.0004	1494.02
5.014	14.998	22.00	2.49e+13	0.804	0.321	1.121e-06	0.0008	1511.26
5.013	15.000	22.00	2.49e+13	0.804	0.401	8.967e-07	0.0012	1517.26
5.015	14.993	21.99	2.49e+13	0.804	0.601	5.975e-07	0.0028	1509.38
5.014	14.999	22.00	2.49e+13	0.804	0.721	4.981e-07	0.0040	1505.31
5.016	14.993	21.99	2.49e+13	0.804	0.802	4.481e-07	0.0050	1497.40
5.014	14.995	21.99	2.49e+13	0.804	1.002	3.586e-07	0.0078	1476.54
5.014	14.999	22.00	2.49e+13	0.804	1.202	2.988e-07	0.0112	1468.11
5.010	15.002	22.00	2.49e+13	0.804	1.603	2.243e-07	0.0199	1446.85
5.011	15.012	22.00	2.49e+13	0.804	2.003	1.794e-07	0.0311	1430.21
5.011	14.991	21.99	2.49e+13	0.804	2.405	1.495e-07	0.0448	1410.53
5.014	14.996	21.99	2.49e+13	0.804	3.206	1.121e-07	0.0796	1383.73
5.017	14.986	21.99	2.49e+13	0.804	4.810	7.466e-08	0.1790	1296.28
5.017	14.995	21.99	2.49e+13	0.804	6.011	5.972e-08	0.2797	1221.80

Table 2: Data taken in the HPCF-II cell with SF₆

P [bar]	ΔT [K]	T_m [°C]	Ra	Pr	$1/Ro$	Ek	Fr	Nu
9.935	4.999	21.99	4.88e+13	0.836	0.000	∞	0.0000	1931.94
9.938	5.006	22.00	4.89e+13	0.836	0.000	∞	0.0000	1932.48
10.003	5.015	22.00	5.00e+13	0.836	0.000	∞	0.0000	1903.96
9.922	4.995	21.99	4.86e+13	0.836	0.031	8.531e-06	0.0000	1918.65
9.930	5.000	21.99	4.88e+13	0.836	0.061	4.262e-06	0.0000	1926.76
9.940	4.998	21.99	4.89e+13	0.836	0.092	2.838e-06	0.0000	1933.25
9.932	4.999	22.00	4.88e+13	0.836	0.123	2.131e-06	0.0000	1926.88
9.940	4.994	21.99	4.89e+13	0.836	0.154	1.703e-06	0.0001	1929.78
9.941	5.000	21.99	4.89e+13	0.836	0.184	1.419e-06	0.0001	1932.84
9.949	4.999	22.00	4.90e+13	0.836	0.246	1.063e-06	0.0002	1940.57
9.948	4.992	21.99	4.89e+13	0.836	0.307	8.506e-07	0.0003	1934.67
9.948	5.001	21.99	4.90e+13	0.836	0.368	7.088e-07	0.0004	1937.18
9.950	4.997	21.99	4.90e+13	0.836	0.430	6.074e-07	0.0006	1938.19
9.952	4.997	21.99	4.91e+13	0.836	0.491	5.314e-07	0.0008	1937.56
9.954	4.998	21.99	4.91e+13	0.836	0.614	4.250e-07	0.0012	1934.38
9.953	4.978	21.98	4.89e+13	0.836	0.738	3.542e-07	0.0018	1923.72
9.954	5.007	22.00	4.92e+13	0.836	0.920	2.833e-07	0.0028	1904.06
9.958	4.999	21.99	4.92e+13	0.836	1.228	2.124e-07	0.0050	1888.94
9.958	5.003	22.00	4.92e+13	0.836	1.841	1.416e-07	0.0112	1867.15
9.960	5.004	22.00	4.92e+13	0.836	2.454	1.062e-07	0.0199	1836.91
9.946	4.960	21.97	4.86e+13	0.836	2.466	1.063e-07	0.0199	1819.53
9.938	5.009	22.00	4.90e+13	0.836	3.068	8.516e-08	0.0311	1788.86
10.006	5.003	22.00	4.99e+13	0.836	3.064	8.451e-08	0.0311	1750.08
9.936	5.005	21.99	4.89e+13	0.836	3.684	7.098e-08	0.0448	1747.71
9.935	5.006	22.00	4.89e+13	0.836	4.297	6.085e-08	0.0609	1704.62
9.934	5.005	21.99	4.89e+13	0.836	4.912	5.325e-08	0.0796	1656.61
9.937	4.979	21.99	4.87e+13	0.836	5.539	4.731e-08	0.1007	1619.68
9.932	5.013	22.00	4.89e+13	0.836	6.135	4.261e-08	0.1243	1555.56
10.010	4.993	21.99	4.99e+13	0.836	6.134	4.223e-08	0.1243	1539.65
9.931	5.001	22.00	4.88e+13	0.836	6.757	3.874e-08	0.1504	1507.54
9.931	5.001	22.00	4.88e+13	0.836	7.371	3.551e-08	0.1790	1461.27
10.011	5.036	22.01	5.03e+13	0.836	7.940	3.249e-08	0.2101	1411.19
10.013	4.999	21.99	4.99e+13	0.836	8.582	3.016e-08	0.2436	1367.74
10.010	5.012	22.00	5.00e+13	0.836	9.184	2.816e-08	0.2797	1321.97
10.013	5.004	22.00	5.00e+13	0.836	9.804	2.639e-08	0.3182	1260.73
10.008	5.017	22.00	5.01e+13	0.836	11.016	2.347e-08	0.4028	1211.50
10.014	5.014	22.00	5.01e+13	0.836	12.241	2.111e-08	0.4972	1144.17
9.936	7.992	21.99	7.81e+13	0.836	0.000	∞	0.0000	2248.86
9.967	7.975	21.98	7.87e+13	0.836	0.000	∞	0.0000	2255.68
9.936	8.025	22.01	7.84e+13	0.836	0.000	∞	0.0000	2252.81
9.936	7.994	21.99	7.81e+13	0.836	0.024	8.517e-06	0.0000	2247.56
9.909	8.014	22.00	7.77e+13	0.836	0.049	4.272e-06	0.0000	2229.37
9.933	7.990	21.99	7.80e+13	0.836	0.243	8.521e-07	0.0003	2251.80
9.928	7.995	21.99	7.79e+13	0.836	0.340	6.089e-07	0.0006	2256.04
9.978	7.973	21.98	7.89e+13	0.836	0.486	4.238e-07	0.0012	2269.16
9.976	8.011	22.00	7.92e+13	0.836	0.727	2.827e-07	0.0028	2257.83
9.918	7.962	22.00	7.74e+13	0.836	0.974	2.134e-07	0.0050	2194.82
9.968	8.006	22.00	7.90e+13	0.836	1.212	1.697e-07	0.0078	2213.15

Table 3: Data taken in the HPCF-II cell with SF₆

P [bar]	ΔT [K]	T_m [°C]	Ra	Pr	$1/Ro$	Ek	Fr	Nu
9.953	7.996	21.99	7.85e+13	0.836	1.456	1.417e-07	0.0112	2195.69
9.965	8.006	22.00	7.89e+13	0.836	1.940	1.061e-07	0.0199	2179.82
9.962	8.003	22.00	7.88e+13	0.836	2.426	8.492e-08	0.0311	2147.37
9.960	8.001	22.00	7.87e+13	0.836	2.912	7.079e-08	0.0448	2113.67
9.958	8.018	22.01	7.88e+13	0.836	3.394	6.070e-08	0.0609	2078.87
9.956	8.002	22.00	7.86e+13	0.836	3.882	5.311e-08	0.0796	2040.63
9.965	7.988	21.99	7.87e+13	0.836	4.370	4.716e-08	0.1007	2004.08
9.955	8.016	22.00	7.87e+13	0.836	4.849	4.250e-08	0.1243	1961.01
9.948	8.013	22.00	7.86e+13	0.836	5.336	3.867e-08	0.1504	1909.02
9.947	8.010	22.00	7.85e+13	0.836	5.822	3.545e-08	0.1790	1867.92
9.940	7.999	21.99	7.82e+13	0.836	6.312	3.275e-08	0.2101	1865.60
9.939	8.002	21.98	7.83e+13	0.836	6.797	3.041e-08	0.2436	1859.22
9.975	14.956	22.00	1.48e+14	0.836	0.000	∞	0.0000	2780.72
9.982	15.006	22.00	1.49e+14	0.836	0.000	∞	0.0000	2780.51
10.024	15.021	22.01	1.51e+14	0.836	0.000	∞	0.0000	2764.38
10.032	14.986	21.99	1.51e+14	0.837	0.000	∞	0.0000	2763.00
9.976	14.987	22.01	1.48e+14	0.836	0.177	8.480e-07	0.0003	2782.39
9.980	14.971	21.98	1.48e+14	0.836	0.355	4.237e-07	0.0012	2775.68
9.984	14.990	22.02	1.48e+14	0.836	0.709	2.118e-07	0.0050	2773.16
9.993	14.933	22.02	1.48e+14	0.836	1.065	1.411e-07	0.0112	2731.99
9.995	14.899	22.04	1.48e+14	0.836	1.421	1.058e-07	0.0199	2713.60
10.035	14.964	21.98	1.51e+14	0.837	1.770	8.421e-08	0.0311	2671.55
10.016	14.918	22.06	1.49e+14	0.836	2.130	7.038e-08	0.0448	2680.56
10.013	14.894	22.06	1.49e+14	0.836	2.842	5.280e-08	0.0796	2614.45
9.986	14.912	22.03	1.48e+14	0.836	3.197	4.707e-08	0.1007	2576.13
10.012	14.846	22.05	1.48e+14	0.836	3.558	4.225e-08	0.1243	2535.59
10.036	14.995	21.99	1.51e+14	0.837	3.537	4.211e-08	0.1243	2528.59
9.997	14.853	22.05	1.48e+14	0.836	3.915	3.847e-08	0.1504	2490.59
10.002	14.880	22.07	1.48e+14	0.836	4.266	3.525e-08	0.1790	2446.68
10.034	14.961	21.98	1.50e+14	0.837	4.603	3.240e-08	0.2101	2405.09
10.045	15.015	22.00	1.51e+14	0.837	4.948	3.005e-08	0.2436	2394.59
10.045	15.009	22.00	1.51e+14	0.837	5.302	2.804e-08	0.2797	2361.14
10.046	15.007	22.00	1.51e+14	0.837	5.655	2.629e-08	0.3182	2326.09
10.048	14.976	21.98	1.51e+14	0.837	6.368	2.336e-08	0.4028	2252.38
10.050	15.000	22.00	1.51e+14	0.837	7.070	2.102e-08	0.4972	2185.28
18.656	4.977	21.98	5.00e+14	0.964	0.000	∞	0.0000	3967.00
18.714	4.979	21.98	5.09e+14	0.966	0.878	9.926e-08	0.0050	3937.99
18.744	4.961	21.97	5.12e+14	0.967	2.195	3.962e-08	0.0311	3758.87
18.712	4.991	21.99	5.09e+14	0.966	3.070	2.837e-08	0.0609	3729.66
18.710	4.965	21.98	5.07e+14	0.966	3.957	2.206e-08	0.1007	3612.44
18.710	5.002	22.00	5.10e+14	0.966	4.381	1.986e-08	0.1243	3536.51
18.695	5.015	22.00	5.09e+14	0.965	4.818	1.808e-08	0.1504	3519.11
18.702	5.018	22.00	5.11e+14	0.966	5.252	1.656e-08	0.1790	3447.32
18.704	5.001	22.00	5.09e+14	0.966	5.698	1.528e-08	0.2101	3440.41
18.719	4.997	21.99	5.11e+14	0.966	6.133	1.418e-08	0.2436	3406.46

Table 4: Data taken in the HPCF-II cell with SF₆

P [bar]	ΔT [K]	T_m [°C]	Ra	Pr	$1/Ro$	Ek	Fr	Nu
18.722	7.985	22.00	8.17e+14	0.966	0.000	∞	0.0000	4706.21
18.654	8.015	22.00	8.04e+14	0.964	0.000	∞	0.0000	4718.35
18.702	7.973	21.98	8.12e+14	0.966	0.347	1.987e-07	0.0012	4752.99
18.685	8.005	22.00	8.11e+14	0.965	0.694	9.949e-08	0.0050	4736.00
18.672	8.022	22.01	8.09e+14	0.965	1.040	6.639e-08	0.0112	4656.73
18.660	8.011	22.00	8.05e+14	0.964	1.389	4.983e-08	0.0199	4625.02
18.651	8.004	22.00	8.03e+14	0.964	1.738	3.989e-08	0.0311	4581.92
18.645	7.966	22.02	7.96e+14	0.964	2.092	3.326e-08	0.0448	4528.80
18.640	8.021	22.01	8.01e+14	0.964	2.432	2.852e-08	0.0609	4501.59
18.638	8.012	22.00	8.00e+14	0.964	2.781	2.496e-08	0.0796	4453.30
18.633	8.012	22.00	7.99e+14	0.964	3.130	2.219e-08	0.1007	4400.01
18.632	8.020	22.00	8.00e+14	0.964	3.476	1.997e-08	0.1243	4349.14
18.638	8.013	22.00	8.01e+14	0.964	3.824	1.815e-08	0.1504	4309.14
18.641	8.009	22.00	8.01e+14	0.964	4.172	1.663e-08	0.1790	4276.55
18.646	7.988	21.99	8.00e+14	0.964	4.523	1.535e-08	0.2101	4273.40
18.649	7.997	22.00	8.02e+14	0.964	4.868	1.425e-08	0.2436	4266.67
17.827	10.014	22.00	7.97e+14	0.942	0.000	∞	0.0000	4736.45
17.814	10.017	22.00	7.95e+14	0.942	0.000	∞	0.0000	4714.73
17.816	10.004	22.01	7.94e+14	0.942	0.000	∞	0.0000	4703.02
17.795	9.997	22.01	7.89e+14	0.941	0.033	2.122e-06	0.0000	4708.02
17.809	9.980	22.00	7.91e+14	0.941	0.065	1.060e-06	0.0000	4700.77
17.814	9.985	22.00	7.92e+14	0.942	0.163	4.237e-07	0.0003	4709.45
17.815	9.982	22.00	7.92e+14	0.942	0.260	2.648e-07	0.0008	4730.84
17.818	9.971	21.99	7.92e+14	0.942	0.326	2.118e-07	0.0012	4741.54
17.813	9.969	21.98	7.92e+14	0.942	0.326	2.118e-07	0.0012	4750.01
17.811	9.998	22.00	7.93e+14	0.941	0.651	1.059e-07	0.0050	4739.54
17.820	9.999	22.00	7.95e+14	0.942	0.975	7.059e-08	0.0112	4665.87
17.822	10.008	22.00	7.96e+14	0.942	1.300	5.294e-08	0.0199	4642.99
17.827	10.005	22.00	7.97e+14	0.942	1.624	4.233e-08	0.0311	4619.50
17.823	10.018	22.01	7.96e+14	0.942	1.949	3.529e-08	0.0448	4583.00
17.825	10.011	22.00	7.97e+14	0.942	2.274	3.024e-08	0.0609	4542.27
17.826	9.975	21.98	7.95e+14	0.942	2.603	2.646e-08	0.0796	4498.29
17.832	10.000	22.00	7.98e+14	0.942	2.924	2.351e-08	0.1007	4452.14
17.836	9.960	21.98	7.96e+14	0.942	3.254	2.115e-08	0.1243	4400.98
17.839	10.008	22.00	7.99e+14	0.942	3.571	1.923e-08	0.1504	4354.42
17.841	10.022	22.01	8.01e+14	0.942	3.893	1.762e-08	0.1790	4329.55
17.845	10.006	22.00	8.01e+14	0.942	4.220	1.626e-08	0.2101	4275.72
17.851	10.022	22.01	8.03e+14	0.942	4.540	1.509e-08	0.2436	4223.40
17.850	10.017	22.01	8.02e+14	0.942	4.865	1.409e-08	0.2797	4176.68
17.806	9.994	22.00	7.91e+14	0.941	5.207	1.325e-08	0.3182	4093.33
17.849	9.991	21.99	8.01e+14	0.942	5.520	1.243e-08	0.3592	4065.04
17.853	10.005	22.00	8.02e+14	0.943	5.840	1.174e-08	0.4028	4008.58
17.855	10.020	22.01	8.04e+14	0.942	6.160	1.112e-08	0.4487	3955.47
17.857	9.996	22.00	8.03e+14	0.943	6.491	1.056e-08	0.4972	3903.08

Table 5: Data taken in the HPCF-II cell with SF₆

P [bar]	ΔT [K]	T_m [°C]	Ra	Pr	$1/Ro$	Ek	Fr	Nu
17.768	4.998	22.00	3.92e+14	0.940	0.000	∞	0.0000	3706.48
17.759	5.011	22.00	3.92e+14	0.940	0.000	∞	0.0000	3685.66
17.767	5.001	22.00	3.92e+14	0.940	0.046	2.126e-06	0.0000	3703.45
17.775	4.993	21.99	3.92e+14	0.941	0.092	1.062e-06	0.0000	3711.11
17.770	4.993	21.99	3.92e+14	0.941	0.231	4.250e-07	0.0003	3718.02
17.794	5.003	22.00	3.95e+14	0.941	0.368	2.652e-07	0.0008	3722.08
17.769	5.002	22.00	3.92e+14	0.940	0.461	2.126e-07	0.0012	3726.64
17.766	5.004	22.00	3.92e+14	0.940	0.691	1.417e-07	0.0028	3692.09
17.762	5.010	22.00	3.92e+14	0.940	0.921	1.063e-07	0.0050	3638.94
17.766	5.002	22.00	3.92e+14	0.940	1.383	7.086e-08	0.0112	3613.60
17.765	5.005	22.00	3.92e+14	0.940	1.843	5.316e-08	0.0199	3580.91
17.761	5.006	22.00	3.92e+14	0.940	2.304	4.254e-08	0.0311	3526.02
17.773	5.021	22.01	3.94e+14	0.940	3.220	3.036e-08	0.0609	3440.42
17.775	5.018	22.00	3.94e+14	0.941	4.140	2.361e-08	0.1007	3337.54
17.777	4.998	22.00	3.93e+14	0.941	5.530	1.770e-08	0.1790	3163.84
17.779	5.005	22.00	3.93e+14	0.941	6.907	1.416e-08	0.2797	2987.61
17.778	5.009	22.00	3.93e+14	0.941	8.286	1.180e-08	0.4028	2810.22
17.782	5.034	22.01	3.96e+14	0.941	9.184	1.062e-08	0.4972	2708.27
0.885	4.997	21.99	1.94e+11	0.784	0.000	∞	0.0000	336.62
0.887	5.002	22.00	1.95e+11	0.784	0.076	5.310e-05	0.0000	336.51
0.889	4.998	21.99	1.96e+11	0.784	0.189	2.118e-05	0.0001	335.71
0.891	4.999	21.99	1.96e+11	0.784	0.378	1.057e-05	0.0003	335.35
0.892	4.999	21.99	1.97e+11	0.784	0.756	5.280e-06	0.0012	333.73
0.893	4.999	22.00	1.98e+11	0.784	1.134	3.514e-06	0.0028	330.20
0.894	5.000	21.99	1.98e+11	0.784	1.512	2.633e-06	0.0050	325.26
0.895	5.001	21.99	1.98e+11	0.784	1.890	2.105e-06	0.0078	322.64
0.895	5.000	21.99	1.98e+11	0.784	2.268	1.754e-06	0.0112	318.99
0.895	5.004	22.00	1.99e+11	0.784	3.778	1.052e-06	0.0311	299.86
0.896	5.002	22.00	1.99e+11	0.784	5.290	7.507e-07	0.0609	274.38
0.897	5.010	22.00	1.99e+11	0.784	7.551	5.253e-07	0.1243	230.55
0.898	5.010	22.00	2.00e+11	0.784	11.326	3.498e-07	0.2797	179.03
0.898	5.005	22.00	2.00e+11	0.784	15.110	2.622e-07	0.4972	146.53
1.309	11.588	21.99	1.01e+12	0.786	0.000	∞	0.0000	563.09
1.308	11.600	22.00	1.01e+12	0.786	0.098	1.792e-05	0.0000	564.20
1.309	11.592	22.00	1.01e+12	0.786	0.246	7.164e-06	0.0003	563.62
1.309	11.577	22.00	1.01e+12	0.786	0.493	3.582e-06	0.0012	562.32
1.308	11.582	22.01	1.01e+12	0.786	0.985	1.792e-06	0.0050	552.10
1.308	11.581	22.01	1.01e+12	0.786	1.478	1.195e-06	0.0112	541.52
1.308	11.583	22.00	1.01e+12	0.786	1.724	1.024e-06	0.0152	541.92
1.309	11.581	22.01	1.01e+12	0.786	1.971	8.957e-07	0.0199	535.96
1.308	11.586	22.00	1.01e+12	0.786	2.956	5.973e-07	0.0448	519.20
1.309	11.562	22.02	1.01e+12	0.786	3.945	4.477e-07	0.0796	497.65
1.309	11.551	22.03	1.01e+12	0.786	5.427	3.256e-07	0.1504	460.73
1.309	11.532	22.05	1.01e+12	0.786	7.407	2.388e-07	0.2797	409.23
1.310	11.471	22.05	1.00e+12	0.786	9.902	1.790e-07	0.4972	341.79
1.308	11.577	22.01	1.01e+12	0.786	0.000	∞	0.0000	546.22

Table 6: Data taken in the HPCF-II cell with SF₆