

Table 1 List of conducted DNS for CHC (classical). The averaging time is based on the free-fall time T_{ff} . The spatial resolution is characterized by the local maxima of $\Delta V^{1/3}/\eta$, which is the local cell size $\Delta V^{1/3}$ compared to the Kolmogorov length scale $\eta = (\nu^3/\epsilon_u)^{1/4}$. The maximum values occurred in very narrow regions in the top corner, while the rest of the domain was well resolved. Global quantities like Nu and Re deviated less than 2 percent compared to simulations with approximately 2 times finer mesh resolution, which was tested for the case $Pr = 0.1$ and $Ra = 1e11$.

Pr	Ra	Resolution	T_{avg}/T_{ff}	$max(\Delta V^{1/3}/\eta)$	Nu	Re
0.1	1.00E+08	514x66x98	190	1.10	11.8	1742.4
0.1	3.00E+08	514x66x98	12390	1.99	17.3	2797.5
0.1	5.00E+08	514x66x98	12360	2.43	19.7	3391.7
0.1	7.00E+08	514x66x98	12460	2.74	21.2	3787.6
0.1	1.00E+09	514x66x98	15020	3.11	22.9	4294.9
0.1	2.00E+09	514x66x98	13500	3.93	26.2	5382.4
0.1	3.00E+09	514x66x98	15470	4.46	28.4	6114.4
0.1	5.00E+09	514x66x98	13890	5.21	31.5	7103.0
0.1	5.00E+09	1026x102x194	14580	2.88	31.8	7138.2
0.1	7.00E+09	1026x102x194	14800	3.19	33.8	7876.9
0.1	1.00E+10	1026x102x194	14400	3.53	36.2	8364.9
0.1	2.00E+10	1026x102x194	14820	4.49	41.6	9605.0
0.1	3.00E+10	1026x102x194	15020	5.19	45.0	10540.2
0.1	5.00E+10	1026x102x194	15300	6.16	49.7	11811.5
0.1	5.00E+10	1026x102x194	15300	6.16	49.7	11811.5
0.1	7.00E+10	1026x102x194	15810	6.84	53.2	12916.4
0.1	1.00E+11	1026x102x194	16200	7.53	57.1	14201.7
0.1	2.00E+11	1026x102x194	16570	9.01	65.9	17211.7
0.1	3.00E+11	1026x102x194	16740	9.94	71.8	19205.0
1	1.00E+08	258x34x50	4610	0.66	12.8	190.1
1	3.00E+08	258x34x50	15150	0.94	19.4	314.3
1	5.00E+08	258x34x50	16780	1.11	22.4	387.7
1	7.00E+08	258x34x50	18000	1.24	24.4	442.7
1	1.00E+09	258x34x50	7490	1.38	26.6	506.9
1	2.00E+09	258x34x50	22300	1.66	30.9	645.9
1	3.00E+09	258x34x50	23490	1.94	33.5	732.3
1	5.00E+09	514x66x98	14660	1.46	36.7	845.6
1	7.00E+09	514x66x98	15030	1.60	39.2	922.8
1	1.00E+10	514x66x98	17460	1.74	42.1	1006.9
1	2.00E+10	514x66x98	15340	2.17	48.5	1190.5
1	3.00E+10	514x66x98	15760	2.33	52.9	1329.8
1	5.00E+10	514x66x98	18840	2.75	59.2	1528.3
1	7.00E+10	1026x102x194	27970	1.98	64.4	1687.5
1	1.00E+11	1026x102x194	28030	2.07	69.7	1888.5
1	2.00E+11	1026x102x194	29140	2.39	81.4	2423.2
1	3.00E+11	1026x102x194	31410	2.42	89.5	2909.3
1	5.00E+11	1026x202x512	33040	1.25	69.2	3315.1
1	7.00E+11	1026x202x512	32070	1.57	109.5	4123.3
1	1.00E+12	1026x202x512	34840	1.75	119.0	4590.9
1	2.00E+12	1026x202x512	35290	2.23	140.3	5700.4
1	3.00E+12	1026x202x512	34430	2.63	154.2	6524.7
10	3.00E+08	258x34x50	3530	0.29	19.8	32.1
10	5.00E+08	258x34x50	6210	0.34	23.1	40.0
10	7.00E+08	258x34x50	6990	0.38	25.2	45.9
10	1.00E+09	258x34x50	340	0.42	27.5	52.7
10	2.00E+09	258x34x50	8780	0.51	32.1	68.0
10	3.00E+09	258x34x50	8160	0.57	35.1	77.8
10	5.00E+09	514x66x98	8650	0.43	38.7	90.8
10	7.00E+09	514x66x98	9200	0.43	41.8	101.2
10	1.00E+10	514x66x98	890	0.45	45.4	116.5
10	2.00E+10	514x66x98	840	0.55	53.3	151.3
10	3.00E+10	514x66x98	1520	0.62	58.5	172.1
10	5.00E+10	514x66x98	5730	0.73	65.7	206.5
10	1.00E+11	1026x102x194	7890	0.55	77.8	265.8
10	1.00E+11	1026x102x194	7890	0.55	77.8	265.8
10	2.00E+11	1026x102x194	1450	0.68	90.6	316.3
10	3.00E+11	1026x102x194	1270	0.76	99.6	368.7
10	5.00E+11	1026x102x194	1280	0.88	112.0	441.4
10	2.00E+12	1026x202x514	9510	0.71	152.0	740.7