

**Table 1: Mesh convergence study results — Boulder BLIR3,  $d_{eq} = 10.0$  cm**

$dp$ [m]	$N_{part}$ (est.)	Particles in $d_{min}$	Displ. [m]	$\Delta\%$	Rot. [deg]	$F_{SPH}$ [N]	$F_{cont}$ [N]	Time [min]
0.020	209K	2	3.495	—	95.8	166.4	2254	13.2
0.015	496K	3	3.433	1.8%	97.2	77.0	4915	11.7
0.010	1.7M	4	3.069	10.6%	60.3	45.3	131	23.7
0.008	3.3M	5	2.407	21.5%	87.2	34.9	3229	30.3
0.005	13.4M	8	1.725	28.4%	86.8	23.0	3083	117.8