Supplementary Material (ESI) for *Soft Matter*

Ordering of colloidal hard spheres under gravity: From monolayer to multilayer

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Table S1: Fugacity f and mean total area fraction η_{tot} in fluid and ordered phases under coexistence conditions from GCMC simulations.

Fig. S1: Snapshots from grain boundary simulations showing part of one GB.

Fig. S2: Translational correlations in ordered phases at phase coexistence.

Table S1: Fugacity f and mean total area fraction η_{tot} in fluid and ordered phases under coexistence conditions from GCMC simulations.

Pe	Fugacity at transition	η_{tot} of fluid phase	η_{tot} of ordered phase
Hard Disc	$3.65 \times 10^{5}*$	0.699	0.718
24	9.20×10^{6}	0.702	0.721
18	2.15×10^{7}	0.776	0.786
16	2.52×10^{8}	1.098	1.113
14	2.35×10^{8}	1.203	1.221
12.8	1.82×10^{8}	1.245	1.260
10	1.72×10^{8}	1.433	1.447
8	2.00×10^{8}	1.765	1.780
6	1.45×10^{8}	2.184	2.216

* Hard disc fugacity is given using 2d standard state;
equivalent 3d fugacity in limit Pe $\rightarrow \infty$ is $f = 3.65 \times 10^{5} \times$ Pe
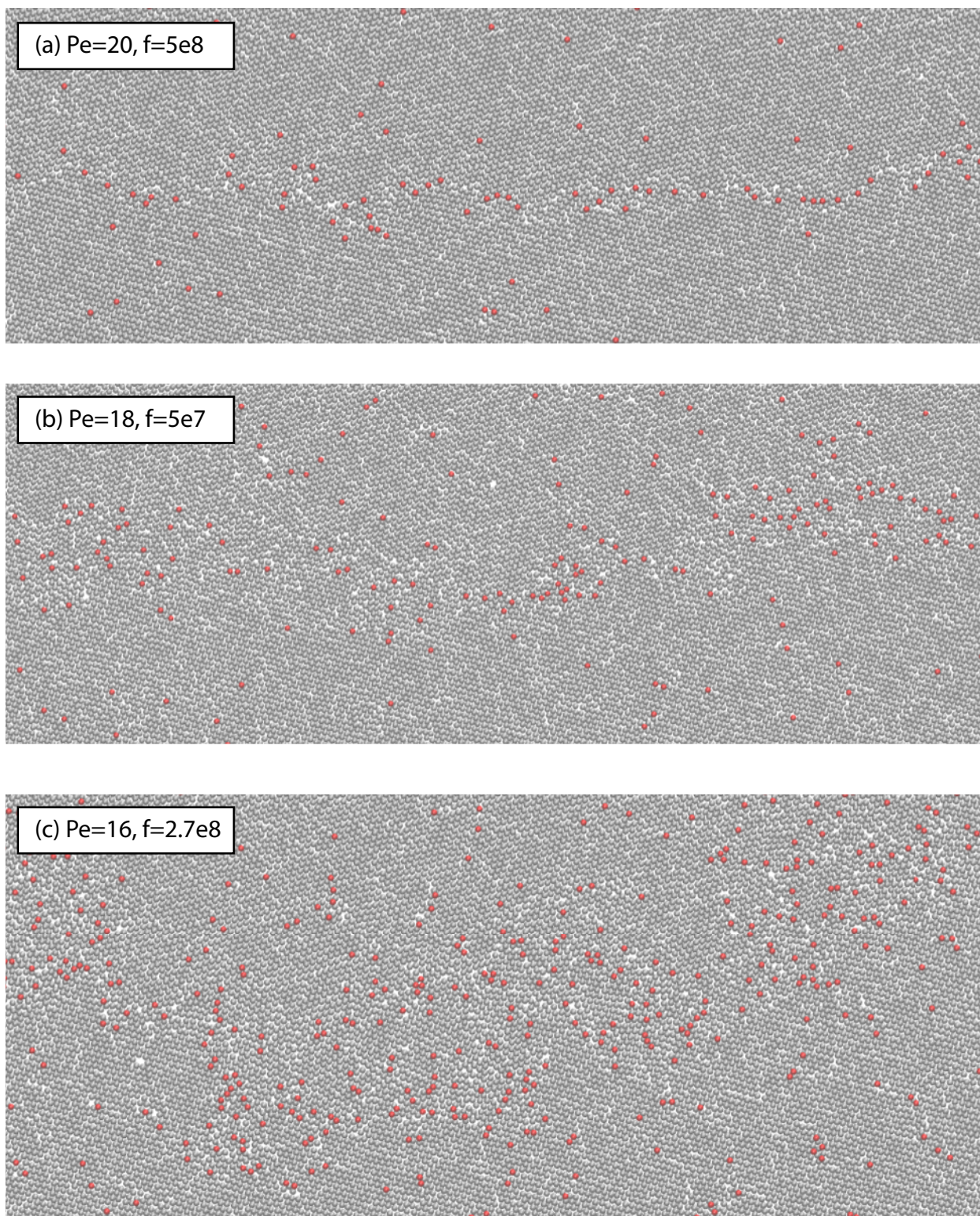
Fig. S1 Snapshots from grain boundary simulations showing part of one GB, with base layer ($z < 0.5\,\sigma$) particles colored in grey and particles in the height range $0.5\,\sigma < z < 0.8\,\sigma$ shown in red. Other overlayer particles are omitted.
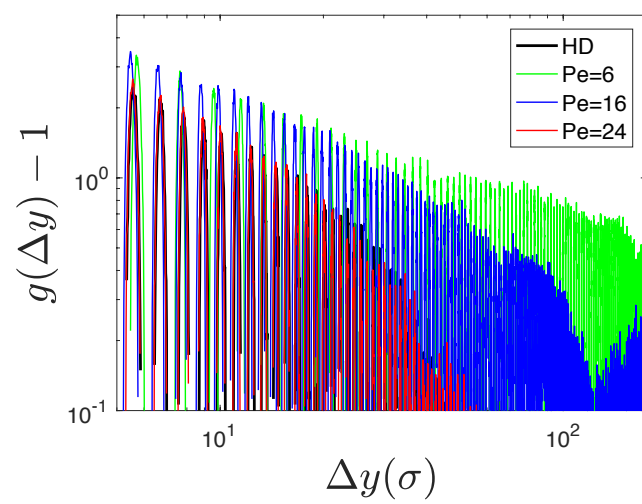
Fig. S2 Translational correlations in ordered phases at phase coexistence point.