

Supplementary material for the article:

## Lift on side by side disks within a granular flow

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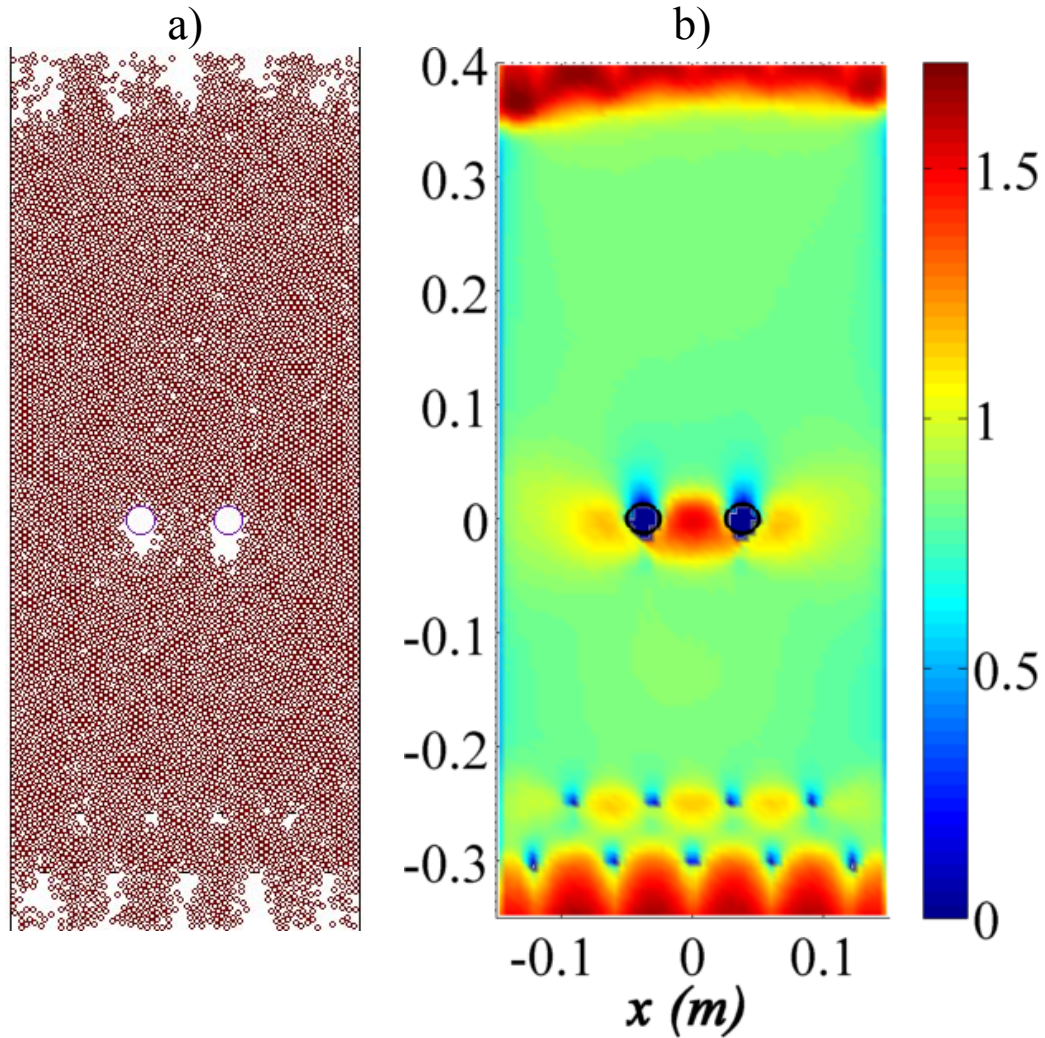


Figure 1: a) Snap shot of a simulation in the stationary state with  $X_{sep} = 5 \text{ cm}$  and  $U_{\infty} = 0.83 \text{ m/s}$ , which corresponds to an attractive lift force. b) Velocity field of the simulation shown in (a). The average velocity is measured in small squares of size  $d$  per side. The color code is in  $\text{m/s}$ .

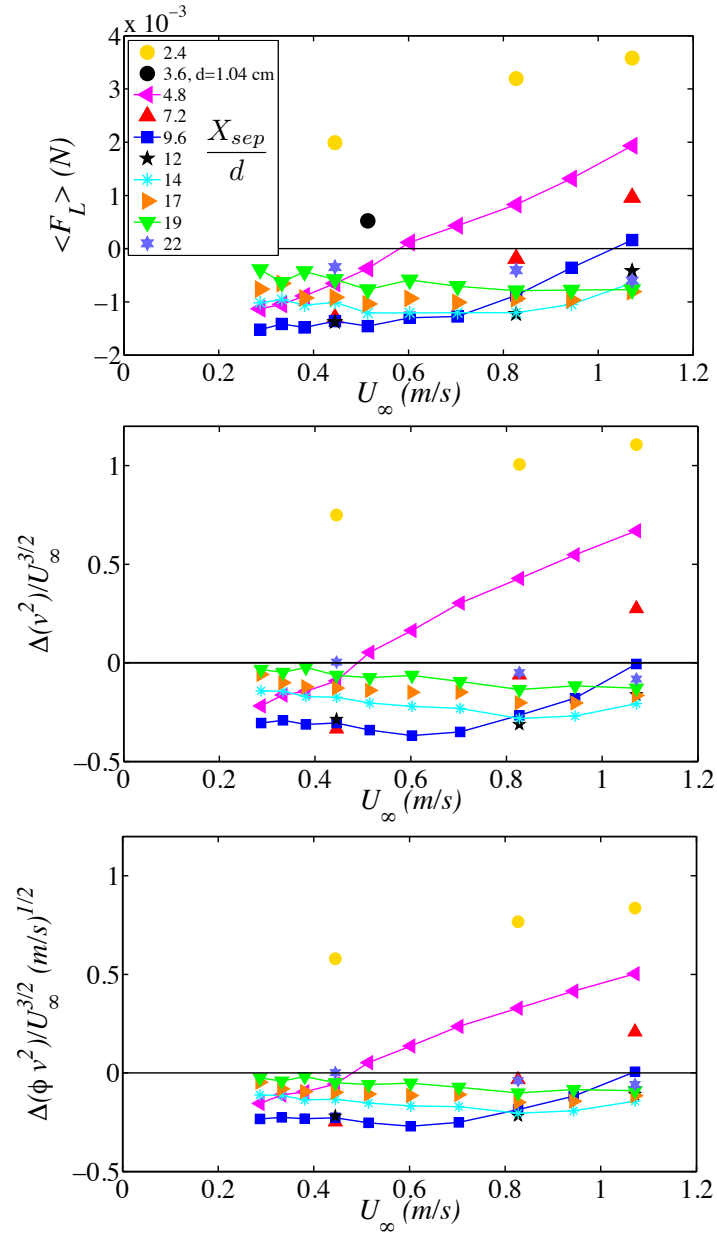


Figure 2: Effect of packing density.