

### Inlet particle distribution profile for simulation of particulate suspensions in pressure driven micro channel flow

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In simulation of particulate suspensions, periodic particle boundary condition can be used to describe symmetric simple geometry. However in case of complex and asymmetric geometry, it is not easy to apply proper particle boundary condition. To describe real flow condition of particulate suspensions, we have to apply proper inlet particle distribution condition. Because particles form microstructure which depends on interparticle force and flow condition, it is important to find fully developed particle distribution profile for each condition. In this work we have investigated the evolution of particle distribution profiles in the micro channel flow to find fully developed particle distribution profile. We dispersed particles uniformly at the inlet of the microchannel and checked the position of particles that passed through several checkpoints and outlet of the channel. The average particle distribution profile at each checkpoint was calculated statistically. We performed the simulation with various channel size and various types of interparticle forces. Brownian dynamic simulation method and self-consistent particle simulation method were used for this study.