

SIMULATION OF MICRO-CHANNEL FLOWS BY PARALLEL DSMC

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ABSTRACT: This paper is considering issues connected with parallelization of Direct Simulation Monte Carlo (later referred as DSMC). The method is applied to simulate gas flow in micro-channels. The general algorithm of DSMC can be divided into two steps: deterministic motion of particles and stochastic part, related to collisions of particles. This division also reflects in the way, how DSMC have to be parallelized. For the first part domain decomposition techniques are important, while the second step heavily depends on the parallel random number generator.