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Molecular Dynamic Simulation of Flow in a Channel with Oscillating Wall JOSEPH THALAKKOTTOR, KAMRAN MOHSENI, University of Florida — Molecular dynamic simulations are employed in order to investigate the effect of fluid inertia on slip at a solid surface. The accuracy of the numerical technique is verified by reproducing the steady state slip boundary condition for Couette flow at a solid surface reported by Thompson and Troian, Nature 1997. Numerical experiments are also conducted on Couette flow with oscillatory wall velocity in order to investigate the effect of fluid inertial on the slip boundary condition. Preliminary results indicate that the accelerating/decelerating wall velocities could have some effect of the slip value at the wall.

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