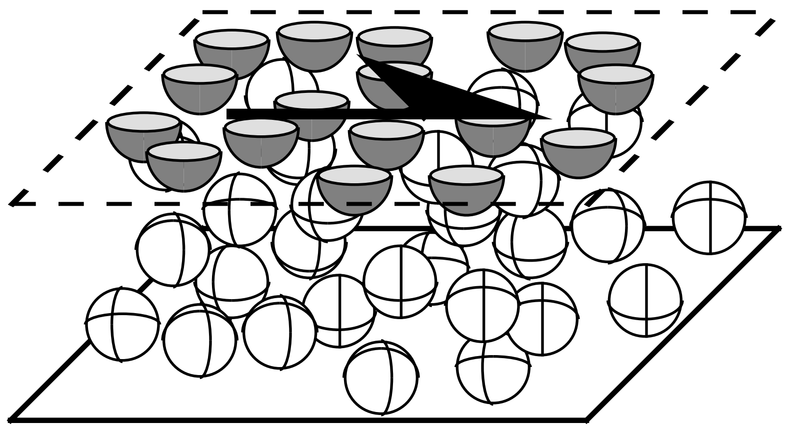
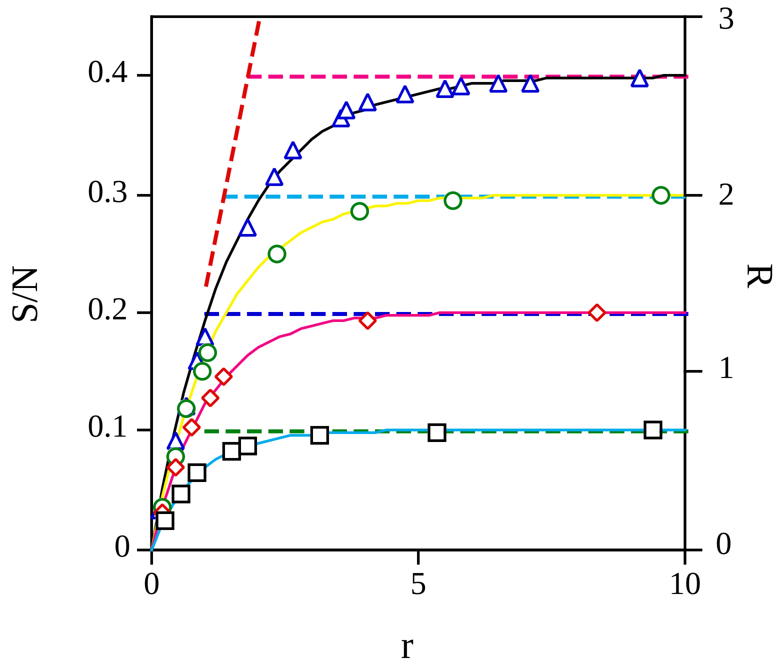
Louge, M.Y.: “Computer simulations of rapid granular flows of Spheres interacting with a flat, frictional boundary”, *Phys. Fluids* **6** (7), 2253-2269 (1994).

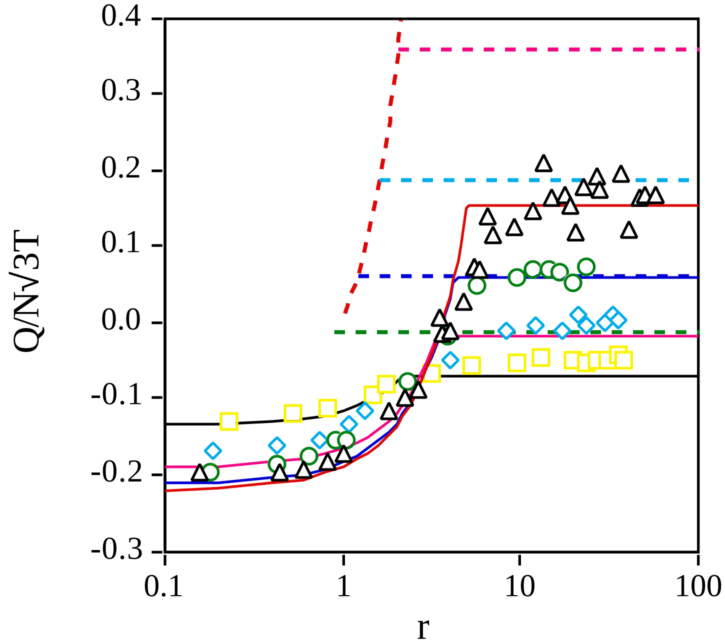
We employ computer simulations to test the theory of Jenkins [*J. Applied Mech.* **59**, 120-127 (1992)] for the interaction between a rapid granular flow of spheres and a flat, frictional wall. We examine the boundary conditions that relate the shear stress and energy flux at the wall to the normal stress, slip velocity, and fluctuation energy, and to the parameters that characterize a collision. We find that, while the theory captures the trends of the boundary conditions at low friction, it does not anticipate their behavior at large friction. A critical evaluation of Jenkins' assumptions suggests where his theory may be improved.

Figure excerpts





Variations of the dynamic friction coefficient with friction for the conditions $e=0.9$, $\beta_0=0$, $L_x/\sigma = L_y/\sigma = L_z/\sigma = 5.9$. The abscissa is the normalized slip from (14). The squares, diamonds, circles and triangles are $\mu=0.1$, 0.2, 0.3 and 0.4, respectively. The solid lines are the corresponding plots of (25). The oblique and horizontal dashed lines represent Jenkins' predictions in the "Large Friction/No Sliding" and the "Small Friction/All Sliding" limits, respectively. The right-hand axis shows the corresponding values of R.



Variations of the normalized flux of fluctuation energy with friction. The symbols and conditions are the same as in Fig. 2. The solid lines are the corresponding plots of equations (28) and (29). The oblique and horizontal dashed lines are the predictions of Jenkins in the "Large Friction/No Sliding" and the "Small Friction/All Sliding" limits, respectively.