Abstract Submitted for the DFD15 Meeting of The American Physical Society

Simulating immersed particle collisions: the Devil's in the details EDWARD BIEGERT, BERNHARD VOWINCKEL, ECKART MEIBURG, Univ of California - Santa Barbara — Simulating densely-packed particle-laden flows with any degree of confidence requires accurate modeling of particle-particle collisions. To this end, we investigate a few collision models from the fluids and granular flow communities using sphere-wall collisions, which have been studied by a number of experimental groups. These collisions involve enough complexities—gravity, particlewall lubrication forces, particle-wall contact stresses, particle-wake interactions—to challenge any collision model. Evaluating the successes and shortcomings of the collision models, we seek improvements in order to obtain more consistent results. We will highlight several implementation details that are crucial for obtaining accurate results.

> Edward Biegert Univ of California - Santa Barbara

Date submitted: 29 Jul 2015

Electronic form version 1.4