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A collision model for simulating dense suspensions EDWARD BIEGERT, BERNHARD VOWINCKEL, ECKART MEIBURG, University 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 will present the collision modeling strategy for our code PARTIES (PARTicle-laden flows via immersed boundarIES), which includes lubrication, normal contact, and tangential contact forces. While our strategy is based on other collision models, we will highlight several improvements we have made and then demonstrate the effectiveness of the collision model in reproducing experimental results for binary particle-wall collisions as well as bulk transport rates for a laminar shear flow over a bed of thousands of spheres.

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