

Abstract Submitted  
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**Rheology and segregation of a heterogeneous cohesive granular material** PIERRE JOP, CHARLES VOIVRET, EMMANUELLE GOUILLART, Surface du Verre et Interfaces, UMR 125 CNRS/Saint-Gobain, 39 quai Lucien Lefranc, 93300 Aubervilliers — Heterogeneous and cohesive granular flows are investigated by contact dynamic simulations. A given fraction of the spherical grains is cohesive and experience an attractive force at contact with other grains. We study first the rheology of such mixture in a shear plane geometry: we show that a simple law accounts for the influence of the cohesive fraction on the effective friction coefficient and provide some links to the microscopic structure. Then the segregation occurring when flowing under gravity on an inclined plane is investigated. We show that the segregation rate and its intensity depend on the cohesive force and on the amount of cohesive particles.

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