

Abstract Submitted
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DEM simulations of shear flow of spherical particles mixed with long granular rods OLEH BARAN, CD-adapco — Using Discrete Element Method (DEM) I investigate the effect of adding rigid rod-shape particles to the granular flow of spherical particles inside ring shear tester. The simulated geometry includes an annulus, bounded by two concentric cylindrical walls rested on a stationary bottom disk and covered with a top lid. Both the top lid and the bottom have protruding vanes oriented radially and uniformly spaced around the annulus, to prevent slipping of the bulk solid, see [image at this link](#). The top lid rotates with a controlled angular speed and applies a constant normal load to the tested material. I analyze the results for shear stress on the top lid as a function of time for the mixture of spheres and rods and compare these results with ones obtained for the same amount of spherical particles without rods. I also present the analysis of the orientation of granular rods in a shear flow and discuss the results in terms of new time-scale related to the mobility of rods.

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