

Abstract Submitted  
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**Experiments and models of particle slurries** KATHERINE VARELA, California State University, Long Beach, SARAH BURNETT, University of North Carolina, Chapel Hill, ANDREW LI, MATTHEW MOLINARE, University of California, Los Angeles, DIRK PESCHKA, Weierstrass Institute, Mohrenstr, Berlin, Germany, JEFFREY WONG, ANDREA BERTOZZI, University of California, Los Angeles — We present new experimental and theoretical results for the resuspension of bidisperse particle-laden flows on an inclined plane. In particular, we study the case of two negatively buoyant particle species of similar size and dissimilar densities in a viscous fluid of finite volume. Different regimes of particle separation are observed and studied by adjusting the angle of inclination, total particle concentration, and relative particle volume ratio. In addition to obtaining information about the height profile of shock formations, we measure the advancement and separation of particle and fluid front positions in mono- and bidisperse scenarios. These dynamics are the basis for a quantitative understanding of polydisperse cases, which can be readily applied to industry and catastrophe modeling.

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