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Numerical study of unsteady shear, and gravity-driven granular flows CHRISTOS VARSAKELIS, MILTIADIS V. PAPALEXANDRIS, Universite catholique de Louvain — In this talk, we report on the results of a numerical study for unsteady, shear-driven granular flows and granular flows over inclined planes. The numerical simulations have been performed with the application of a new algorithm for two-phase continua that has been recently developed by our team. After a short description of the algorithm, we present representative results of our numerical simulations. Further, we discuss the characteristics of the emerging flow structures and their dependence on certain physical parameters of the granular phase, such as, initial concentration, viscosity coefficient, etc. The talk concludes with a comparison of our numerical predictions at large times with those of previous studies on steady granular flows.

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