Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Jamming of Granular Flow in a Two-Dimensional Hopper[1] JUNYAO TANG, SEPEHR SADIGHPOUR, ROBERT BEHRINGER — We seek an understanding of the physics of jamming for hopper flow using high speed spatio-temporal video data for photoelastic disks flowing through a two-dimensional hopper. We have found experimental support for the hypothesis that jamming events of granular flow in a hopper is approximately a Poisson process. The mean flow time between two consecutive jams increases rapidly with the hopper opening size, but it is insensitive to changes of the hopper wall angle.Through particle tracking and photoleastic measurements, we measure stress fields, velocity fields and density fields, as well as their fluctuations during the flow. Current work is focusing on understanding how to combine these results to give us further insights of the relation between mean flow properties and jamming and their dependence on hopper configuration.These data are part of an IFPRI-NSF Collaboratory for comparing physical data and simulations.

[1]This work is funded by IFPRI. (International Fine Particle Research Institute)

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Date submitted: 16 Nov 2010 Electronic form version 1.4