

Abstract Submitted  
for the DFD17 Meeting of  
The American Physical Society

**Granular flow in silos with moving exit** KIWING TO<sup>1</sup>, Institute of Physics Academia Sinica — We conducted granular flow experiments of mono-disperse plastic beads falling out of a cylindrical silos through a circular orifice at the bottom. When the diameter of the orifice is about twice that of the beads, no finite flow rate can be sustained because of clogging at the orifice. We constructed a silo with a bottom that can rotate with respect to the wall of the silo. Then one can rotate the bottom of the silo so that the orifice can rotate (or move in a circle if the orifice is off centered) with respect to the beads. In such a silo with rotating bottom, a finite flow rate can be sustained. While the flow rate  $Q$  depends on the angular frequency  $\omega$  of the rotating bottom as well as the distance  $R$  of the orifice from the axis of the silo,  $Q$  at different  $\omega$  and  $R$  can be collapsed to a single curve when  $Q$  when plotted against the product of  $\omega$  and  $R$ .

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Date submitted: 25 Sep 2017

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