

# Flow of sheep through a bottleneck. Effect of the presence of an obstacle

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There are times when mobs have to pass through a bottleneck, such in the case of an emergency exit. If panic seizes the crowd, a jamming can obstruct the way out. This phenomenon displays many features that are also observed with inert particles (e.g. sand, cereal) when they choke the exit of a silo or clog pipe. Recent research has led to the discovery that an obstacle before the exit of a silo relieves the pressure near the orifice and the jamming probability decreases [1]. Although there are some works that suggest that this method is also valid to reduce the likelihood of clogging for live beings, it is a matter of fact that the procedure has not been definitively proved.

In this talk, recent experimental results of the flow of sheep through bottlenecks will be presented and compared with already existent computer simulations. In addition an analogy with the case of silo clogging will be introduced revealing the strong connection between these two apparently different scenarios.

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[1] I. Zuriguel, A. Janda, A. Garcimartín, C. Lozano, R. Arévalo, and D. Maza, Phys. Rev. Lett. **107**, 278001 (2011).