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Instabilities of granular flows down an inclined plane - the role of air entrainment TAMAS BORZSONYI, ROBERT ECKE, Los Alamos National Lab — The rheology of a granular flow down a rough inclined plane was investigated experimentally. It is known that at steeper inclinations the grain velocity is not negligible compared to the terminal velocity (the velocity by which a grain would free fall in air), giving rise to the question whether the role of air entrainment is an important factor in the development of experimentally observed pattern instabilities of the flowing granular system. In the present experiments the rheology of granular flows has been measured on a 2 m long rough plane in vacuum and in ambient air.

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