Axisymmetric Column Collapse in a Rotating System JAY WAR-NETT, PETER THOMAS, PETR DENNISENKO, University of Warwick UK — We discuss experimental and computational results of a study investigating the collapse of an initially axisymmetric cylindrical column of granular material within a rotating environment of air or liquids. In industry this type of granular column collapse that is subject to background rotation is encountered, for instance, in the context of the spreading of powders and fertilizers. In comparison to its non-rotating counterpart the physical characteristics of the column collapse in a rotating system are expected to be modified by effects arising from centrifugal forces and Coriolis forces. We compare our new results for the rotating flow to data available in the literature for the collapse of granular columns in non-rotating systems to highlight the differences observed.

Jay Warnett
University of Warwick UK

Date submitted: 12 Sep 2012