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Pore pressure control on slope failure of a saturated granular step YAO YOU, PETER FLEMINGS, DAVID MOHRIG, The University of Texas at Austin — Slope failure of granular sand and silt in water controls the release of sediments on the continental shelf and is an important process that delivers sand and silt into deep sea. Here we present a type of slope failure where the sediment grains are released in two modes: grain by grain release and collapsing of a slice that is a few hundred times grain diameter wide. We use flume experiments and pore pressure measurements to show that this type of slope failure is controlled by the generate and dissipation of pore pressure. The grain to grain release is associated with low pore pressure in the deposit, and collapsing of a slice occurs when the abnormally low pore pressure drains to a critical threshold. Collapsing of a slice generates pore pressure drop, which returns the mode of slope failure to grain by grain release.

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