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Numerical study of axisymmetric collapses of submarine granular > columns DAVIDE MONSORNO, CHRISTOS VARSAKELIS, Univ Catholique de Louvain — In this talk, we report on the results of a numerical study of the axisymmetric collapse of subaqueous granular columns. Our study is based on a 2-pressure, 2-velocity continuum flow model for fluid-saturated granular materials. This model is integrated via a multi-phase projection method that incorporates a regularization method for the treatment of material interfaces. In our simulations, a dense column of a granular material immersed in water is placed on a horizontal plane and is allowed to collapse and spread due to its weight. Emphasis is placed on the run-out distance and the termination height and their correlation with the aspect ratio, the volume fraction and the diameter of the grains. Comparisons against experimental measurements and previous numerical predictions are also performed. Finally, in order to examine and quantify the role of the interstitial fluid, we compare our numerical predictions against experimental results from column collapses of dry granular materials.

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