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# Erosion induced by localized fluid injection in a granular medium

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An elementary erosion process is studied by injecting locally an overpressured fluid in granular layers confined between two transparent plates. The fluid permeates through the porous material, but at sufficient injection speed it also erodes the surrounding materials, and creates high permeability channels. This elementary system, studied in open circular Hele-Shaw cells, is systematically studied and by classification of the patterns formed, is shown to display several regimes as function of the injection pressure. The direct comparison of the pattern formation and dynamics with a numerical hybrid model, coupling the description of the granular and fluid flow. This allows the direct validation of this model.