



## **Tight rock fracturing due to internal gas production**

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Dehydration of sediments in subduction zones, magma emplacements, primary migration of hydrocarbons from organic-rich shales, venting involve the generation and migration of fluids in low permeability rocks. In all these geological systems, the migration of fluid through rock matrix is coupled with deformation. Generated fluid causes pressure build-up and leads to fracturing. Cracks grow, coalesce and form network, providing escaping pathways for outgoing fluids. We use gelatin to study the main characteristics of this process. We model fluid production by mixing gelatin with yeast, which generates CO<sub>2</sub>. The system exhibit a complex dynamics with clear fracture-fracture interactions. The conduct experiments in a Hele-Shaw cell, allowing us to monitor the formation, growth and intermittent connection of cracks within the gelatin through time. Although the gelatin media does not perfectly reproduce rock properties, it helps understanding basic principles of fracturing of a low permeability elastic medium, induced by in-situ fluid pressure generation.