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Seminario

Influence of Stress on the Hydraulic Transmissivity of Thin Cracks in Rocks: application to water and hydrocarbon reservoirs and crustal fluid flow

Martedì, 27 febbraio 2018 – ore 16:30
Aula Arduino

Relatore: **Prof. Ernie Rutter**
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Abstract:

Few direct experimental determinations have been made of how shear and normal stresses affect hydraulic transmissivity of rocks, despite importance of flow through cracks in deep waste disposal, geothermal energy, and stimulation of hydrocarbon recovery. Here we measure crack flows in lab experiments, comparing granite, sandstone, and shale and show that small shear displacements greatly reduce crack conductivity. Cracks in granite and sandstone greatly enhance flow compared to porous flow, but this is not so for shales, which even in the cracked state form very effective, long-term sealing layers for oil, gas, and water..

Proponente: Giulio Di Toro