Geophysical Research Abstracts
Vol. 18, EGU2016-4653, 2016
EGU General Assembly 2016


# Random fracture networks: percolation, geometry and flow

Jean-Francois Thovert (1), Valeri Mourzenko (1), and Pierre Adler (2)
(1) Institut Pprime - CNRS, FTC, Poitiers, France (thovert@ensma.fr), (2) Metis, UPMC, Paris, France (pierre.adler@upmc.fr)

The basic properties of fracture networks are derived numerically and rationalized. Simple formulas are provided for an easy estimation of orders of magnitude, based on the excluded volume, on an associated dimensionless density and on shape factors. A general correlation is proposed for the percolation threshold in various types of networks, the blocks which are cut in the solid matrix by the network are characterized and an empirical formula is proposed for the permeability.