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Surface micro topography and dissolution progress to equilibrium. The example of gypsum (Ca SO_4, 2 H_2O) in water.

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Dissolution of minerals is generally the first phenomenon in a weathering process. As dissolution and equilibrium reached are not independents, the mechanisms by which this equilibrium is obtained are of primary importance. This experimental study is devoted to a micro-topographic observation of crystals during dissolution. The mineral studied here is gypsum (Ca SO_4, 2 H_2O) at laboratory temperature and the solvent pure water. A multi step dissolution is observed. A parallel is made with previous results obtained with calcite (Ca CO_3) and Olivine (Mg $_2$ SiO_4). Consequences for the behaviour of minerals during the beginning of weathering are developed.