Geophysical Research Abstracts
Vol. 20, EGU2018-10266, 2018
EGU General Assembly 2018

Interactions of Air-Water Interfaces with Colloids and Nanoparticles in Porous Media

Markus Flury (1) and Surachet Aramrak (2)

(1) Washington State University, Crop and Soil Sciences, Pullman, United States (flury@wsu.edu), (2) Department of Soil Science, Faculty of Agriculture Kasetsart University, Thailand

Air-water interfaces play an important role in unsaturated porous media. Phenomena like capillarity or evaporation are controlled by the configuration of air-water interfaces. Less recognized and understood are interactions of colloids with the air-water interface in porous media. Here we discuss experimental and theoretical methods to characterize and quantify interactions between air-water interfaces and colloids and nanoparticles in porous media. We show that these interactions depend on the size of the particles, i.e. particles in the micrometer size range will behave differently than particles in the nanometer size range. We also discuss how interaction with the air-water interface will affect transport of colloids and nanoparticles in soils and sediment.