

Simulations of subsurface flow and transport at the pore and continuum scales

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This poster will present recent results of simulations of subsurface and flow using both pore scale and continuum methods. Large scale simulations of pore scale flow and transport using the Smoothed Particle Hydrodynamic method (SPH) using more than 14 million particles have been performed. These simulations are focused on tracking the behavior of contaminants in the subsurface that can diffuse into individual grains in a porous media. Simulations are also being performed at the field scale using the Subsurface Transport Over Multiple Phases code (STOMP) using a novel, highly-resolved synthetic model of a braided streambed deposit to analyze the large scale transport of material in a deposit with multiscale heterogeneity. Both sets of simulations are being performed with codes that have been developed using component-based software engineering principles that result in highly modular codes with few dependencies between components.