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Transport of colloids in porous medium. HSIANG-KU LIN, ROYA ZANDI, LEONID P. PRYADKO, University of California, Riverside — Pathogenic microorganisms such as bacteria and viruses in groundwater cause over one million illnesses per year in the United States. Despite the considerable research, the transport of microorganisms (colloids) in porous media is not well understood. In the reported work, we present a phenomenological filtration model that describes transport of colloids and the dynamics of colloid deposition and release at the attachment sites. The model has a soliton-like solution for the filtering front separating “clean” anterior and “dirty” posterior regions. The computed breakthrough curves and time-dependent deposition curves are in good agreement with experimental measurements.

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