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Filtration and Clogging of Heterogeneous Particles for Rain Flood Artificial Recharge

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In this paper, we investigate the filtration and clogging process of rain floods where the particles are non-homogeneously distributed. The corresponding distribution is constantly changing and so is the filter coefficients. For this scenario, the initial filter coefficient is investigated based on a large amount of initial filtration test as well as filtration and clogging experiments. We propose an analytical formula for the initial filter coefficient estimation, based on which, the calculation results of the effluent particle distribution, effluent concentration, as well as head loss are compared with measurements. A good match is shown between the calculation and measurement results, moreover, the possible reason for mismatch in some certain regions is analyzed and discussed.