

# Upscaling of well singularities of flow transport through heterogeneous porous media

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There are three different scales in the flow transport through heterogeneous media involving well singularities: the size of the well, the size of the heterogeneity of the media, and the size of the computational domain. In this talk, we are going to develop a multiscale coarse grid algorithm to solve such problems. Optimal error estimates are derived for the locally periodic permeability. Numerical results will be reported. This is a joint work with Xinye Yue.