

## **Dispersion in Periodic Porous Media**

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Linear transport equation in spatially periodic porous medium is considered. The velocity is given by Darcy's law and the diffusion is assumed small with respect to the convection term. Effective properties of the medium are given by asymptotic expansion method. Numerical calculation of effective medium properties are presented. Effective permeability and diffusion are calculated by finite volume method. Homogeneous and heterogeneous simulations are performed by finite volume/mixed finite element method. Presence of boundary layers and high Peclet number are taken into account.