Homogenization Approaches for Draining in Layered Porous Media[1] DANIEL ANDERSON, George Mason University — Motivated by the problem of gravity currents in heterogeneous porous media, we examine the problem of gravitational drainage through a layered porous medium. In particular, for a one-dimensional drainage problem we focus on free boundary motion through layered media. We examine analytical and numerical solutions as well as ones generated by asymptotic approximations schemes that may prove useful in more general settings. Of particular interest is the identification of corrections to the leading-order approximations based on homogenization theory.

Daniel Anderson
George Mason University

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