1092-76-114   **Xiaoming Wang*** (`wxm@math.fsu.edu`). *Mathematical Analysis of the Cahn-Hilliard-Hele-Shaw Model.*

We investigate the Cahn-Hilliard-Hele-Shaw system that models two phase flow in a Hele-Shaw cell or porous media under the phase field approach. The global in time well-posedness in the two-dimensional case as well as the local in time well-posedness in the three-dimensional case will be presented. Long time asymptotic behavior of the solutions will be characterized as well. This is joint work with Hao Wu and Zhifei Zhang. (Received August 04, 2013)