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Drew Swartz and **Aaron Nung Kwan Yip*** (yip@math.purdue.edu), Dept. Math., Purdue University, 150 N. University Street, West Lafayette, IN 47907. *Dynamics of a second order gradient model for phase transitions.*

We prove in a radially symmetric geometry, the convergence in the sharp interfacial limit, to motion by mean curvature of a second order gradient model for phase transition. This is in spirit similar to the classical Allen-Cahn theory of phase boundary motion. However the corresponding dynamical equation is fourth order thus creating some challenging difficulties for its analysis. A characterization and stability analysis of the optimal profile are performed which are in turn used in the proof of convergence of an asymptotic expansion. (Received July 18, 2016)