

1046-65-1861

Susanne C. Brenner (brenner@math.lsu.edu), Center for Computation and Technology, Johnston Hall, Louisiana State University, Baton Rouge, LA 70803, **Thirupathi Gudi*** (tgudi@cct.lsu.edu), Center for Computation and Technology, Johnston Hall, Louisiana State University, Baton Rouge, LA 70803, and **Li-yeng Sung** (sung@math.lsu.edu), Department of Mathematics, Lockett Hall, Louisiana State University, Baton Rouge, LA 70803. *A C^0 Interior Penalty Approximation of the Cahn-Hilliard Equation in Phase Separation.*

C^0 Interior Penalty method is an attractive alternative for the numerical approximation of fourth order problems. It is based on C^0 finite element spaces and an interior penalty on the jumps of the normal derivatives over the skeleton of the finite element mesh. In this talk, I will present some theoretical and numerical results related to the numerical approximation of the Cahn-Hilliard equation by a C^0 interior penalty method. This is joint work with Professor Susanne C. Brenner and Professor Li-yeng Sung. (Received September 16, 2008)