

**Meeting:** 1003, Atlanta, Georgia, SS 28A, AMS-SIAM Special Session on Reaction Diffusion Equations and Applications, I

1003-35-1097      **M. Affouf\*** (maffouf@kean.edu), Dept. of Mathematics, Union, NJ 07083. *Asymptotic behavior for the evolution of spinodal decomposition with elastic deformation.* Preliminary report.

We consider a coupled system of one-dimensional PDE describing the evolution of spinodal decomposition undergoing elastic deformations.

This system of equations is of Cahn-Hilliard type for the diffusive material coupled with wave propagation equation for the displacement. In this study, we show the exponential decay of solutions for initial-boundary problem using energy estimates. Stability questions are also explored. (Received October 03, 2004)