M. Affouf* (maffouf@kean.edu), Dept. of Mathematics, Union, NJ 07083. \textit{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)