1067-35-1416 **M Affouf*** (maffouf@kean.edu), 1000 Morris Ave, Union, NJ 07083. *A numerical and analytical study of a variable-type equation.*

In this paper, we consider a fourth-order nonlinear partial differential equation modeling complex flows and transitions in material applications. The viscosity coefficient is a non convex function depending on gradient. The changing sign of viscosity leads to an alternating equation type. We derive a priori estimates for the solution of boundary-value problems. The structure and dynamics of interfaces and travelling wave solutions are numerically explored. (Received September 20, 2010)