962-34-1426 **Kuppalapalle Vajravelu*** (vajravel@pegasus.cc.ucf.edu), University of Central Florida, Department of Mathematics, Orlando, FL 32816, **John R Cannon** (jcannon@pegasus.cc.ucf.edu), University of Central Florida, Department of Mathematics, Orlando, FL 32816, and **David Rollins** (drollins@pegasus.cc.ucf.edu), University of Central Florida, Department of Mathematics, Orlando, FL 32816. *Analytical and Numerical Solutions of Nonlinear Differential Equations Arising in Non-Newtonian Fluid Flows.*

Solutions for a class of nonlinear second order differential equations, arising in a viscoelastic fluid flow at a rotating cylinder, are obtained. Furthermore, using the Shauder theory and the perturbation technique existence, uniqueness and analyticity results are established. Moreover, the exact analytical solutions (in integral form) are compared with the corresponding numerical ones. (Received October 04, 2000)