

Initial-Boundary-Value Problem of Hyperbolic Equations for Viscous Blood Flow through a Tapered Vessel

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Abstract: In this paper, the effect of viscosity on blood flow through a tapered artery is studied. Approximate solutions of the coupled nonlinear partial differential equations that model the viscous blood a complaint artery are obtained using Adomian decomposition method (ADM). The convergence and parametric study of the solution are presented and discussed including shock development. The result of the computation shows that viscosity has significant influence on blood flow.

Keywords: Blood flow, ADM, Shock waves, Conservation law.