

## A NUMERICAL AND ANALYTICAL APPROACH FOR SOLVING NONLINEAR WATER HAMMER EQUATIONS

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### ABSTRACT

*The nonlinear equations of motions and equation of continuity for water hammer problem in the pipe line systems are solved numerically by applying explicit central difference method and an attempt is made to solve these nonlinear equations analytically with suitable initial and boundary conditions. The dependence of flow and pressure head in pipe on the valve closure time at different points in the pipe is discussed. The negative flow and very high pressure head is observed at some points in the pipe which is due to upstream wave during sudden closer of valve.*

**KEYWORDS:** Equation of Continuity for Water, To Upstream Wave

**Received:** Nov 04, 2015; **Accepted:** Nov 16, 2015; **Published:** Nov 21, 2015; **Paper Id.:** IJMCARDEC20155