

Abstract—This paper examines the simulation of a 1D half nonlinear shallow water model using a staggered grid scheme for comparing with experiment results. Here, the experiment of the moving bottom problem in one-directional horizontal is given. The experiment was built in a glass basin with an obstacle as the moving bottom. Indeed, the impact of moving the bottom in shallow water can generate surface waves with various elevation values. The results showed that numerical simulation using nonlinear shallow water equations is close enough with the experimental data. The comparison of water elevation from simulation results and experimental data is observed in three gauge which are shown as G_1 , G_2 , and G_3 . Using the initial condition of water elevation 0.1 m , then the error measurement of each gauge are obtained less than 10^{-3} .

Keywords: *Shallow Water Equations, Half Nonlinear, Staggered Grid, Experiment.*