



Dynamics of strongly nonlinear waves on sea surface

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The Korteweg- de Vries equation is appropriate model to describe weakly nonlinear weakly dispersive water waves. Whitham in his book “Linear and Nonlinear Waves” (1974) suggested to modify the Korteweg – de Vries equation incorporating the full dispersion of water waves. As a result, the integro-differential equation was derived and its solutions are obtained numerically. In given paper we suggest to incorporate the full nonlinearity of water waves and weak dispersion. In this case only nonlinear term is modified in the Korteweg-de Vries equation. This “strongly nonlinear” Korteweg- de Vries equation is solved analytically for the solitary waves. Unsteady dynamics of the nonlinear waves is investigated numerically.