



Numerical simulations of in-situ freak waves in variable depth conditions

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Evolution of in-situ rogue waves is simulated numerically by means of two approaches, the nonlinear Schrodinger equation for wave modulations, and the Korteweg – de Vries equation. The rogue wave time series and the bathymetry correspond to conditions of four buoys deployed in the coastal area of Taiwan. Large amount of instrumental measurements by the buoys is collected, and a few time series of rogue waves are selected for the present investigation. The coastal area needs employment of variable-depth versions of the evolution equations. In some situations both the models may be used simultaneously. Similarities and differences in the results provided by the two approaches are discussed. The most attention is focused on the evolution of average wave parameters, and dynamics of the rogue wave, in particular, estimating of the freak wave life time.