Nonlinear evolution of compound solitons of intense internal waves in tme media with variable parameters

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In this report we discuss the evolution of strongly nonlinear solitary internal waves close to the limiting tabletop solitons of Gardner equation with variable coefficients within the framework of the modified perturbation theory (the soliton is represented as a compound of two kinks).The specific features of the behavior of intense solitons of internal waves in the region near the critical point where the quadratic nonlinear coefficient of the Gardner equation tends to zero are considered. The studied situation is typical for the shelf zone, where the stratified liquid layers (in a two-layer fluid) have approximately the same thickness. The field structure of the distorted quasisoliton was described, and its characteristic size and field magnitude were found not to differ strongly from the limiting values for tabletop soliton. Note that according to the traditional quasistationary description, the soliton amplitude tens to zero in this point. Comparison with the results of known real data and numerical computations demonstrate the efficiency and adequacy of the modified approach.