Weakly damped soliton dynamics in the random shallow sea

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Unidirectional wave propagation in the random shallow sea can be described in the framework of the forced Korteweg - de Vries - Burgers equation. The one-soliton solution of this equation is obtained using the asymptotic theory for a case of weak turbulent diffusion and slow spatial variation of the atmospheric pressure. Statistical characteristics of the soliton parameters are studied. It is shown that three asymptotics in the process of soliton propagation exist for certain conditions, when the solitary wave shape is varied from soliton-like to Gaussian, and then to soliton-like again. Detail calculations are given for the "table" distribution function, when the KdV soliton transforms to the "table" soliton; last shape is appear in the theory of large-amplitude internal waves in the two-fluid ocean. The dynamics of the undular bore in the random media is studied also.