Modeling weakly two-dimensional water wave motions

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Abstract:

Strongly nonlinear models for two-dimensional surface and internal waves in shallow water will be described and their numerical solutions will be presented for the propagation and interaction between large amplitude solitary waves. In addition, under the assumption that the wave motions are weakly two-dimensional, their reduction to simpler models will be discussed and its validity will be examined in comparison between the fully and weakly two-dimenional model solutions. Joint work with Arnuad Goullet and Qiyi Zhou (NJIT).