

# Numerical Analysis of long-wave models for surface water waves

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## **Abstract**

In this talk, attention will be given to long-wave (shallow water) models that describe two-way propagation of surface water waves, approximating the 2d Euler equations. These will include the nonlinear hyperbolic system of the shallow water equations, the weakly nonlinear dispersive Boussinesq systems, the fully nonlinear dispersive Serre (or Green-Naghdi) equations, and the Camassa-Holm equation. A survey will be given of issues such as modelling, well-posedness of the various models, and the numerical analysis of these systems. Results of numerical experiments that illuminate properties of solitary-wave solutions of the dispersive systems will also be shown.

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