



Water wave model with accurate dispersion and vertical vorticity

Onno Bokhove

University of Twente, Applied Mathematics, Enschede, Netherlands (o.bokhove@math.utwente.nl)

Cotter and Bokhove (Journal of Engineering Mathematics 2010) derived a variational water wave model with accurate dispersion and vertical vorticity. In one limit, it leads to Luke's variational principle for potential flow water waves. In the another limit it leads to the depth-averaged shallow water equations including vertical vorticity. Presently, focus will be put on the Hamiltonian formulation of the variational model and its boundary conditions.