New asymmetric gravity-capillary and flexural waves

Jean-Marc Vanden-Broeck, University College London

Nonlinear waves propagating at a constant velocity at the surface of a fluid are considered. Gravity and surface tension are included in the dynamic boundary condition. Most classical solutions are symmetric. We show that there are in addition new types of asymmetric waves. These include periodic waves, solitary waves and generalised solitary waves. The corresponding problems for flexural waves are also discussed