1016-35-34 **Philippe Guyenne*** (guyenne@math.udel.edu), Department of Mathematical Sciences, 501 Ewing Hall, University of Delaware, Newark, DE 19716-2553. *Water Waves Over Bottom Topography.*

We will present a numerical method for the simulation of surface water waves over bottom topography. It is based on a series expansion representation of the Dirichlet-Neumann operator in terms of the surface and bottom variations (see Craig & Sulem, *J. Comp. Phys.* 108, 73–83, 1993; Craig, Guyenne, Nicholls & Sulem, *Proc. R. Soc. A* 461, 839–873, 2005). A pseudospectral method using the fast Fourier transform is used for the discretization of the equations. Some applications of periodic and solitary waves propagating over beach slopes and sinusoidal ripples will be shown.

This is a joint work with D. P. Nicholls (University of Illinois at Chicago). (Received January 11, 2006)