

---

**MAXIME GAZEAU**, University of Toronto

*Spectral gaps and Bloch decomposition for the linearized Water-Waves equations*

In this talk, I will consider the spectral problem for the Dirichlet – Neumann operator of the unperturbed free surface associated to the linearized water-waves equations about equilibrium. In the case in which the bottom boundary is a small periodic perturbation of constant depth, this spectral problem admits a Bloch decomposition in terms of Bloch eigenvalues and eigenfunctions that can be constructed analytically. I will describe this construction and show that the spectrum consists of a series of bands separated by spectral gaps. This is a joint work with W. Craig, C. Lacave and C. Sulem.