

1116-35-1293 **Katie L Oliveras*** (oliveras@seattleu.edu), Seattle University, Mathematics Department, 901 12th Ave, Seattle, WA 98122, and **Vishal Vasan**. *Stability of Waves with Vorticity*.

Euler's equations describe the dynamics of gravity waves on the surface of an ideal fluid with arbitrary depth. In this talk, we discuss the stability of periodic traveling wave solutions for the full set of Euler's equations with constant vorticity via a generalization of a non-local formulation of the water wave problem due to Ablowitz, et al., and Ashton & Fokas. We determine the spectral stability for the periodic traveling wave solution by extending Fourier-Floquet analysis to apply to the non-local problem. We will discuss some interesting and new relationships between the stability of the traveling wave with respect to long-wave perturbations and the structure of the bifurcation curve for small amplitude solutions. (Received September 18, 2015)