Ypatia 2022 - June 8-10, 2022

vendredi 10 juin 2022

Abstract: We discuss the existence small amplitude, quasi-periodic in time, traveling waves on the surface of an infinitely deep perfect fluid under gravity. The proof uses normal form theory and Nash-Moser scheme to deal with the combined problems of small divisors and the fully-nonlinear nature of the equations. The lack of parameters, like the capillarity or the depth of the ocean demands a refined nonlinear bifurcation analysis involving non-trivial resonant wave interactions, as the well-known "Benjamin-Feir resonances". (10:45 - 11:05)