

**Speaker: Gigliola Staffilani**

**Title:** Some recent developments in wave turbulence theory

**Abstract:** In this talk I will present two different approaches in the study of wave turbulence theory. The first, introduced by Bourgain, consists in analyzing the long time behavior of high Sobolev norms for the defocusing, cubic NLS equation on 2D tori (periodic solutions). In this context I will emphasize how the rationality or irrationality of the torus affects the analysis. The second approach deals with the rigorous derivation of the 3-wave kinetic equation from a weakly nonlinear multidimensional KdV type equation.