

**Speaker: Sergey NAZARENKO (Insitute de Physique de Nice, France)**

**Title:** Wave Turbulence: derivation, solutions, validation

**Abstract:** I will start by overviewing the basic concepts and examples of Wave Turbulence (WT). I will use the Gross-Pitaevskii equation (GPE) as the master example and derive the Wave-Kinetic Equation for the waveaction spectrum. I will introduce the concept of the direct and the inverse cascades, and derive the respective Kolmogorov-Zakharov (KZ) stationary spectra. I will present numerical results validating the WT predictions of the KZ spectra. After that I will discuss non-stationary WT including non-gaussian fields and the evolution of the probability density functions (PDF) of the wave amplitudes. Finally I will present numerics testing the WT predictions for the non-stationary self-similar evolution of the spectra and the PDFs.