1151-35-125   **MINH-BINH TRAN***, Southern Methodist University, Math Department, Dallas, TX 75275.
On the Energy Cascade of 3-Wave Kinetic equations: Beyond Kolmogorov-Zakharov Solutions.

In weak turbulence theory, the Kolmogorov-Zakharovspectra is a class of time-independent solutions to the kinetic wave equations. In this talk, we construct a new class of time-dependent isotropic solutions to the decaying turbulence problems (whose solutions are energy conserved); with general initial conditions. These solutions exhibit the interesting property that the energy is cascaded from small wavenumbers to large wavenumbers. The existence of this class of solutions is, in some sense, the first complete rigorous mathematical proof based on the kinetic description for the energy cascade phenomenon for waves with quandratic nonlinearities. This is joint work with Avy Soffer. (Received August 14, 2019)