

Francesco Cellarosi. Supersymmetric quantum mechanics, exponential sums, and homogeneous dynamics.

Abstract. SUSY quantum mechanics is concerned with the study of quantum evolution of two so-called “partner Hamiltonians”. I will describe a limit theorem for autocorrelation functions for a class of SUSY quantum systems (Pöschl-Teller potentials) at random times. Autocorrelation functions in this setting correspond to a pair of exponential sums with two different weights. The result is based on the equidistribution of closed horocycles under the action of the geodesic flow in a suitably defined homogeneous space, and Ratner theory. The main results in this talk are based on a joint work with Jens Marklof.
