

Title: Evolution of Aharonov-Berry superoscillations in Dirac delta-potentials

Abstract: The main goal in this talk is to investigate the time evolution of superoscillations under the 1D-Schrödinger equation with attractive or repulsive Dirac delta-potential located at the origin of the real line. Such potentials are of particular interest since they simulate short range interactions and the corresponding quantum system is an explicitly solvable model. Moreover, we give the large time asymptotics of this solution, which turn out to be different for the repulsive and the attractive model. The method that we use to study the time evolution of superoscillations is based on the continuity of the time evolution operator acting in a space of exponentially bounded entire functions. This talk is based on a joint work with Fabrizio Colombo and Peter Schlosser.