

abstract

MEMBERS SEMINAR

Topic:

Speaker:

Affiliation:

Date:

Time/Room:

Random waves have been investigated since the 1940's in connection with modeling telephone signals (Rice), to model sea waves (Longuet-Higgins), and since the 1970's by Berry and others to model quantum wave-functions of classically chaotic systems.

One particular characteristic of wave functions is the structure of their nodal sets, for which numerical and experimental findings reveal several intricate structures, most of which are poorly understood. Thus one would like to understand the corresponding questions for nodal sets of random waves. For instance one may investigate statistics of quantities such as the number of nodal domains, or the length of nodal lines.

After surveying these topics I will briefly discuss recent work with Igor Wigman, which uses random wave functions of integrable systems to gain understanding of chaotic systems.