

SEMINAR EDP

Sébastien Breteaux (Université de Lorraine)

Title:

Quantum Mean Field Asymptotics and Multiscale Analysis

Abstract:

In a joint work with Z. Ammari, and F. Nier, we study how multiscale analysis and quantum mean field asymptotics can be brought together. In particular we study when a sequence of one-particle density matrices has a limit with two components: one classical and one quantum. The introduction of "separating quantization for a family" provides a simple criterion to check when those two types of limit are well separated. We also give examples of explicit computations of such limits, and how to check that the separating assumption is satisfied.

In this talk we will introduce some of the tools to deal with this problem and give an idea about the type of results we are interested in.

Jérémy Mougel (Göttingen)

title: Fredholm groupoids

Resume

In many cases, the study of linear partial differential equations on a singular manifold can be related to that of a Lie groupoid whose action generates the (pseudo)differential operators of interest.

Obtaining Fredholm conditions for these operators leads to the definition of Fredholm groupoids as recently introduced by Carvalho, Nistor and Qiao and also studied by Côme. I will introduce these objects and give examples to illustrate the notion of Fredholm groupoids.

Sala de seminarios del piso 4 (DIM, torre norte, Beauchef 851, Santiago)