

SEMINARIO

MODELAMIENTO ESTOCÁSTICO

EXPOSITOR

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Title

Quantum Turbulence and the Gross-Pitaevskii Equation

Abstract:

The talk will start by a brief introduction to physical systems displaying regimes of quantum turbulence. The status of several standard models of superfluidity will then be discussed. The rest of the talk will concentrate on models based on the Gross-Pitaevskii equation (GPE).

At first sight, the GPE can only describe a vanishing-temperature dilute superfluid. We will explain how these limitations can be lifted and how finite-temperature effects can be obtained by using classical-field models such as the Galerkin-truncated GPE. The basic numerical tools needed to properly simulate the GPE and analyze the fields will be briefly reviewed.

Several recent numerical results will finally be presented to underline the richness and the scope of the physical phenomena described by the GPE.

Martes 15 de Diciembre a las 15:00 hrs, Sala de Seminarios John Von Neumann CMM, Beauchef 851, Torre Norte.

