Seminario de análisis matemático y aplicaciones
Analisi matematikoa eta aplikazioak mintegia

Existence and uniqueness of solutions for the Hartree and Gross-Pitaevskii hierarchy equations

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ABSTRACT:

The Gross-Pitaevskii and Hartree hierarchies are infinite systems of coupled PDEs derived from the mean field theory of quantum Bose gases. Due to their physical and mathematical relevance, the issues of well-posedness and uniqueness for these equations have recently been studied thoroughly using specific nonlinear and combinatorial techniques. In this talk, I will introduce a new approach based on a duality between these hierarchies and some Liouville equations. And I will explain how such point of view yields several new well-posedness and uniqueness results. (Joint work with Quentin Liard and Clément Rouffort)

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