

SEMINÁRIO DO GRUPO DE FÍSICA MATEMÁTICA

Dia 26 de Junho (terça-feira), às 11h00, sala 6.2.38

The pressure field in the Brödinger problem

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Abstract: The so-called Brödinger problem introduced in 2017 by Arnaudon, Cruzeiro, Léonard and Zambrini is a stochastic version of the Brenier problem introduced by Brenier in 1989. Both of them are optimization problems aiming at describing the evolution of incompressible fluids. One of the main result concerning the Brenier problem is the existence of a scalar pressure field acting as a Lagrange multiplier for the incompressibility constraint. We will present how a PDE reformulation of the Brödinger problem makes it possible to extend this result to the stochastic case. We will also explain how a regularity result on the pressure field (that remains to be proved) would let us interpret the solutions to the Brödinger problem as a superposition of Schrödinger bridges with potential.