SEMINÁRIO DE ANÁLISE E EQUAÇÕES DIFERENCIAIS

Dia 31 de março (sexta-feira), às 11h00, sala 6.2.38

Global solutions to random 3D vorticity equations for small initial data

Michael Röckner

(Bielefeld University)

Abstract: One proves the existence and uniqueness in $\left(L^p(\mathbb{R}^3)\right)^3$, $\frac{3}{2} < p < 2$, of a global mild solution to random vorticity equations associated to stochastic 3D Navier-Stokes equations with linear multiplicative Gaussian noise of convolution type, for sufficiently small initial vorticity. This resembles some earlier deterministic results of T. Kato and are obtained by treating the equation in vorticity form and reducing the latter to a random nonlinear parabolic equation. The solution has maximal regularity in the spatial variables and is weakly continuous in $\left(L^3 \cap L^{\frac{3p}{4p-6}}\right)^3$ with respect to the time variable. Furthermore, we obtain the pathwise continuous dependence of solutions with respect to the initial data.

This is joint work with Viorel Barbu.

Local: FCUL – Edf. C6 - Piso 2, 6.2.38

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