Mês de: Março 2010

SEMINÁRIO DE ANÁLISE E EQUAÇÕES DIFERENCIAIS

Dia 04 de Março (quinta-feira), às 14h15, na Sala B3-01

"Homogenization of degenerate porous medium type equations in ergodic algebras."

Hermano Frid

(IMPA, Brasil)

Abstract:

In this talk we present some recent results on homogenization of linear PDE's obtained in collaboration with Luigi Ambrosio and Jean Carlos Silva. We will review the concepts of algebra with mean value and ergodic algebra introduced by Zhikov and Krivenko (1986). We recall how two-scale Young measures can be constructed in the general context of algebras with mean value. We apply the framework developed to study the homogenization problem for a degenerate porous medium type equation of the general form $u_t = \Delta f(x, \frac{x}{\varepsilon}, u)$ with $f(x, y, u)$ monotone increasing for $u \geq 0$, $f(x, y, 0) = 0$. We analyse both the Cauchy problem and the initial boundary value problem with Dirichlet boundary condition.

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