

UNICAMP – IMECC  
Departamento de Matemática

## Seminário de Sistemas Dinâmicos e Estocásticos

**Expositor:** H. de la Cruz (FGV)

**Título:** On the integration of a Random Carathéodory-type differential equation arising in the simulation of the stochastic transport equation

**Data:** Sexta-feira, 5 de abril de 2013, 13h30min

**Local:** Sala 321 do IMECC

**Resumo.** In this talk a new integrator is developed for the numerical integration of a Random Carathéodory differential equation arising in the computer simulation of the stochastic transport equation. We commence by giving a derivation of the method and analyzing its velocity of convergence. Then we propose an accurate algorithm for the efficient computational implementation of the method. For this, a suitable exponential-based representation for the solution of certain auxiliary random differential equation associated to the underline Carathodory equation, together with an adapted Pad method with scaling and squaring strategy are conveniently combined. The use of this integrator for the effective simulation of the stochastic transport equation will also be considered.

Consulte a programação em [[www.ime.unicamp.br/ssde](http://www.ime.unicamp.br/ssde)].