

Seminário de sistemas dinâmicos e estocásticos

IMECC - UNICAMP

The stochastic wave equation on the sphere: properties and simulation

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Resumo:

The stochastic wave equation driven by isotropic Gaussian noise is considered on the unit sphere. We solve this stochastic partial differential equation and discuss properties of the derived solutions. These are used in the developed approximation scheme based on spectral methods and its convergence analysis. We derive strong, weak, and almost sure convergence rates for the proposed algorithm and show that these rates depend only on the smoothness of the driving noise, the initial conditions, and the test functions. Numerical experiments confirm the theoretical rates. Finally we discuss extensions to more general domains and equations that can be treated in a similar way.

This talk is based on joint work with David Cohen.

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- Passcode: 140373

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