UNIVERSITAT JAUME I

Institut Universitari de Matemàtiques i Aplicacions de Castelló · IMAC

SEMINARIO IMAC DE ANÁLISIS NUMÉRICO Y DINÁMICA COMPUTACIONAL

Conferencia a cargo de

David Cohen

Umea University, Sweden

Numerical discretisations of stochastic wave equations

ABSTRACT: *We begin the presentation with a concise crash course on SPDEs. A fully discrete approximation of the linear stochastic wave equation driven by additive noise is then presented. A standard finite element method is used for the spatial discretisation and a stochastic trigonometric scheme for the temporal approximation. This explicit time integrator allows for error bounds independent of the space discretisation and thus does not have a step size restriction as in the often used Störmer-Verlet-leap-frog scheme. Furthermore, it enjoys a trace formula as does the exact solution of our problem. These favourable properties are next demonstrated with numerical experiments. Finally, we comment on recent results on the numerical analysis of semilinear stochastic wave equations driven by multiplicative noise.*

The presentation is based on joint works with Rikard Anton, Stig Larsson, Magdalena Sigg, and Xiaojie Wang.

Fecha: 8 de mayo de 2018, a las 12:00 horas

Lugar: **IMAC** **(***Seminario TI1329SD),* ESTCE. Universitat Jaume I de Castelló.