Kolloquium

Institut für Mathematik

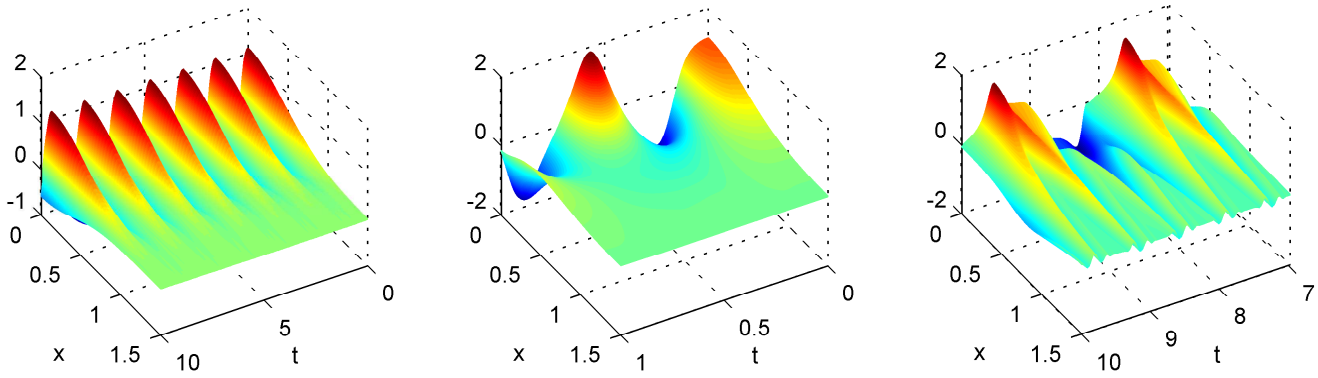
Universität Innsbruck

Andreas Prohl, Eberhard Karls Universität Tübingen

A θ-Scheme to discretize the stochastic cubic Schroedinger equation with Stratonovich noise

Many conservative, stable schemes are known to discretize the deterministic cubic Schroedinger equation. The situation is different for the stochastic version of the problem.

In my talk, I survey existing results by de Bouard & Debussche in this direction, and mention the main problem towards getting uniform bounds for the discrete Hamiltonian of a Crank-Nicholson based discretization. To avoid this problem, a shifted version is proposed, for which a corresponding stability result is possible. It turns out that this result is the key step towards an error analysis which I will discuss in detail.



This is joint work with C. Chen and J. Hong (Chinese Academy of Sciences, Beijing).

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