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MATHEMATIKKOLLOQUIUM

Das Institut für Mathematik lädt zu folgendem Vortrag ein:

Ludwig Gauckler

Mathematisches Institut, Universität Tübingen

Convergence of a split-step Hermite method for the Gross-Pitaevskii equation

The Gross-Pitaevskii equation is a nonlinear Schrödinger equation used to describe Bose-Einstein condensates. In this talk, we discuss a discretization of the Gross-Pitaevskii equation by Strang splitting in time and Hermite collocation in space. We prove a second order error bound in L^2 for the semi-discretization error of the Strang splitting in time under suitable regularity assumptions on the exact solution. For the semi-discretization in space we show high order convergence, depending on the regularity of the exact solution. The analyses of the semi-discretizations in time and space are finally combined into an error analysis of the fully discrete method.

Zeit: Donnerstag, den 16. April 2009 um 17:15 Uhr

Ort: Victor-Franz-Hess Haus, Technikerstraße 25, HS F

Mechthild Thalhammer

Gäste sind herzlich willkommen!