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# MATHEMATIKKOLLOQUIUM

Das Institut für Mathematik lädt zu folgendem Vortrag ein:

**Etienne Emmrich**

Institut für Mathematik, TU Berlin

## **Two-step BDF time discretisation of evolution equations governed by monotone operators with strongly continuous perturbations**

Time-dependent problems in science and engineering can often be modeled by the initial-value problem for a first-order evolution equation with monotone main part and strongly continuous semilinearity. A suitable time discretisation scheme is e.g. the two-step backward differentiation formula (BDF). For the case of constant time steps, we present results on well-posedness, a priori estimates, convergence of piecewise polynomial prolongations, stability, and smooth-data error estimates. A main tool is an algebraic relation that reflects the G-stability of the two-step BDF with constant time steps. We also study the two- and three-step BDF in case of variable time steps and discuss the difficulties that then arise in the analysis.

**Zeit: Montag, den 10. September 2007 um 11:15 Uhr**

**Ort: Bauingenieurgebäude, Technikerstraße 13, 6. Stock, SR B609**

*Mechthild Thalhammer*

**Gäste sind herzlich willkommen!**