

MATHEMATIKKOLLOQUIUM

Das Institut für Mathematik lädt zu folgendem Vortrag ein:

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A Perl program for the symbolic manipulation of flows of differential equations and its application to the analysis of defect-based error estimators for splitting methods

For the proof of the asymptotical correctness of certain defect-based a posteriori local error estimators for splitting methods, suitable (integral) representations of local error expansions have to be derived, from which the order of the local error can directly be inferred. In the linear case this is achieved by tedious but relatively straightforward manipulations of operator exponentials. In the nonlinear case, however, to obtain these local error representations explicitly, complicated expressions involving nonlinear flows of differential equations and higher-order Frechet derivatives of such flows have to be handled. Performing these tedious and error prone calculations manually very quickly becomes unreasonable or even impossible. We describe an especially tailored tool for performing such manipulations symbolically, whose development was strongly facilitated by employing the object-orientedness and the superior string and hash manipulation features of the Perl programming language.

Zeit: Donnerstag, den 24. Januar 2013 um 17:15 Uhr

Ort: Bauing.-Gebäude, Technikerstraße 13, HSB 7

Gäste sind herzlich willkommen!

Mechthild Thalhammer