

Oberseminar Angewandte Mathematik

Im Rahmen des Oberseminars findet am

Mittwoch, dem 15. Juni 2011

ein Vortrag von

Prof. Frank Giraldo

(Naval Postgraduate School, Monterey, USA)

über

**"Element-based Galerkin methods for
Hyperbolic systems of Nonlinear Equations"**

statt.

Abstract: In this talk, I will describe the element-based galerkin methods we are developing for the solution of hyperbolic systems of equations. In particular, I will focus on continuous (spectral elements) and discontinuous galerkin methods with special attention on variational multi-scale (VMS) methods and slope limiters for maintaining positivity; examples for atmospheric and coastal ocean flows (tsunamis) will be presented. To make these models more efficient, the time-integrators must be implicit but the success of implicit methods relies heavily on the iterative solvers and preconditioners used. Since our goal is to develop scalable (on massively parallel computers) numerical models, we must construct new types of preconditioners that do not hinder scalability. I will show results for a new type of preconditioning strategy that exploits the element-wise representation of the solution used by element-based Galerkin methods.

Uhrzeit: 14:15 Uhr

Ort: Raum 05-432 (Hilbertraum)

Interessenten sind herzlich eingeladen.

gez. M. Lukacova

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