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02/05/13

EINLADUNG

zu einem Vortrag im Rahmen des
Kolloquiums Thermo- und Fluidodynamik
und des
ERCOFTAC Visitors Programme

- Datum:** >> **Donnerstag, 27. Juni 2013** <<
- Zeit:** **11:15 Uhr**
- Ort:** Maschinenlaboratorium ETH Zürich
Hörsaal ML H 44
- Referent:** **Prof. Bernhard Müller**
Department of Energy and Process Engineering
Norwegian University of Science and Technology
Trondheim, Norway
- Thema:** **Rankine-Hugoniot-Riemann Solver for Multidimensional Conservation Laws with Source Terms ***

The Rankine-Hugoniot-Riemann (RHR) solver has been designed to solve multidimensional conservation laws with source terms. The solver uses a novel way of incorporating cross fluxes as source terms. The combined source term from the cross fluxes and normal source terms is imposed in the middle of a cell, causing a jump in the solution according to the Rankine-Hugoniot condition. The resulting Riemann problems at the cell faces are then solved by a conventional Riemann solver.

The solver is of second order for rectangular grids. This is confirmed by its application to the 2D scalar advection equation, the 2D isothermal Euler equations and the 2D shallow water equations. For these cases, the error of the RHR solver is comparable to or smaller than that of a standard Riemann solver with a MUSCL scheme.

* Joint work with Halvor Lund (NTNU) and Florian Müller and Patrick Jenny (ETH)

Hosts: Prof. L. Kleiser, Prof. P. Jenny

Gäste sind willkommen!