Kolloquium Angewandte Mathematik
Prof. Thomas Apel (BAU1)
Prof. Matthias Gerdts (LRT1)
Prof. Markus Klein (LRT1)

Universität der Bundeswehr München

Vortragsankündigung

Am **Dienstag, den 30.10.2018,** hält **um 17:00 Uhr**

Phillip Schroeder
(Uni Göttingen)

einen Gastvortrag über das Thema

High-order pressure-robust FEM and the importance of incompressible generalised Beltrami flows

Der Vortrag findet im **Raum 1431** in **Gebäude 33** statt.

Vortragszusammenfassung

The ability of a numerical method to preserve large-scale/coherent structures of a flow is fundamentally important in computational fluid dynamics. In this talk, we consider this phenomenon and compare numerical results for different Discontinuous Galerkin (DG) methods. The strong differences are then linked to the concept of pressure-robustness by means of a discrete Helmholtz projection and the resulting decomposition. It turns out that strong gradient forces in the convective term are present in many important flows. This observation is used to introduce the large class of incompressible generalised Beltrami flows. The remainder of the talk addresses when and why pressure-robust FEM can be superior (both in terms of efficiency and accuracy) and the role of high-order discretisations is discussed.

Alle Interessierten sind dazu herzlich eingeladen.