Kolloquium Angewandte Mathematik
Prof. Thomas Apel (BauV1)
Prof. Matthias Gerdts (LRT1)
Prof. Joachim Gwinner (LRT1)

der Bundeswehr
Universität *München*

Vortragsankündigung

Am **Mittwoch, dem 05.12.2012,** hält **um 17.00 Uhr**

Herr **Prof. Dr. Volker John**
(Weierstrass Institute for Applied Analysis and Stochastics, Berlin)

einen Vortrag über das Thema

On Proper Orthogonal Decomposition Methods
for Incompressible Flows

Der Vortrag findet im **Raum 0125/5** in **Gebäude 43** statt.

Vortragszusammenfassung

In the context of reduced order modeling, Proper Orthogonal Decomposition (POD) aims to find a spatial basis for the discretization of a time-dependent partial differential equation

- with a very small dimension (compared with the dimension of a standard discretization),

- and such that it approximates with good accuracy the numerical solution of the equation.

In practice, the basis is obtained, e.g., from simulations of the partial differential equation with some standard discretization. Once having computed the POD basis, it can be used to reduce the dimension of the original discretization, allowing for faster simulations. This aspect is important in many applications that require the solution of parameter-dependent partial differential equations, like optimization problems.
The talk will start with a basic introduction to POD and model order reduction strategies. Then, topics will be discussed which are particularly relevant for the application to incompressible flows, like

- incorporation of the pressure,

- approaches for high Reynolds number flows.

Finally, some numerical studies will be presented.

Alle Interessierten sind dazu herzlich eingeladen.