

Einladung zum
Vortrag

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On the stabilization of weak coupling in fluid-structure interaction with fluid incompressibility

Efficient numerical simulation of fluid-structure interaction problems involving a viscous incompressible fluid with a moderate fluid-structure density ratio is a difficult task. Blood flow simulations in deformable arteries is a popular example. Indeed, in such situations, weak (or explicit) coupling schemes i.e. that only involve the solution of the fluid and the structure once (or just a few times) per time step, are known to give rise to numerical instabilities. Recently, we have proposed a (stabilized) explicit coupling scheme, based on Nitsche's method, whose stability properties are independent of the fluid and structure density ratio. Stability is obtained thanks to the dissipative structure of the Nitsche coupling and a stabilization term giving control of the time fluctuations of the interface fluid load. We will discuss some theoretical and numerical results (in 2D and 3D) illustrating the features of the method.

**Dienstag, 05. Feb. 2008
16:30 Uhr**

**Seminarraum LNM
MW 1237**

Für weitere Informationen: <http://www.lnm.mw.tum.de/events>
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