数学与系统科学研究院

计算数学所学术报告

<u>报告人</u>：**Prof. Dr. Arnold Reusken**

（ *Chair for Numerical Mathematics, RWTH-Aachen, Germany* ）

<u>报告题目</u>：

Finite element techniques for the simulation of two-phase incompressible flows

<u>邀请人</u>：　许现民　博士

<u>报告时间</u>：**2014 年 9 月 25 日（周四）**

上午 10:00-11:00

<u>报告地点</u>：　科技综合楼三层 **301**

计算数学所小报告厅

Abstract：

We consider a flow problem with two different immiscible incompressible newtonian phases (fluid-fluid or fluid-gas). A standard model for this consists of the Navier-Stokes equations with a viscosity and density that are discontinuous across the interface and with a localized force at the interface that describes surface tension effects. This fluid dynamics model can be coupled with a model for mass transport between the phases and a model for transport of surfactants on the interface. There are several issues that are very challenging in view of an efficient and accurate numerical simulation of such models. We briefly address some of these. One numerical aspect, namely the discretization of the surfactant equation on the evolving interface will be treated in more detail.

[1] www.igpm.rwth-aachen.de/DROPS

[2] S. Gross, A. Reusken, Numerical Methods for Two-phase Incompressible Flows Springer SCM Vol. 40, 2011.

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