

数学与系统科学研究院

计算数学所学术报告

报告人: **Prof. Philippe Devloo**

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报告题目:

**The MHM multiscale technique
applied to the numerical simulation
of discrete fracture networks**

邀请人: 张晨松 副研究员

报告时间: **2017年10月10日(周二)**

上午 10:00-11:00

报告地点: 科技综合楼三层

301 报告厅

Abstract:

A numerical technique is developed to approximate discrete fracture networks embedded in porous media. The variational formulation describes coupling of fluid flow in one-dimensional fractures and its mass flow exchange with a surrounding porous media. Both flow regimes are described in a mixed flow/pressure formulation. The fully coupled system is locally conservative at the level of fractures and porous media. The flow through porous media is simulated using the MHM-H(div) (Multiscale Hybrid Method), which results in a reduced number of global equations. The model is implemented in a combination of three programs: a preprocessor, which writes an input file for Gmsh and NeoPZ, which implements the finite element model. The resulting setup allows to model complex fracture patterns. The impact of the use of MHM-H(div) on the precision of the numerical results is evaluated.

This research was developed during the sabbatical stay of the author at BISEC - Beijing University of Technology. Other research results such as the development of tensor spaces will also be presented.

欢迎大家参加！