数学与系统科学研究院

计算数学所网络学术报告

报告人：　Prof. Philippe Devloo

（ *University of Campinas* ）

报告题目：

On the Multiscale Simulation of Discrete Fracture Networks with Hybrid Mixed Finite Elements

邀请人：　张晨松　副研究员

报告时间：2020 年 11 月 27 日（周五）

上午 9:00-10:00

报告工具：Zoom 会议（ID：938 3442 3855）

会议链接：请实名进入会议室（单位+姓名）

https://psu.zoom.com.cn/j/93834423855

Abstract:

In this work we show recent developments in the multiscale simulation of 3D discrete fracture networks using the MHM-H(div) multiscale approximations. In first part we demonstrate the coupling between fracture flow and matrix flow in mixed finite element approximation setting. The numerical approximations are locally conservative. Next, a brief introduction of the Mixed Hybrid Multiscale method is given and its expression when applied to discrete fracture networks (DFN). The similarity of MHM-H(div) and GMsFEM is discussed. Results of 2D multiscale simulations with DFN are presented and of 3D simulations (without MHM) applied to a benchmark problem. Research work in generating meshes for 3D DFN will in the (near) future be applied to simulate DFN with MHM in 3D.

Short Bio:

Philippe R. B. Devloo is professor a the school of Civil Engineering of UNICAMP since 1993. His main interest are in the field of applying object oriented technology to scientific computing, finite element technology and continuum mechanics. He received the IACM Fellows award on 2018.

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