# 数学与系统科学研究院

# 计算数学所学术报告

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**报告题目：** The Simulation Study of Element Free Galerkin Method on Flow Problem

**邀请人：** 崔俊芝院士

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上午 10:30—11:30

**报告地点：** 科技综合楼三层 311

计算数学所报告厅

**Abstract：** The ement Free Galerkin (EFG) methods are less involved in the field of fluid dynamics. During the simulation of flow problem, they will suffer from many difficulties such as the

advection−dominated, the uncoupling of velocity and pressure, the instability of viscoelastic stress, as well as the tracking of swell free surface. In order to overcome these difficulties, some efforts are devoted to develop the EFG method for the simulation of flow problem. The contents of the report are introduced as follows:

 (1) The element free characteristic−based split streamline upwind (EFCBS_SU) method is devised for depressing the oscillatory pressure and stress field in the simulation of viscoelastic flow.

(2) The EFCBS_SU methods based on the framework of ALE are developed to determine the location of swell free surface.

(3) The EFG method is used to solve the conservation equation coupled with the
molecular models of polymeric fluid so that the stress is computed from the molecular configuration rather than closed−form constitutive equation.

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