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 multi–level simulation of complex flow using finite volume method on collocated girds

邀请人： 崔俊芝院士

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计算数学所报告厅

Abstract：

The complex flow contains the multi–hierarchy structure so

that the multi−scale rheological model has been developed in our past work, in which the macroscopic flow field, the mesoscopic fiber orientation and the microscopic macromolecular information are coupled by the linear sum of stress contributions. FEM is the main methods in the simulation of complex fluid. Compared with the FEM, the FVM has some advantages so that we try to use the FVM for the simulation of complex flow. Here, the controlling equations combined with different constitutive models are discretized as a general form. The FVM based on the structured or unstructured grids are explored in the simulation of complex fluid, in which the fibers orientation can be observed and the information of macromolecules can be obtained based on the constitutive equation of extended pom−pom model, FENE model or solving directly the Fokker−Planck Equation. Moreover, the Level Set equation is introduced to capture the free surface so that the fusion process of viscous and viscoelastic flow are simulated.

欢迎大家参加！