数学与系统科学研究院

计算数学所学术报告

报告人： **Dr. Shuo Yang**

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报告题目：

Local discontinuous Galerkin method to large deformations of prestrained plates

邀请人： 陈志明 院士

报告时间：2021 年 9 月 15 日（周三）

上午 **10:00-11:00**

报告地点： 数学院南楼

602 教室

Abstract：

A reduced model for large deformations of prestrained plates consists of minimizing a bending energy subject to a nonconvex metric constraint. We discuss a formal derivation of this reduced model along with an equivalent formulation that makes it amenable computationally. We propose a local discontinuous Galerkin (LDG) finite element approach that hinges on the notion of reconstructed Hessian. We design discrete gradient flows to minimize the ensuing nonconvex problem and to find a suitable initial deformation. We show Γ-convergence of the discrete energy to the continuous one, and prove stability and control of constraint's violation for the gradient flow. We present several insightful numerical experiments, some of practical interest, and assess various computational aspects of the approximation process.

欢迎大家参加！