数学与系统科学研究院

计算数学所网络学术报告

报告人：　　张磊 副教授

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报告题目：

Solution Landscape of Nematic Liquid Crystals

邀请人：　许现民 副研究员

报告时间：**2021 年 5 月 19 日（周三）**

下午 15:00-16:00

报告工具：腾讯会议（**ID：879 617 273**）

会议链接：

https://meeting.tencent.com/s/PMOp6F2T8qMw

Abstract:

Topological defect plays an important role in the physics of liquid crystals. Although a large amount of previous studies is devoted to compute the stable defect structures in liquid crystals as a consequence of geometric frustration, how do we search for the entire family tree of all possible solutions without unwanted random guesses? Here we introduce a novel concept of "solution landscape", which is a pathway map consisting of all stationary points and their connections. We then present an efficient numerical algorithm to construct the solution landscape by combining the saddle dynamics and the downward/upward algorithm. As illustration, we solve the Landau-de Gennes energy to construct the defect landscapes of confined nematic liquid crystals.

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