

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:

**A moving contact line model on
elastic membrane**

邀请人: 许现民 副研究员

报告时间: **2019 年 12 月 27 日(周五)**

下午 15:00-16:00

报告地点: **科技综合楼三层**

311 报告厅

Abstract:

Young's law is a successful theory in the study of contact angle at the three-phase contact line on a rigid solid substrate. When the solid substrate is soft and deformable, the situation is more complicated. We propose a new mathematical model for the moving contact lines on an elastic membrane. Both static and dynamic models are derived from the consideration of energy law. The local deformation of the membrane at the contact line breaks the regularity of the membrane surface. The discontinuity in the derivative of the mean curvature generates a singular force at the contact line and a new contact angle condition arises. Both asymptotic analysis and numerical simulations show a clear boundary layer structure near the contact line for extremely soft membrane.

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