



复旦大学数学科学学院 数学综合报告会

报告题目: **Computation of Rare event and its Applications in Biology**

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报告地点: 光华东主楼 1501

摘要: The dynamics of complex biological systems is often driven by multiscale, rare but important events. Transition state theory provides a powerful mathematical tool to find the dynamic bottleneck and transition pathway. In this talk, I will first provide a sampler of some newly developed numerical algorithms that are widely applicable to many physical problems. Then I will apply three biological examples to show how rare event and transition state can help us understand the mechanisms and functions in biology, including stem cell differentiation, boundary sharpening in zebrafish hindbrain, and neuroblast delamination in *Drosophila*. The joint work with Qing Nie (UC Irvine), Yan Yan (HKUST), Chao Tang (PKU).

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