Stochastic Webinar

Global well-posedness of the stochastic Abelian-Higgs equations in two dimensions (PART II)

Bjoern Bringmann Institute for Advanced Study

Bjoern Bringmann is currently a Member of the Institute for Advanced Study and a Postdoctoral Research Associate at Princeton University. Prior to this, he earned his Ph.D. from the University of California, Los Angeles, under the mentorship of Terence Tao. His research interests lie at the intersection of partial differential equations and probability theory. More specifically, he has been working on nonlinear dispersive equations with random initial data.

Abstract: There has been much recent progress on the local solution theory for geometric singular SPDEs. However, the global theory is still largely open. In this series of two talks, we discuss the global well-posedness of the stochastic Abelian-Higgs model in two dimensions, which is a geometric singular SPDE arising from gauge theory. The proof is based on a new covariant approach, which consists of two parts. In the first talk, we introduce covariant stochastic objects, which are controlled using covariant heat kernel estimates. In the second talk, we control nonlinear remainders using a covariant monotonicity formula, which is inspired by earlier work of Hamilton.

讲座时间：

2024.4.30 周二 上午 9:35-10:35

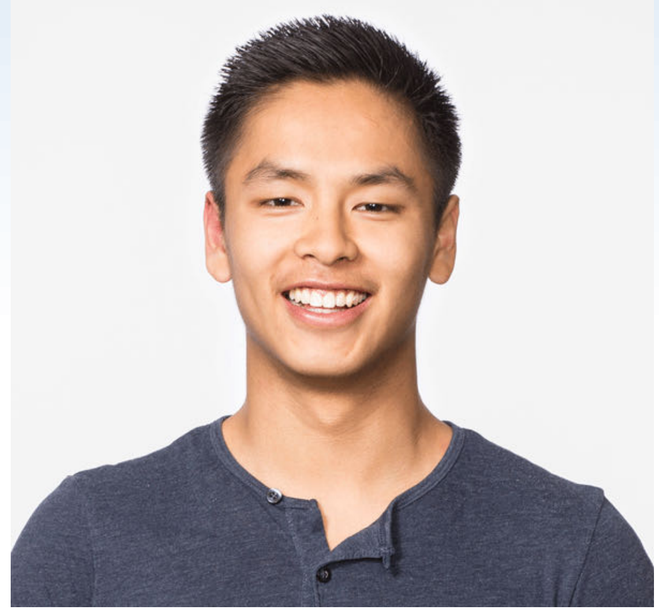
会议地点：ZOOM会议室 会议ID：354 143 7366 密码：123456

主办单位：
中科院数学与系统科学院应用数学所
北京理工大学数学与统计学院

Stochastic Webinar

Global well-posedness of the stochastic Abelian-Higgs equations in two dimensions (PART I)

Sky Cao　　麻省理工大学（MIT）



Sky Cao received his PhD from Stanford University in 2022. He then spent one year as a Minerva research foundation member at IAS. Currently, he is a postdoc at MIT. He works in probability theory, and more specifically in problems related to Yang-Mills.

Abstract: There has been much recent progress on the local solution theory for geometric singular SPDEs. However, the global theory is still largely open. In this series of two talks, we discuss the global well-posedness of the stochastic Abelian-Higgs model in two dimensions, which is a geometric singular SPDE arising from gauge theory. The proof is based on a new covariant approach, which consists of two parts. In the first talk, we introduce covariant stochastic objects, which are controlled using covariant heat kernel estimates. In the second talk, we control nonlinear remainders using a covariant monotonicity formula, which is inspired by earlier work of Hamilton.

讲座时间：

2024.4.30 周二上午 8:30-9:30
会议地点：ZOOM会议室　会议ID：354 143 7366　密码：123456

主办单位：
中科院数学与系统科学研究院应用数学所
北京理工大学数学与统计学院