Stochastic Webinar

The Allen-Cahn equation with weakly critical random initial datum

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Simon Gabriel completed his PhD at the University of Warwick in 2023. Since fall of this year, he is a postdoc in the workgroup for stochastic analysis at the University of Münster.

Abstract: We consider the 2D Allen-Cahn equation with white noise initial datum, which is a scaling critical SPDE, in a weak coupling regime. The usual approach of performing a Picard iteration of the solution yields an infinite series of stochastic iterated integrals. In contrast to considering initial datum under sub-critical rescaling, each term in the infinite expansion/series has a positive contribution in the limit.

In this talk, we present an approach that keeps track of each summand's contribution, using the notion of rooted trees, and determine their non-trivial Gaussian fluctuations exactly. We will put emphasis on the link to a deterministic differential equation describing the fluctuation of the determined limit.

　　The talk is based on joint work with Tommaso Rosati (University of Warwick) and Nikos Zygouras (University of Warwick).

讲座时间：
2023.12.06周三下午16：00-17：00
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
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