



复旦大学数学科学学院 数学综合报告会

报告题目: Ergodicity on sublinear expectation spaces

报告人: Prof. H.Z. Zhao

(Loughborough University, UK)

时间: 2017-08-15 星期二 10:30-11:30

地点: 光华东主楼 1801

摘要: In this paper, we first develop an ergodic theory of an expectation-preserving map on a sublinear expectation space. Ergodicity is defined as any invariant set either has 0 capacity itself or its complement has 0 capacity. We prove, under a general sublinear expectation space setting, the equivalent relation between ergodicity and the corresponding transformation operator having simple eigenvalue 1 , and also with Birkhoff type strong law of large numbers if the sublinear expectation is strongly regular. We also study the ergodicity of invariant sublinear expectation of sublinear Markovian semigroup. We prove that its ergodicity is equivalent to the generator of the Markovian semigroup having eigenvalue 0 and the eigenvalue is simple in the space of continuous functions. As an example we show that G -Brownian motion on the unit circle has an invariant expectation and is ergodic. Moreover, it is also proved in this case that the invariant expectation is strongly regular and the canonical stationary process has no mean-uncertainty under the invariant expectation. This is a joint work with Chunrong Feng

非线性数学模型与方法教育部重点实验室
中法应用数学国际联合实验室
上海市现代应用数学重点实验室
复旦大学数学研究所