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无穷小非交换概率空间中的极限定理

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Limit theorems in infinitesimal non-commutative probability spaces

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- 摘要
- 参考文献
- 相关文章

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摘要 在无穷小非交换概率空间中, 利用 \mathcal{R} 变换证明了一维和多维情形下的中心极限定理, 利用矩函数和累积函数的关系证明了泊松极限定理, 并通过组合分析的方法给出了标准半单位圆元素与自由泊松元素之间的关系.}

关键词: 无穷小非交换概率空间 中心极限定理 泊松极限定理

Abstract: This paper proved the central limit theorems in infinitesimal non-commutative probability spaces using \mathcal{R} transform under both one-dimension and multi-dimension cases. Also Poisson limit theorem was proved using the moments-cumulants formula. Lastly, the relation between the standard semicircular elements and free poisson elements was figured out by combinatorial analysis.

Key words: infinitesimal non-commutative probability spaces central limit theorems Poisson limit theorem

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