

國立中山大學應用數學系

學術演講

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講題：On a novel spherical Monte Carlo method
via group Representation

時間：2015/09/25（星期五）14：10～15：00

地點：理學院四樓理 SC 4009-1 室

茶會：15:00 於理 SC 4010 室（系辦公室）

摘要

Accurate and efficient calculation of a high-dimensional integral is of crucial importance in various scientific disciplines. This paper proposes a novel spherical Monte Carlo approach via group representation by constructing a subgroup of the orthogonal groups, so that the spherical integral is calculated using the group orbit of a random unit vector. The proposed method outperforms existing methods in high-dimensional cases, in terms of variance reduction, computational time, and computational expenses of drawing independent random numbers. Several nice theoretical properties of the proposed subset are provided. Extensive numerical experiments confirm our claims.

(Joint with Prof. Ming-Hsuan Kang and Runze Li)

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