



統計科學研究所

INSTITUTE OF
STATISTICAL SCIENCE



統計所學術演講



中研院統計所

學 術 演 講

講 題：A refined space-filling pattern criterion and optimal regular designs

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時 間：2023年10月16日(星期一)，10:30-12:00

地 點：統計所B1演講廳

Abstract

Space-filling designs are routinely employed in computer experiments, and common criteria for selecting such designs are either distance- or discrepancy-based. Recently, Tian and Xu introduced a minimum aberration-type criterion known as the Space-Filling Pattern (SFP), which plays a crucial role in classifying and ranking strong orthogonal arrays, a well-established category of space-filling designs. Designs that perform well under the SFP tend to exhibit stratifications across a variety of grids. However, SFP does not distinguish between grids of different dimensions. To address this, we propose a refined version of the SFP, named the Stratification Pattern (SP). Using the chi-characteristics, we provide a justification for both the SFP and SP. Next, our focus shifts to the regular designs of a prime square level. We show that the SP-optimal designs can be found by counting the different types of words of the same lengths. This result allows for a complete search for the SP-optimal designs, especially for those of small sizes.

※ 實體與線上視訊同步進行。

※ 茶 會：10：10開始。