

國立中山大學應用數學系

學術演講

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講題：Optimum Designs for Parameter Estimation in
a Multi-response Mixture Experiment

時間：2020/5/7 (Thursday) 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)

Abstract

A mixture experiment in the $(q-1)$ -dimensional probability simplex is an experiment in which the q factors are non-negative and subject to the simplex restriction, which means the sum of all factors is equal to one. In this talk, we investigate the issue of the optimal designs for parameter estimation with the considered k responses models, consisted of the Scheffé's mixture polynomial models. Initially, we characterize the structure of candidate designs based on the complete classes of the class of weighted centroid designs for the multi-responses mixture experimental

models with the given covariance structure. According to the well-known equivalence theorem, we verify that the obtained allocation measures at the support points are D-optimal designs for particular multi-response mixture models. Specifically, some results of D-optimal designs in multi-response considerations are demonstrated to be independent of the covariance structure between the k responses, but depend on the allocation of the underlying polynomial models.

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