國家理論科學研究中心學術演講

NCTS Industrial Statistics Research Group Seminar

Date: 1:30pm~5:00pm, February 22 (Fri.), 2013

(1) 1:30pm-3:00pm

Speaker: **Dr. Hsiu-Wen Chen 陳秀雯博士**

(Institute of Statistical Science, Academia Sinica)

Topic: **The Augmented Desirability Function: Methods and Applications**

Abstract:

The desirability function is widely used in engineering field to tackle the problem of optimizing multiple responses simultaneously. We propose an augmented desirability function that accounts for various additional information aiming to improve the practicality of the optimal solutions. The augmented desirability function can reduce the variation of predicted responses, as well as balance location and dispersion effects in a robust design study. The benefits of the augmented approach are demonstrated via real examples. This is a joint work with Hongquan Xu and Weng Kee Wong (UCLA).

---

(2) 3:00pm-3:30pm Tea Break

---

(3) 3:30pm-5:00pm

Speaker: **Prof. Chang-Yun Lin 林長鋆教授**

(Institute of Statistics, National Chung Hsing University)

Topic: **Introduce to the Count Function and Its Applications**

Abstract:

The count function has been applied to the studies of factorial designs, such as the minimum aberrations, optimal designs and uniformity patterns. This presentation will introduce the basic properties of the count function and its current developments. Two of its applications will be focused on. The first is the isomorphism examination, witch compares whether two designs have the same structure subject to some row and column operations. The split-count matrix was developed for initial screening the isomorphism. It has been theoretically proved that the split-count matrix provides a more efficient examination than some existing methods. The second application is the design enumeration, which is considered to completely generate certain types of designs, such as regular designs or orthogonal arrays. An assembly method based on the count function and projection was proposed to sequentially generate all non-isomorphic two-level designs by a hierarchical structure.

Place:

***Lecture Room B** of National Center for Theoretical Sciences,*
4th Floor, The 3rd General Building, National Tsing Hua University

國家理論科學研究中心
102 年 2 月 4 日