CHAPTER 31

MATHEMATICAL SCIENCES
STATISTICS

Doctoral Theses

290.   MAZUMDER (Mukta Datta) nee MUKTA ROY
         **Some Contributions to Orthogonal Arrays and Optimal
         Fractional Factorial Plans.**
         Supervisors : Prof. M. L. Aggarwal and Prof. Jagdish Saran
         Th 14743

Abstract

Constructs two new universally optimal fractional factorial plans
under hierarchical models based on Lemmas 1.1 and 1.2 given
in Dey and Suen (2002) using the concepts of finite projective
geomerty. One of the optimal plans permits the estmability of
the mean, all M. E. and a specified set of 2FI. The other plan
permits the estimability of the mean, all M. E. , a specified set
2FI and a specified 3FI. A new universally optimal fractional
factorial plan which is hierarchical in nature for estimation of
the mean, all M. E. and a specified set of 2FI using the concept
of spread. A universally optimal plan for estimation of the mean,
all M.E., specified set of 2FI and specified set of 3FI using the
concept of spread. Used the concept of minohyper to construct a
new optimal fractional plan under hierarchical model for
estimation of the mean, all M. E., a specified set of 2FI and a
specified set of 3FI. Studies the universally optimal asymmetric
fractional factorial plans given by Dey, Suen and Das (2005)
under hierarchical models for estimation of the mean, all M.E.
and a specified set of 2FI using finite projective geometry.
Constructs two new optimal fractional factorial plans for
estimation of the mean, all M. E., a specified set of 2FI,... and a
specified set of (r-1)-factor interactions under hierarchical
models using finite projective gemoetry PG(r-1,m). Studies
several methods of partition proposed by Wu, Zhang and Wang
(1992) to obtain tight asymmetric orthogonal arrays of strength 2.

Contents

1. Introduction. 2. Optimal fractional factorial plans using PG

(r-1,m). 3. Optimal fractional factorial plans using concept of spread minihypers. 5. Optimal asymmetric fractional factorial plans using finite projective geometry. 6. Optimal fractional factorial specified (r-1)- factor interactions using PG(r-1,m). 7. Tight asymmetric orthogonal arrays of strength 2 using finite projective geometry. Biblography.

M.Phil Dissertations

291. GUPTA (Rashmi)
Models in Survey Sampling-A Review.
Supervisor : Prof. M.C. Agrawal.

292. PANDEY (Manoj Kumar)
Critical Review of Sample Size Determination in Clinical Trials.
Supervisor : Dr. Gurprit Grover.

293. TALUKDAR (Kabita)
Review of Classical and Bayesian Estimation Procedures for Some Reliability Models.
Supervisor : Dr. Ajit Chaturvedi.

294. TYAGI (Nidhi)
Contributions to Inferential Procedures for Some Reliability Models.
Supervisor : Dr. Ajit Chaturvedi.