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Χριστίνα Παρπούλα

Προσωρινή Διδάσκουσα, Τμήμα Στατιστικής, Οικονομικό Πανεπιστήμιο Αθηνών

Analyzing supersaturated designs for discrete responses via generalized linear models

ΠΕΜΠΤΗ 26/1/2017
13:00

**ΑΙΘΟΥΣΑ 607, 6^{ος} ΟΡΟΦΟΣ,
ΚΤΙΡΙΟ ΜΕΤΑΠΤΥΧΙΑΚΩΝ ΣΠΟΥΔΩΝ
(ΕΥΕΛΠΙΔΩΝ & ΛΕΥΚΑΔΟΣ)**

ΠΕΡΙΛΗΨΗ

A supersaturated design is a factorial design in which the number of factors to be estimated is larger than the available number of experimental runs. The cost and time required for many industrial experimentations can be reduced by using the class of supersaturated designs, since the main goal for such a design is to identify only a few of the factors under consideration that have dominant effects and to do this identification at a minimal cost. While most of the literature on supersaturated designs has focused on the construction of designs and their optimality properties, the data analysis of such designs has not been developed to a great extent. In this paper, we propose a supersaturated design analysis method, by assuming generalized linear models for discrete responses, for analyzing main effects designs and identifying simultaneously the effects that are significant. Empirical study demonstrates that this method performs well with low Type I and Type II error rates. The proposed method is therefore useful as it enables us to use supersaturated designs for analyzing data on discrete response regression models.

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THURSDAY 26/1/2017
13:00

**ROOM 607, 6th FLOOR,
POSTGRADUATE STUDIES BUILDING
(EVELPIDON & LEFKADOS)**

ABSTRACT

A supersaturated design is a factorial design in which the number of factors to be estimated is larger than the available number of experimental runs. The cost and time required for many industrial experimentations can be reduced by using the class of supersaturated designs, since the main goal for such a design is to identify only a few of the factors under consideration that have dominant effects and to do this identification at a minimal cost. While most of the literature on supersaturated designs has focused on the construction of designs and their optimality properties, the data analysis of such designs has not been developed to a great extent. In this paper, we propose a supersaturated design analysis method, by assuming generalized linear models for discrete responses, for analyzing main effects designs and identifying simultaneously the effects that are significant. Empirical study demonstrates that this method performs well with low Type I and Type II error rates. The proposed method is therefore useful as it enables us to use supersaturated designs for analyzing data on discrete response regression models.