

Statistics Seminar Series

# Application of Orthogonal Design for Planning Experiments and Modeling Multi-Factorial Systems.

Dr. Marina Yampolsky  
Mathrixsoft

Thursday, February 27, 2003, 4:00-5:00pm  
Mathematics and Computer Science (MCS) Building, Room 149  
111 Cummington Street, Boston

Tea and Cookies at 3:30pm in MCS 153

**Abstract:** The distinguishing features that set Orthogonal Design (OD) from other experimental design methods will be outlined. In particular, we will discuss specific characteristics of regression models developed with the use of orthogonal arrays. These models offer a number of advantages such as: being able to obtain maximum information about a complex system using a minimal number of trials; uncomplicated analysis even when there are many different factors and response parameters; convenient and explicit methods for prediction and interpretation.

Some mathematical principles and rules for constructing and using orthogonal arrays will be presented. Typical problems (which are often overlooked) associated with improper application of orthogonal arrays will also be discussed. We will talk about the gap between theoretical concepts of OD and available OD software packages and some of the reasons for the missing link between theory and application.

Real life examples (i.e., prediction, optimization, visual representation) using the model-building process based on application of OD will be demonstrated.

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For directions and maps, please see <http://math.bu.edu/research/statistics/statseminar.html>.  
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