

Note on Reduction of Size of

Response Surface Design Model - Nested Approach

T. Deepthi

Geethanjali College of Engineering and Technology, Department of Mathematics, Hyderabad.
deepthitogercheti@gmail.com or drtdeepthi.fe@gcet.edu.in

ABSTRACT

Experimental Design plays an important role in several areas of science and industry. Many of the designs were developed with increase of applications in Science and Technology, Medicine, Agriculture, Social Sciences, etc. Box and Wilson in 1951 introduced an advanced design called Response Surface Methodology (RSM) is a widely used mathematical and statistical method to find the optimal settings of input factors or design variables that maximize or minimize or target measured response variables. It aims to investigate an approximate functional relationship between the response variable and the factor combinations is known as response surface study. Design used for fitting the response surface models are known as Response Surface Design. When the number of factors in the model increases, only a few factors underlying phenomena of interest and it is possible to eliminate the insignificant factors, which are not affecting much the response, results reduction in size of the model which reduces time, cost, effort and complexity.

Keywords: Response Surface Design Model, Dimensionality Reduction, Nested Approach.