Optimal designs for the prediction of individual parameters in multiple group random coefficient regression models

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Abstract

Optimal designs for the prediction of individual parameters in multiple group Random Coefficient Regression (RCR) models are very popular in many fields of statistical application; especially in biosciences. In these models observational units (individuals) are assumed to come from the same population with an unknown population mean and differ from each other by individual random parameters. Besides the estimation of the population mean parameter, the prediction of the individual response is often of prior interest. In the particular case of multiple group RCR models individuals in different groups get different kinds of treatment. If group sizes are fixed and the unknown mean parameters may differ from group to group, statistical analysis can be performed in each group separately [1]. This talk presents analytical results for optimal group sizes for the prediction of the individual parameters in multi group RCR models with a common population mean for all individuals across all groups.

References:

[1] Prus, M. *Optimal Designs for the Prediction in Hierarchical Random Coefficient Regression Models.* Ph.D. thesis, Otto-von-Guericke University Magdeburg (2015).