

Optimal Designs for Minimax Criteria in Random Coefficients Regression Models

Maryna Prus ¹

In random coefficients regression (RCR) models observational units (individuals) are assumed to come from the same popularity and differ from each other by individual random parameters. These models have been introduced in biosciences for selection purposes and are now popular in many fields of statistical applications, for example in medical research and pharmacology. Optimal designs for the estimation of population (fixed) parameters are well discussed in the literature (see e. g. [2]). RCR models with known population (mean) parameters were investigated by [1]. [3] proposed solutions for optimal designs for the prediction of individual random parameters in models with given covariance matrix of random effects. However, the latter designs are locally optimal and depend on the covariance structure. Here, we present some results for minimax-optimal designs, which minimize the worst case for the criterion function over a specific region of reasonable values of the covariance matrix. We illustrate the results by a numerical example.

References

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¹Institute of Mathematical Stochastics, Otto-von-Guericke University Magdeburg, Universitaetsplatz 2, D-39106 Magdeburg, Germany, E-mail: maryna.prus@ovgu.de