

Evaluation of a Surrogate Based Method for Global Optimization

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Abstract : We evaluate the performance of a numerical method for global optimization of expensive functions. The method is using a response surface to guide the search for the global optimum. This metamodel could be based on radial basis functions, kriging, or a combination of different models. We discuss how to set the cycling parameters of the optimization method to get a balance between local and global search. We also discuss the eventual problem with Runge oscillations in the response surface.

Keywords : expensive function, infill sampling criterion, kriging, global optimization, response surface, Runge phenomenon

Conference Title : ICMOS 2015 : International Conference on Modelling, Optimization and Simulation

Conference Location : Prague, Czechia

Conference Dates : July 09-10, 2015