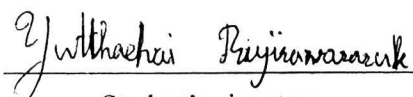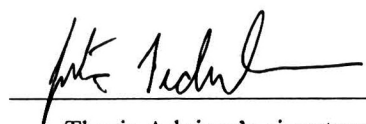Yutthachai Rujiraworarak 2007: Simulation Optimization Methods for One and Two Continuous Decision-Variable Problems. Master of Engineering (Industrial Engineering), Major Field: Industrial Engineering, Department of Industrial Engineering. Thesis Advisor: Assistant Professor Juta Pichitlamken, Ph.D. 98 pages.

We consider optimization-via-simulation problems where decision variables are continuous. Simulation is useful when the objective functions are not in closed form mathematical functions but can be evaluated by simulation. We are interested in optimization-via-simulation problems when computational efforts are limited. We modify the methods by Yakowitz (2000) that uses low-dispersion point sets to generate some solutions from the feasible space. We propose two new rules in selecting the next set of solutions to consider. We compare our rules with Yakowitz's rule on the basis of three indicators: the number of experiments that fail to find the optimal solution; the average selection error; and the estimated standard errors. We use two comparison methods: multiple comparisons and subset selection.

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Student's signature   Thesis Advisor's signature