Second Order Efficiency in the Sequential Design of Experiments

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In the sequential design of experiments an experimenter performs experiments sequentially to make an eventual inference about the true state of nature. A Bayesian formulation of this problem is considered. The parameter space is assumed finite and there are a finite number of repeatable experiments. Sufficient conditions are given for a procedure to be second order efficient as the sampling costs approach zero. The asymptotic analysis of a related Markov control problem is also presented.