



EFFICIENT CALIBRATION FOR IMPERFECT COMPUTER MODELS

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Many computer models contain unknown parameters which need to be estimated using physical observations. Tuo and Wu (2014) shows that the calibration method based on Gaussian process models proposed by Kennedy and O'Hagan (2001) may lead to unreasonable estimate for imperfect computer models. In this work, we extend their study to calibration problems with stochastic physical data. We propose a novel method, called the L2 calibration, and show its semiparametric efficiency. The conventional method of the ordinary least squares is also studied. Theoretical analysis shows that it is consistent but not efficient. Numerical examples show that the proposed method outperforms the existing ones..

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