Constrained optimal discrimination designs for Fourier regression models

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Abstract In this article, the problem of constructing efficient discrimination designs in a Fourier regression model is considered. We propose designs which maximize the power of the F-test, which discriminates between the two highest order models, subject to the constraints that the tests that discriminate between lower order models have at least some given relative power. A complete solution is presented in terms of the canonical moments of the optimal designs, and for the special case of equal constraints even more specific formulae are available.