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Approximate theory-aided robust efficient factorial fractions under baseline parametrization

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Abstract With reference to a baseline parametrization, we explore highly efficient, fractional factorial designs for inference on the main effects and, perhaps, some interactions. Our tools include approximate theory together with certain, carefully devised discretization procedures. The robustness of these designs to possible model misspecification is investigated using a minimaxity approach. Examples are given to demonstrate that our technique works well even when the run size is quite small.

Keywords Binary design · Discretization · Minimaxity · Model misspecification · Nonorthogonality

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