

Design of near-optimal irregular fractional plans satisfying multi-optimality criteria / Prasun Das

Prasun Das, author

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Abstrak

In an industrial set-up, conditions of orthogonality and optimality of a statistical experimental design often get violated. This paper attempts to find an optimal design which performs uniformly better with respect to multi-design-optimality criteria. Initially, using non-dominated sorting genetic algorithm (NSGA-II) with single D-optimality criterion, a near-optimal design is searched for linear, interaction, quadratic, pure quadratic, and some pre-specified models. The solutions obtained are verified with the existing upper bounds. In the second phase, Pareto-optimal solutions are obtained with multi-design-optimality criteria. The method of comparison is illustrated with an example along with its demerits in terms of design efficiency.