Partially Replicated Two-Level Fractional Factorial Designs

蔡風順

中央研究院統計科學研究所

Abstract

In a two-level factorial experiment, we consider designs with partially duplication which permit estimation of the constant term, all main effects and some specified two-factor interactions, assuming the other effects are negligible. We also consider parallel-flats designs with two identical flats that meet prior specifications. 3-flat and 4-flat designs are our main focus. The 3-flat and 4-flat designs we obtained can have a very simple covariance structure and high D-efficiency. An algorithm can generate a series of practical designs with run sizes 12, 16, 24 and 32 is developed.