

# SOME OPTIMAL DESIGNS FOR COMPARING A SET OF TEST TREATMENTS WITH A SET OF CONTROLS\*

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**Abstract.** In this paper, we give a detailed study of the problem of optimally comparing a set of  $t$  test treatments to a set of  $s$  controls under a 0-way elimination of heterogeneity model. The relationships between designs that are  $A$  and  $MV$ -optimal for comparing the test treatments to the controls and those that are  $A$  and  $MV$ -optimal for comparing all treatments are also studied.

*Key words and phrases:*  $A(c)$ -optimal designs,  $MV(c)$ -optimal designs,  $A$ -optimal designs,  $MV$ -optimal designs, controls, test treatments.