

OPTIMAL TREATMENT CHOICE FOR THE CONSTRUCTION OF FRACTIONAL FACTORIAL DESIGNS

Claudiney Nunes de LIMA¹
Júlio Sílvio de Sousa BUENO FILHO²

- **ABSTRACT:** *This work deals with implementing exchange algorithm. Efficiency based optimality criteria was used to find optimal fractional factorials for response surface designs. Treatment choice was considered. Design found was compared to alternative from literature. D-optimal design was more efficient than design constructed using other methods like combinatorial considerations. Resulting algorithm is flexible and should be used by applied researchers as alternative to fractional factorials. This is also valid for initial steps of research as well as for fitting response surfaces in optimization steps.*
- **KEYWORDS:** *Central composite design; exchange algorithm; fractional factorials, optimal design.*

¹ Universidade Federal de São João del-Rei - UFSJ, Campus Alto Paraopeba, Caixa Postal: 131, CEP: 36420-000, Ouro Branco, MG, Brasil. E-mail: pleudiney@yahoo.com.br

² Universidade Federal de Lavras -- UFLA, Departamento de Ciências Exatas, Caixa Postal: 3037, CEP: 37200-000, Lavras, MG, Brasil. E-mail: jssbueno@ufla.br