

Canonical forms for factorial and related models

João T. Mexia

New University of Lisbon, Portugal

Abstract

Commutative Jordan algebras are used to present factorial and related models in canonical form. Binary operations defined on the algebras enable the derivation of complex models from simple ones: prime basis factorials and their fractional replications. Sub-algebras are then used to study the extension to models with an arbitrary number of levels for the factors.

Canonic formulation enables the study of mixed models, leads to BLUE for all estimable vectors and to UMVUE both for estimable vectors and variance components once normality is assumed.