

Two one-sided generalized inverses and their applications in bilinear models

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Abstract

Two one-sided generalized inverses of matrices are defined in this talk. The existence, uniqueness and the analytical forms through Moore-Penrose inverses are obtained. The two inverses play useful roles in establishing matrix projections onto linear spaces for matrices under a general inner product system. These results find applications in bilinear statistical models for random matrices in expressing general least square estimators for parameter matrices, in deriving sufficient and necessary conditions for the estimability of parameter matrices and in presenting best linear unbiased estimators (BLUES) for parameter matrices.

Keywords

Generalized inverses, Matrix projections, Bilinear models for random matrices, Estimability for parameter matrices, Best linear unbiased estimators for parameter matrices.

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