

TESTING LINEAR HYPOTHESES IN ERRORS IN VARIABLES MODEL

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Abstract. A multivariate errors-in-variables model in the matrix form can be written as $X = U + E$, $Y = UA' + WB + F$, where X ($n \times p$) and Y ($n \times q$) are observed matrices, E and F are error matrices whose rows are normally distributed, W ($n \times k$) is a known matrix of rank k , and U , A and B are unknown matrices. We consider the problems of testing linear hypotheses: (i) $H_0: AR = K$ and (ii) $H_0: S'A = L$, where R , K , S and L are known matrices, and we derive the likelihood ratio tests for testing these hypotheses.

Key words and phrases: Eigenvalues and eigenvectors, likelihood function, likelihood ratio test, Jacobian of a transformation, Poincaré separation theorem.