Notation

$(V, (\cdot, \cdot))$ an inner product space, vector space V and inner product $(\cdot, \cdot)$

$\mathcal{L}(V, W)$ the vector space of linear transformations on V to W

$Gl(V)$ the group of nonsingular linear transformations on V to V

$\mathcal{O}(V)$ the orthogonal group of the inner product space $(V, (\cdot, \cdot))$

R^n Euclidean coordinate space of all n-dimensional column vectors

$\mathcal{L}_{p,n}$ the linear space of all $n \times p$ real matrices

Gl_n the group of $n \times n$ nonsingular matrices

$\mathcal{O}_n$ the group of $n \times n$ orthogonal matrices

$\mathcal{F}_{p,n}$ the space of $n \times p$ real matrices whose p columns form an orthonormal set in R^n

G_T^+ the group of lower triangular matrices with positive diagonal elements—dimension implied by context

G_U^+ the group of upper triangular matrices with positive diagonal elements—dimension implied by context

$\mathcal{S}_p^+$ the set of $p \times p$ real symmetric positive definite matrices

$A > 0$ the matrix or linear transformation A is positive definite

$A \geqslant 0$ A is positive semidefinite (non-negative definite)

det   determinant

tr   trace

$x \,\square\, y$ the outer product of the vectors x and y

$A \otimes B$ the Kronecker product of the linear transformations A and B

Δ_r the right-hand modulus of a locally compact topological group

$\mathcal{L}(\cdot)$ the distributional law of "$\cdot$"

$N(\mu, \Sigma)$ the normal distribution with mean μ and covariance Σ on an inner product space

$W(\Sigma, p, n)$ the Wishart distribution with n degrees of freedom and $p \times p$ parameter matrix Σ