

# CORRECTION NOTES AND ACKNOWLEDGMENT OF PRIORITY

## CORRECTIONS TO "SOME EXTENSIONS OF THE WISHART DISTRIBUTION"

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AND

## "THE NON-CENTRAL WISHART DISTRIBUTION AND CERTAIN PROBLEMS OF MULTIVARIATE STATISTICS"

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The main results of these two papers (*Ann. Math. Statist.* **15** (1944) 345–357 and **17** (1946) 409–431) have been derived more recently and by different methods by several authors. Nevertheless, it seems worthwhile to correct some errors in the papers because they continue to be referred to.

Equation (29) of the first paper and (8) of the second paper should be

$$|T - \lambda \sum A^{-1} \sum| = 0.$$

The noncentral Wishart density for rank two [(32) in the first paper and (7) in the second] is written in terms of the two nonzero roots,  $u_1$  and  $u_2$ , of this equation; the integral expression for the density for arbitrary rank  $t$  (Theorem 3 of the second paper) involves the  $t$  nonzero roots of this equation. The corresponding correction in the density for rank one is to replace  $\sum_{i,j=1}^p \sum_{\alpha=1}^N a_{ij}(\mu_{i\alpha} - \bar{\mu}_i) \cdot (\mu_{j\alpha} - \bar{\mu}_j)$  in (31) in the first paper and  $\sum_{i,j} a_{ij}\tau_{ij}$  in (6) in the second paper by  $\sum_{i,j,k,h=1}^p a_{ij}\sigma^{jk}\tau_{kh}\sigma^{hi}$  (two places in each density). In (31)  $\sum_{i=1}^{p-1}$  should be replaced by  $\prod_{i=1}^{p-1}$ , and  $\frac{1}{2}$  should be replaced by  $-\frac{1}{2}$  in the second exponential.

The transformation in the second paragraph of page 418 of the second paper should be stated as follows: There is a  $p \times p$  matrix  $H$  and a  $t \times t$  orthogonal matrix  $Q$  such that  $H'B^{-1}H = I$  and  $H'KQ = W = \|w_i\delta_{i\eta}\|$ , where  $w_i^2$  are the  $t$  nonzero roots of  $|K_i^2\delta_{ij} - \lambda b^{ij}| = 0$ ; make the transformation to  $Z$  by  $Y = HZQ$ . (An equivalent transformation was made correctly in the first paper.) The correction of the transformation has no effect on the subsequent development. In the line below (26) on page 18  $Z^1$  and  $Z_1$  should be replaced by  $Z_1$  and  $Z_2$ , respectively.

In (24) of Theorem 1 of the second paper  $n$  in line 2 should be replaced by  $N$  and  $\sigma^{jh}$  in line 3 should be replaced by  $\sigma^{jk}$ .

Several other minor typographical errors remain. A complete list of errata is