

mates for  $\gamma \leq .95$  and overestimates for  $\gamma \geq .99$ , while in Table IV,  $k$  is probably underestimated for  $P = .875$  and overestimated for the other  $P$  values. Differences shown between Table II and Table III values in a few cases exceed 20% of the presumably more accurate Table II values and differences shown between Table II and Table IV sometimes exceed 10% of the Table II values.

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1. N. L. JOHNSON & B. L. WELCH, "Applications of the non-central  $t$ -distribution," *Biometrika*, v. 31, 1939, p. 362-389.

2. G. J. RESNIKOFF & G. J. LIEBERMAN, *Tables of the Noncentral  $t$ -Distribution*, Stanford University Press, Stanford, Calif., 1957.

3. C. EISENHART, M. W. HASTAY & W. A. WALLIS, *Techniques of Statistical Analysis*, McGraw-Hill Book Co., New York, 1947.

4. R. M. McCLUNG, "First aid for pet projects injured in the lab or on the range or what to do until the statistician comes," U. S. Naval Ordnance Test Station Technical Memorandum No. 1113, October 1955.

83[K].—K. V. RAMACHANDRAN, "On the Studentized smallest chi-square," *Amer. Stat. Assn., Jn.*, v. 53, 1958, p. 868-872.

Consider the  $F$  statistics,  $\frac{S_i}{S} \cdot \frac{m}{t}$ ,  $i = 1, 2, \dots, k$ , in which  $S_1, S_2, \dots, S_k$  and  $S$  are mutually independent, with each  $S_i/\sigma^2$  having a  $\chi^2$  distribution under the null hypothesis with  $t$  degrees of freedom and  $S/\sigma^2$  a  $\chi^2$  distribution with  $m$  d.f. There are numerous applications of statistical methods, a few of which are discussed, in which one needs the value of  $V$  for which  $\Pr | \frac{S_{\min}}{S} \frac{m}{t} \geq V | = 1 - \alpha$ .

The author tabulates lower 5% points of  $\frac{S_{\min}}{S} \cdot \frac{m}{t}$  for values of  $t, m$  and  $k$  as follows:

For  $t = 1, m \geq 5, k = 1(1)8$  to 1S; for  $t = 2, 5 < m < 10$  and  $m \geq 12, k = 1(1)8$  to 3D; for  $t = 3, 4, 6, m = 5, 6(2)12, 20, 24, \infty, k = 1(1)8$  to 3D; for  $t = 1(1)4(2)12, 16, 20, m = \infty, k = 1(1)8$  to 3D; for  $t = 1(1)4(2)12, 16, 20, m = 5, 6(2)12, 20, 24, \infty, k = 1, 2, 3$  to 3D.

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84[K].—A. E. SARHAN & B. G. GREENBERG, "Estimation of location and scale parameters by order statistics from singly and doubly censored samples. Part II.," *Ann. Math. Stat.*, v. 29, 1958, p. 79-105.

This paper, a continuation of a previous one [1], is mainly devoted to an extension of tables given in the earlier paper to cover samples  $11 \leq n \leq 15$  and to a discussion of efficiencies of the estimators used. Samples of  $n$  are from  $N(\mu, \sigma^2)$ ;  $r_1$  and  $r_2$  observations are censored in the left and right tails respectively ( $r_1 r_2 \geq 0$ ); and  $\bar{x}$  and  $\sigma$  are estimated by the most efficient linear forms in the ordered uncensored observations. Table I gives the coefficients for these best linear systematic statistics to 4D for all combinations of  $r_1, r_2$  for  $n = 11(1)15$ . Table II gives variances and the covariance of these estimates to 4D for  $n = 11(1)15$  and all pairs of  $r_1, r_2$  values. In Table III efficiencies of the two estimates relative to that for uncensored samples are given to 4D for the same range of values of  $n$  and  $r_1, r_2$ . For