advantageous had the large values of n been arranged conveniently for harmonic interpolation, such as $n = 60, 120, 240, 480, 960$, etc.

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73[K].—Irwin Guttman, "Optimum tolerance regions and power when sampling from some non-normal universes," *Ann. Math. Statist.*, v. 30, 1959, p. 926–938.

This paper is concerned with obtaining β-expectation tolerance regions which are minimax and most stringent (see [1] and [2]) for the upper tail of the single exponential population and for the central part of the double exponential distribution. The single exponential probability density function (*pdf*) is of the form $\sigma^{-1} \exp[-(x - \mu)/\sigma]$ with $x \geqq \mu$, where one or both of μ and σ are unknown. The double exponential *pdf* is of the form $(2\sigma)^{-1} \exp(-\mid x - \mu \mid/\sigma)$, where μ is known and σ is unknown. The sample values are $x_1 < \cdots < x_n$; $\bar{x} = \sum_{i=1}^{n} x_i/n$; $s = \sum_{i=2}^{n} (x_i - x_1)/(n - 1)$; μ_0 and σ_0 represent known values of μ and σ; $t = \sum_{i=1}^{n} \mid x_i - \mu_0 \mid$. Then the optimum tolerance intervals, which are easily identified with the situations considered, are $[a_\beta(\bar{x} - \mu_0), \infty)$, $[x_1 - b_\beta\sigma_0, \infty)$, $[x_1 - c_\beta s, \infty)$, and $[\mu_0 - d_\beta t, \mu_0 + d_\beta t]$. Tables I–IV contain 6D values of a_β, b_β, c_β, d_β, respectively, for $n = 1(1)20, 40, 60$ and $\beta = .75, .90, .95, .99$. The power of tolerance intervals is expressed in terms of parameter α_1, where α_1 is determined as the solution of $(\alpha\sigma)^{-1} \int_{I(\beta)} \exp[-(x - \mu)/\alpha\sigma\, dx = \gamma =$ measure of desirability, for the single exponential case, and from $(2\alpha\sigma)^{-1} \int_{I(\beta)} \exp(-\mid x - \mu \mid \alpha\sigma)\, dx = \gamma$ for the double exponential case. Here $I(\beta)$ is the tolerance interval considered and $0 < \gamma < 1$ (large values indicate greatest desirability). Tables V, VI, and VIII contain 7D values of the power for intervals $[a_\beta(\bar{x} - \mu_0), \infty)$, $[x_1 - b_\beta\sigma_0, \infty)$, $[\mu_0 - d_\beta t, \mu_0 + d_\beta t]$, respectively, for $n = 1(2)7, 10, 15, 30, 60$, and $\beta = .75, .90, .95, .99$; likewise for $x_1 c_\beta s$ and Table VII, except that $n = 2(2)10, 15, 30, 60$.

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1. D. A. S. Fraser & Irwin Guttman, "Tolerance regions," *Ann. Math. Statist.*, v. 27, 1956, p. 162–179.
2. Irwin Guttman, "On the power of optimum tolerance regions when sampling from normal distributions," *Ann. Math Statist.*, v. 28, 1957, p. 773–778.

74[K].—Milos Jilek & Otakar Likar, "Coefficients for the determination of one-sided tolerance limits of normal distribution," *Ann. Inst. Statist. Math. Tokyo* v. 11, 1959, p. 45–48.

It is well known that a random sample of size N from a normal universe with mean μ and variance σ^2 yields one-sided tolerance limits $(-\infty, T_u)$ and $(T_L, +\infty)$ each of which includes at least a fraction α of the universe with probability P, where

$$T_u = \bar{x} + ks,$$

$$T_L = \bar{x} - ks,$$