To show that this theorem covers a class of stochastic processes of practical interest, it is shown next that the condition (1) of the theorem is true in strictly stationary processes which are normal. For this, it suffices to show that

$$\frac{P[(x > c), (y > c)]}{P(x > c)} \to 0, \qquad (c \to \infty), \tag{2}$$

where x and y have a bivariate normal distribution with means zero, variances unity and covariance ρ, with $|\rho| < 1$. Now

$$P[(x > c), (y > c)] = \frac{1}{2\pi\sqrt{1-\rho^2}} \int_c^\infty \int_c^\infty \exp\left[\frac{-1}{2(1-\rho^2)}(x^2 - 2\rho xy + y^2)\right] dx\, dy.$$

The substitution $x = r/c + c$ and $y = t/c + c$ leads to

$$P[(x > c), (y > c)] = \frac{\exp[(-c^2/(1+\rho)]}{2\pi c^2\sqrt{1-\rho^2}} \int_0^\infty \int_0^\infty \exp\left[-\frac{r^2 - 2\rho rt + t^2}{2c^2(1-\rho^2)}\right] \exp\left[-\frac{r+t}{1+\rho}\right] dr\, dt$$

$$\sim \frac{1}{2\pi} \exp\left(\frac{-c^2}{1+\rho}\right)\left[\frac{(1+\rho)^{3/2}}{\sqrt{1-\rho}}\frac{1}{c^2} - 0\left(\frac{1}{c^4}\right)\right], \qquad c \text{ large}.$$

Since $P(x > c) \sim (1/\sqrt{2\pi}) \exp(-\frac{1}{2}c^2)$, statement (2) follows.

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EXPRESSION OF THE k-STATISTICS k_9 AND k_{10} IN TERMS OF POWER SUMS AND SAMPLE MOMENTS

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The k statistics are of interest to workers in the theory of sampling distributions and moment statistics. They are related also to certain aspects of the theory of numbers and combinatory analysis, as indicated by Dressel [1].

The k statistics were introduced by Fisher in 1928 [2] to estimate the cumulants

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