number of runs is 5 or more. This probability applies to either positive or negative differences and should be divided by two if a specific sign is selected.

References

Bradley, J.V., *Distribution-Free Statistical Tests*, Prentice Hall, Englewood Cliffs, New Jersey, 1968.

P.S., Distribution of sample arrangements for runs up and down, *Annals of Mathematical Statistics*, *17*, 24-33, 1946.

Wallis, W.A., and G.H. Moore, A significance test for time series, *J. Amer. Statist. Assoc.*, *36*, 401-409, 1941.

Young, L.C., On randomness in ordered sequences, *Annals of Mathematical Statistics*, *12*, 153-162, 1941.

See, in particular, Chapter 25 of:

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See Also

Chapter III-12, **Statistics** for a function and operation overview; **StatsNPNominalSRTest** and **StatsRunsCDF**.

StatsStudentCDF

`StatsStudentCDF(t, n)`

The StatsStudentCDF function returns the Student (uniform) cumulative distribution function

$$F(t,n) = \begin{cases} \dfrac{1}{2}\left\{1 + I\left(\dfrac{n}{2},\dfrac{1}{2};1\right) - I\left(\dfrac{n}{2},\dfrac{1}{2};\dfrac{n}{n+t^2}\right)\right\} & t > 0 \\[2ex] \dfrac{1}{2}\left\{1 + I\left(\dfrac{n}{2},\dfrac{1}{2};\dfrac{n}{n+t^2}\right) - I\left(\dfrac{n}{2},\dfrac{1}{2};1\right)\right\} & t < 0 \\[2ex] \dfrac{1}{2} & t = 0 \end{cases}$$

where $n>0$ is degrees of freedom and is the incomplete beta function **betai**.

See Also

Chapter III-12, **Statistics** for a function and operation overview; the **StatsStudentPDF** and **StatsInvStudentCDF** functions.

StatsStudentPDF

`StatsStudentPDF(t, n)`

The StatsStudentPDF function returns the Student (uniform) probability distribution function

$$f(t,n) = \frac{\left(\dfrac{n}{n+t^2}\right)^{(n+1)/2}}{\sqrt{n}B\left(\dfrac{n}{2},\dfrac{1}{2}\right)} \, .$$

where $n>0$ is degrees of freedom and $B()$ is the **beta** function.

See Also

Chapter III-12, **Statistics** for a function and operation overview; the **StatsStudentCDF** and **StatsInvStudentCDF** functions.