

## StatsGEVCDF

/T=k	Displays results in a table. $k$ specifies the table behavior when it is closed.
$k=0:$	Normal with dialog (default).
$k=1:$	Kills with no dialog.
$k=2:$	Disables killing.

/Z Ignores errors. V\_flag will be set to -1 for any error and to zero otherwise.

### Details

The input *srcWave* must contain angles in radians, can be any number of dimensions, can be single or double precision, and should not contain NaNs or INFs.

StatsHodgesAjneTest performs the standard Hodges-Ajne test, which simply tests for uniformity against the hypothesis that the population is not uniformly distributed around the circle. This test finds a diameter that divides the circle into two halves such that one contains the least number of data  $m$ , the test statistic.

Use /SA to perform the modified (Batschelet) test, which tests against the alternative that the population is concentrated somehow about the specified angle. The modified test counts the number of points  $m'$  in 90-degree neighborhoods around the specified angle. The test statistic is given by  $C=n-m'$  where  $n$  is the number of points in the wave. The critical value is computed from the binomial probability density.

In both cases  $H_0$  is rejected if the statistic is smaller than the critical value.

V\_flag will be set to -1 for any error and to zero otherwise.

### References

Ajne, B., A simple test for uniformity of a circular distribution, *Biometrika*, 55, 343-354, 1968.

See, in particular, Chapter 27 of:

Zar, J.H., *Biostatistical Analysis*, 4th ed., 929 pp., Prentice Hall, Englewood Cliffs, New Jersey, 1999.

### See Also

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

**StatsCircularMeans**, **StatsCircularMoments**, **StatsWatsonUSquaredTest**, **StatsWatsonWilliamsTest**, and **StatsWheelerWatsonTest**.

## StatsGEVCDF

**StatsGEVCDF (x, μ, σ, ξ)**

The StatsGEVCDF function returns the generalized extreme value cumulative distribution function.

$$F(x, \mu, \sigma, \xi) = \exp \left\{ - \left[ 1 + \xi \left( \frac{x - \mu}{\sigma} \right)^{-1/\xi} \right] \right\},$$

where

$$1 + \xi \left( \frac{x - \mu}{\sigma} \right)^{-1/\xi} > 0,$$

and  $\sigma > 0$ .

### See Also

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

**StatsGEVPDF**, **StatsEValuePDF**, **StatsEValueCDF**, **StatsInvEValueCDF**

## StatsGEVPDF

**StatsGEVPDF (x, μ, σ, ξ)**

The StatsGEVPDF function returns the generalized extreme value probability distribution function.