StatsDExpCDF

StatsDExpCDF(*x*, *m*, *s*)

The StatsDExpCDF function returns the double-exponential cumulative distribution function

$$F(x;\mu,\sigma)=\begin{cases}\exp\left(\dfrac{x-\mu}{\sigma}\right) & when\ x<\mu\\ 1-\dfrac{1}{2}\exp\left(-\left|\dfrac{x-\mu}{\sigma}\right|\right) & when\ x\ge\mu\end{cases}$$

for σ>0. It returns NaN when σ=0.

See Also

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

StatsDExpPDF

StatsDExpPdf(*x*, *m*, *s*)

The StatsDExpPdf function returns the double-exponential probability distribution function

$$\mathrm{f}(x;\mu,\sigma)=\frac{1}{2\sigma}\exp\left[-\left|\frac{x-\mu}{\sigma}\right|\right],$$

where μ is the location parameter and σ>0 is the scale parameter. Use μ=0 and σ=1 for the standard form of the double exponential distribution. It returns NaN when σ=0.

See Also

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

StatsDIPTest

StatsDIPTest [/Z] *srcWave*

The StatsDIPTest operation performs Hartigan test for unimodality.

Flags

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

Details

The input to the operation *srcWave* is any real numeric wave. Outputs are: V_Value contains the dip statistic; V_min is the lower end of the modal interval; and V_max is the higher end of the modal interval. Percentage points or critical values for the dip statistic can be obtained from simulations using an identical sample size as in this example:

```
Function getCriticalValue(sampleSize,alpha)
Variable sampleSize,alpha

   Make/O/N=(sampleSize) dataWave
   Make/O/N=100000  dipResults
   Variable i
   for(i=0;i<100000;i+=1)
      dataWave=enoise(100)
      StatsDipTest dataWave
      dipResults[i]=V_Value
   endfor
   Histogram/P/B=4 dipResults              // Compute the PDF.
   Wave W_Histogram
   Integrate/METH=1 W_Histogram/D=W_INT    // Compute the CDF.
   Findlevel/Q  W_int,(1-alpha)            // Find the critical value.
   return V_LevelX
End
```