

HFCPPF**PURPOSE**

Compute the standard half-Cauchy percent point function.

DESCRIPTION

The standard half-Cauchy distribution has the following probability density function:

$$f(x) = \frac{2}{\pi(1+x^2)} \quad x \geq 0 \quad (\text{EQ 8-195})$$

The percent point function is calculated from the Cauchy distribution by: $G(p) = \text{CAUPPF}((1+p)/2)$ where CAUPPF is the percent point function of the standard Cauchy distribution.

SYNTAX

LET <y> = HFCPPF(<p>) <SUBSET/EXCEPT/FOR qualification>

where <p> is a variable, a number, or a parameter in the range 0 to 1;

<y> is a variable or a parameter (depending on what <p> is) where the computed half-Cauchy ppf value is stored;

and where the <SUBSET/EXCEPT/FOR qualification> is optional.

EXAMPLES

LET A = HFCPPF(0.9)

LET X2 = HFCPPF(X1)

NOTE

The general form of the half-Cauchy probability density function is:

$$f(x) = \left(\frac{1}{s}\right) \frac{2}{\pi \left(1 + \left(\frac{x-t}{s}\right)^2\right)} \quad x \geq \mu \quad (\text{EQ 8-196})$$

where μ is a location parameter and σ is a scale parameter.

DEFAULT

None

SYNONYMS

None

RELATED COMMANDS

HFCCDF	=	Compute the Cauchy cumulative distribution function.
HFCPDF	=	Compute the Cauchy probability density function.
CAUCDF	=	Compute the Cauchy cumulative distribution function.
CAUPDF	=	Compute the Cauchy probability density function.
CAUPPF	=	Compute the Cauchy percent point function.
NORCDF	=	Compute the normal cumulative distribution function.
NORPDF	=	Compute the normal probability density function.
NORPPF	=	Compute the normal percent point function.
HFNCDF	=	Compute the half-normal cumulative distribution function.
HFNPDF	=	Compute the half-normal probability density function.
HFNPPF	=	Compute the half-normal percent point function.

REFERENCE

“Continuous Univariate Distributions - Vol. I,” 2nd. ed., Johnson, Kotz, and Balakrishnan, Wiley and Sons, 1994 (page 328).

APPLICATIONS

Data Analysis

IMPLEMENTATION DATE

95/10

PROGRAM

TITLE AUTOMATIC

PLOT HFCPPF(P) FOR P = 0 0.01 0.99

