

NAME

spline – interpolate smooth curve

SYNOPSIS

spline [option] ...

DESCRIPTION

Spline takes pairs of numbers from the standard input as abscissas and ordinates of a function. It produces a similar set, which is approximately equally spaced and includes the input set, on the standard output. The cubic spline output (R. W. Hamming, *Numerical Methods for Scientists and Engineers*, 2nd ed., 349ff) has two continuous derivatives, and sufficiently many points to look smooth when plotted, for example by *plot* (I).

The following options are recognized, each as a separate argument.

a Supply abscissas automatically (they are missing from the input); spacing is given by the next argument, or is assumed to be 1 if next argument is not a number.

k The constant k used in the boundary value computation

$$y'_0 = ky'_1, \quad y''_n = ky''_{n-1}$$

is set by the next argument. By default $k = 0$.

n Space output points so that approximately n points occur between the lower and upper x limits. (Default $n = 100$.)

p Make output periodic, i.e. match derivatives at ends. First and last input values should normally agree.

x Next 1 (or 2) arguments are lower (and upper) x limits. Normally these limits are calculated from the data. Automatic abscissas start at lower limit (default 0).

SEE ALSO

plot (I)

AUTHOR

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BUGS

A limit of 1000 input points is enforced silently.