Package ‘plugdensity’

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Title    Plug-in Kernel Density Estimation  
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Description Kernel density estimation with global bandwidth selection  
          via "plug-in".  
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  plugin.density  Kernel Density Estimation by Plug-In Bandwidth Selection
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Description

The function provides kernel density estimation with iterative plug-in bandwidth selection.

Usage

  plugin.density(x, nout = 201, xout = NULL, na.rm = FALSE)
Arguments

x  vector of numbers whose density is to be estimated.
nout integer specifying the number of equispaced values to use only when xout = NULL (as by default).
xout numeric vector of abscissa values at which the density is to be evaluated. By default, an equispaced sequence of values covering (slightly more than) the range of x.
na.rm logical; if TRUE, missing values are removed from x. If FALSE any missing values cause an error.

Value

an object of class "density" inheriting also from class "density". It is a list with components

x the n coordinates of the points where the density is estimated.
y the estimated density values.
bw the bandwidth used.
n the sample size after elimination of missing values.
call the call which produced the result.
data.name the deparsed name of the x argument.

Author(s)

Algorithm and C code: Eva Herrmann <eherrmann@mathematik.tu-darmstadt.de>; R interface: Martin Maechler <maechler@r-project.org>.

References


See Also
density.

Examples

data(co2)
plot(dco2 <- density(co2), ylim = c(0, 0.03))
(pdco2 <- plugin.density(co2, xout = dco2$x))
lines(pdco2, col = "red")

plot(pdco2)# calls 'plot.density' method

str(pdco2 <- plugin.density(co2))
xo <- pdco2$x
str(d.co2 <- density(co2, n = length(xo), from=xo[1],to=max(xo),
width= 4 * pdco2$bw))
nms <- c("x","y", "bw", "n")
all.equal(d.co2[nms], pdco2[nms])
## are close: "Component 2 (= 'y'): Mean relative difference: 0.0009..."
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