Package ‘ipfp’

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Type Package

Title Fast Implementation of the Iterative Proportional Fitting Procedure in C

Version 1.0.1

Author Alexander W Blocker

Maintainer Alexander W Blocker <ablocker@gmail.com>

Description A fast (C) implementation of the iterative proportional fitting procedure. Based on corresponding code from the networkTomography package.

License Apache License (== 2.0)

LazyLoad yes

URL https://github.com/awblocker/ipfp

Collate ‘ipfp.R’

RoxygenNote 5.0.1

NeedsCompilation yes

Repository CRAN

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R topics documented:

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ipfp Function to run IPFP (iterative proportional fitting procedure)

Description

Use IPFP starting from x0 to produce vector x s.t. Ax = y within tolerance. Need to ensure that x0 > 0.
Usage

\texttt{ipfp(y, A, x0, tol = sqrt(.Machine$double.eps), maxit = 1000, verbose = FALSE, full = FALSE)}

Arguments

- \texttt{y}: numeric constraint vector (length nrow)
- \texttt{A}: constraint matrix (nrow x ncol)
- \texttt{x0}: numeric initial vector (length ncol)
- \texttt{tol}: numeric tolerance for IPFP; defaults to \texttt{sqrt(.Machine$double.eps)}
- \texttt{maxit}: integer maximum number of iterations for IPFP; defaults to \texttt{1e3}
- \texttt{verbose}: logical parameter to select verbose output from C function
- \texttt{full}: logical parameter to select full return (with diagnostic info)

Value

If not full, a vector of length ncol containing solution obtained by IPFP. If full, a list containing solution (as \texttt{x}), the number of iterations (as \texttt{iter}), and the L2 norm of Ax - y (as \texttt{errNorm})

Examples

\begin{verbatim}
A <- matrix(c(1,0,0,1,0,0,0,1,0,0,1,0,0,0,0,1), nrow=3)
x <- rgamma(ncol(A), 10, 1/100)
y <- A %*% x
x0 <- x * rgamma(length(x), 10, 10)
ans <- ipfp(y, A, x0, full=TRUE)
print(ans)
print(x)
\end{verbatim}
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