# Package 'fftw'

September 20, 2024

**Version** 1.0-9

**Title** Fast FFT and DCT Based on the FFTW Library

**Description** Provides a simple and efficient wrapper around the fastest
Fourier transform in the west (FFTW) library <http://www.fftw.org/>.

**Depends** R (>= 3.0.0)

**SystemRequirements** fftw3 (>= 3.1.2)

**License** GPL-2

**RoxygenNote** 6.0.1

**NeedsCompilation** yes

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**Repository** CRAN

**Date/Publication** 2024-09-20 16:00:02 UTC

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FFT                              *Calculate (inverse) DFT using the FFT method*

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## Description

see title

## Usage

```
FFT(x, ..., plan, inverse=FALSE)
IFFT(x, ..., plan, scale=TRUE)
DCT(x, ..., plan, type=1, inverse=FALSE)
IDCT(x, ..., plan, type=1, scale=TRUE)
```

## Arguments

| | |
|---|---|
| x | (complex) vector to process |
| ... | ignored |
| plan | FFTW plan, can be missing |
| inverse | perform inverse transform, provided for `fft` compatibility. |
| scale | scale results |
| type | type of DCT |

## Author(s)

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## See Also

[planFFT](#)

## Examples

```
n <- 2**16
x <- rnorm(n)
p <- planFFT(n)
y <- FFT(x, plan=p)

Mod(x - IFFT(FFT(x)))
```

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| planFFT | *Create FFTW plan* |
|---|---|

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## Description

see title

## Usage

```
planFFT(n, effort=0)
planDCT(n, type=1, effort=0)
```

## Arguments

| | |
|---|---|
| n | size of transform |
| type | type of DCT |
| effort | how hard fftw tries to find an optimal plan (0 to 3) |

## Author(s)

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## See Also

FFT and IFFT

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