

Package ‘htdp’

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Type Package

Title Horizontal Time Dependent Positioning

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Maintainer John Buonagurio <jbuonagurio@exponent.com>

Description Provides bindings to the National Geodetic Survey (NGS) Horizontal Time Dependent Positioning (HTDP) utility, v3.2.5, written by Richard Snay, Chris Pearson, and Jarir Saleh of NGS. HTDP is a utility that allows users to transform positional coordinates across time and between spatial reference frames. See <<https://www.ngs.noaa.gov/TOOLS/Htdp/Htdp.shtml>> for more information.

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LazyData TRUE

Imports Rcpp (>= 0.12.5)

LinkingTo Rcpp

URL <https://github.com/jbuonagurio/RHTDP>

BugReports <https://github.com/jbuonagurio/RHTDP/issues>

NeedsCompilation yes

Author John Buonagurio [aut, cre],
National Geodetic Survey [cph] (Author of included HTDP code)

Repository CRAN

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`displace`*Estimate horizontal displacement and velocity between two dates*

Description

Returns an `R` data.frame containing the crustal displacement in meters and velocity in mm/yr at a specified location from time `t1` to time `t2`. The estimated displacement equals the velocity at this location multiplied by the time difference (`t2 - t1`) plus all coseismic and postseismic motion that has occurred between these two times.

Usage

```
displace(xy, t0, t1, iopt)
```

Arguments

<code>xy</code>	A matrix of longitude and latitude coordinates in decimal degrees
<code>t0</code>	The starting date
<code>t1</code>	The ending date
<code>iopt</code>	The key identifying the reference frame for the input values. See iopt for a list of supported values.

Value

A data.frame with 6 columns:

<code>de</code>	Eastward displacement (meters)
<code>dn</code>	Northward displacement (meters)
<code>du</code>	Upward displacement (meters)
<code>ve</code>	Eastward velocity (mm/yr)
<code>vn</code>	Northward velocity (mm/yr)
<code>vu</code>	Upward velocity (mm/yr)

See Also

[iopt](#)

Examples

```
beta <- matrix(data=c(-121.7722, 36.6698), nrow=1)
t0 <- as.Date("1989-10-16")
t1 <- as.Date("1989-10-18")
displace(beta, t0, t1, 1)
```

iopt	<i>List reference frames recognized by HTDP</i>
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Description

Returns an R data.frame containing a list of reference frames recognized by HTDP. See Table 4 in the HTDP User's Guide for more information.

Usage

```
iopt()
```

Value

A data.frame with 2 columns:

key	The number that the HTDP software uses to identify a particular reference frame. Some reference frames share the same key.
value	The description of the reference frame.

See Also

[displace](#)

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