Package ‘htdp’

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Type Package
Title Horizontal Time Dependent Positioning
Version 0.1.4
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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

xy A matrix of longitude and latitude coordinates in decimal degrees
t0 The starting date
t1 The ending date
iopt 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:

dE Eastward displacement (meters)
dN Northward displacement (meters)
dU Upward displacement (meters)
ve Eastward velocity (mm/yr)
vN Northward velocity (mm/yr)
vU 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  

List reference frames recognized by HTDP

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.

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