Package 'Dykifier'

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Description Dyke hallucinations

Title Dykifier

Depends R (>= 2.10)

License GPL-2

URL https://github.com/suppechasper/Dykifier

BugReports https://github.com/suppechasper/Dykifier/issues

Imports shiny, RColorBrewer, inline

R topics documented:

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dykifier *Dike Occurrence Estimation*

Description

This package estimates and displays dike connections given a list of dike segments.

The package consist of two parts:

1. The process.data function processes the data for estimation and display in the dykifier
2. The dykifier starts and interactive visualization that estimates and displays dike connections.

The first part computes for each end point of a segment its k nearest neighbor of segment end points and stores the distance d and the angles a_1, a_2 a connecting segment would create.

The dykifier visualization estimates for each of those potential connecting segments the probability of the connection s by

$$p(s) = \frac{1}{\sqrt{(2\pi\sigma_d^2)}} \exp(\frac{d^2}{2\sigma_d^2} \frac{1}{\sqrt{(2\pi\sigma_a^2)}} \exp(\frac{a_1^2}{2\sigma_a^2} \frac{1}{\sqrt{(2\pi\sigma_a^2)}} \exp(\frac{a_2^2}{2\sigma_a^2}$$

with $\sigma_d = df_d$ and σ_a, where f_d and σ_a can be adjusted in the user interface through the *Distance* and *Angle* sliders.

After computation of all the k probabilities for each segment a greedy strategy is employed to maximize overall fit. For each endpoint only the highest probability segment is selected to be included for connecting segments.

For display purposes the probabilities are scaled from zero to one. The user interface permits to select a probability cutoff to only include segments above a threshold probability.

Usage

```
dykify(datafile = "intersections-subset")
```

Arguments

`datafile`	Datafile to use. Currently takes "interesection-subset" or "intersection". Datafiles can be generated by the process.data script, which would need to be adapted to the specific data set. The generated data file need to be added to R's data search path in order for the dykifier ui to find the data.

Author(s)

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