

Package ‘deadband’

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Title Statistical Deadband Algorithms Comparison
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Description Statistical deadband algorithms are based on the Send-On-Delta concept as in Miskowicz(2006,<doi:10.3390/s6010049>). A collection of functions compare effectiveness and fidelity of sampled signals using statistical deadband algorithms.
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deadbandAD

deadbandAD Function

Description

This function allows you to compute the Absolute Deadband(AD) algorithm

Usage

```
deadbandAD(x, Emax, Eumin, d, offset)
```

Arguments

x	The vector of the samples before the deadband algorithm
Emax	The Engineering Unit higher bound
Eumin	The Engineering Unit lower bound
d	Deadband percent parameter in range 0..1
offset	How many sample do you want skip at begin? Defaults is n=20

Value

A list containing the L2 distance and the Number of filtered samples

Examples

```
deadbandAD(rnorm(40, mean = 0, sd = 1),+0.5,-0.5,0.01,20)
```

deadbandBD

deadbandBD Function

Description

This function allows you to compute the Bollinger Deadband(BD) algorithm

Usage

```
deadbandBD(x, d, offset, k)
```

Arguments

x	The vector of the samples before the deadband algorithm
d	Deadband percent parameter in range 0..1
offset	How many sample do you want skip at begin? Defaults is n=20
k	multiplier used in Bollinger theory

Value

A list containing the L2 distance and the Number of filtered samples

Examples

```
deadbandBD(rnorm(40, mean = 0, sd = 1), 0.01, 20, 2)
```

`deadbandVD`*deadbandVD Function*

Description

This function allows you to compute the Volatility Deadband(VD) algorithm

Usage

```
deadbandVD(x, d, offset, k)
```

Arguments

<code>x</code>	The vector of the samples before the deadband algorithm
<code>d</code>	Deadband percent parameter in range 0..1
<code>offset</code>	How many sample do you want skip at begin? Defaults is n=20
<code>k</code>	multiplier used in Bollinger theory

Value

A list containing the L2 distance and the Number of filtered samples

Examples

```
deadbandVD(rnorm(40, mean = 0, sd = 1), 0.01, 20, 2)
```

synthetic.sub35	<i>Samples subset of 10 pseudo periodic signals</i>
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Description

Sampling rate: 210ms for synthetic.sub35;

Usage

synthetic.sub35

Format

A data table with a column for each signal:

Details

The original dataset containing the 10 pseudo periodic signal are available for download at: <http://archive.ics.uci.edu/ml/machine-learning-databases/synthetic-mld/synthetic.data.gz> More Info at: <http://archive.ics.uci.edu/ml/machine-learning-databases/synthetic-mld/synthetic.data.html>

Dataset freely available for research use.

synthetic.sub40	<i>Samples subset of 10 pseudo periodic signals</i>
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Description

Sampling rate: 240ms for synthetic.sub40;

Usage

synthetic.sub40

Format

A data table with a column for each signal:

Details

The original dataset containing the 10 pseudo periodic signal are available for download at: <http://archive.ics.uci.edu/ml/machine-learning-databases/synthetic-mld/synthetic.data.gz> More Info at: <http://archive.ics.uci.edu/ml/machine-learning-databases/synthetic-mld/synthetic.data.html>

Dataset freely available for research use.

synthetic.sub42	<i>Samples subset of 10 pseudo periodic signals</i>
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Description

Sampling rate: 252ms for synthetic.sub42; The original dataset containing the 10 pseudo periodic signal are available for download at: <http://archive.ics.uci.edu/ml/machine-learning-databases/synthetic-mld/synthetic.data.gz> More Info at: <http://archive.ics.uci.edu/ml/machine-learning-databases/synthetic-mld/synthetic.data.html>

Usage

synthetic.sub42

Format

A data table with a column for each signal:

Details

Dataset freely available for research use.

synthetic.sub50	<i>Samples subset of 10 pseudo periodic signals</i>
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Description

Sampling rate: 300ms for synthetic.sub50;

Usage

synthetic.sub50

Format

A data table with a column for each signal:

Details

The original dataset containing the 10 pseudo periodic signal are available for download at: <http://archive.ics.uci.edu/ml/machine-learning-databases/synthetic-mld/synthetic.data.gz> More Info at: <http://archive.ics.uci.edu/ml/machine-learning-databases/synthetic-mld/synthetic.data.html>

Dataset freely available for research use.

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