

Package: deadband (via r-universe)

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Type Package

Title Statistical Deadband Algorithms Comparison

Version 0.1.0

Author Nunzio Torrisi

Maintainer Nunzio Torrisi <nunzio.torrisi@ieee.org>

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

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Depends R (>= 2.10)

Imports TTR

LazyData TRUE

RoxygenNote 5.0.1

NeedsCompilation no

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Repository <https://nunziotorrisi.r-universe.dev>

RemoteUrl <https://github.com/cran/deadband>

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deadbandAD *deadbandAD Function*

Description

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

Usage

```
deadbandAD(x, EUmax, EUmin, d, offset)
```

Arguments

x	The vector of the samples before the deadband algorithm
EUmax	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

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

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

synthetic.sub35 *Samples subset of 10 pseudo periodic signals*

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 *Samples subset of 10 pseudo periodic signals*

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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