Package 'deadband'

May 8, 2026

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>). A collection of functions compare effectiveness and fidelity of sampled signals using statistical deadband algorithms.

License GPL-2

Depends R (>= 2.10)

Imports TTR

LazyData TRUE

RoxygenNote 5.0.1

NeedsCompilation no

Repository CRAN

Date/Publication 2016-09-12 08:11:40

Contents

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 pesudo 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 periodoc 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 pesudo 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 periodoc 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 *Samples subset of 10 pesudo periodic signals*

Description

Sampling rate: 252ms for synthetic.sub42; The original dataset containing the 10 pseudo periodoc 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 *Samples subset of 10 pesudo periodic signals*

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 periodoc 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.

Index