

# Package ‘SSRTcalc’

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**Type** Package

**Title** Easy SSRT Calculation in R

**Version** 0.2.3

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**Description** This is a collection of functions to calculate stop-signal reaction time (SSRT) in R. Includes functions for both “integration” and “mean” methods; both fixed and adaptive stop-signal delays are supported (see appropriate functions). Calculation is based on Verbruggen et al. (2019) <doi:10.7554/eLife.46323.001> and Verbruggen et al. (2013) <doi:10.1177/0956797612457390>.

**License** GPL-3

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 7.1.1

**Imports** stats (>= 4.0.5)

## R topics documented:

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integration\_adaptiveSSD

*SSRT using integration method for studies with "adaptive" method of setting SSD*

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## Description

Estimating SSRT using integration method for studies that use adaptive (increasing/decreasing by a given increment) stop-signal delays.

**Usage**

```
integration_adaptiveSSD(df, stop_col, rt_col, acc_col, ssd_col)
```

**Arguments**

df	Dataframe with response time, accuracy, indication whether trial is stop or go, and delays for a given trial.
stop_col	Name of the column in the dataframe df that indicates whether a given trial is a "stop" or a "go" trial ( 0 = go, 1 = stop)
rt_col	Name of the column in the dataframe df that contains response time in seconds
acc_col	Name of the column in the dataframe df that contains accuracy of inhibition ( 0 = incorrect, 1 = correct)
ssd_col	Name of the column in the dataframe df that contains stop-signal delays

**Value**

SSRT corresponding to the  $n$ th  $rt - ssd$ ;  $n = p(\text{respond}|\text{signal}) \times \text{number of goRTs}$

**Examples**

```
## Not run: integration_adaptiveSSD(df = results_df, stop_col = 'stopgo',
ssd_col = 'soa', rt_col = 'RT', acc_col = 'acc')
## End(Not run)
```

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integration_fixedSSD	<i>SSRT using integration method for studies with "fixed" method of setting SSD</i>
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**Description**

Estimating SSRT using integration method for studies that use fixed (randomly chosen on each trial from a pre-determined set) stop-signal delays.

**Usage**

```
integration_fixedSSD(df, stop_col, rt_col, acc_col, ssd_col, ssd_list)
```

**Arguments**

df	Dataframe with response time, accuracy, indication whether trial is stop or go, and delays for a given trial.
stop_col	Name of the column in the dataframe df that indicates whether a given trial is a "stop" or a "go" trial ( 0 = go, 1 = stop)
rt_col	Name of the column in the dataframe df that contains response time in seconds
acc_col	Name of the column in the dataframe df that contains accuracy of inhibition ( 0 = incorrect, 1 = correct)
ssd_col	Name of the column in the dataframe df that contains stop-signal delays
ssd_list	List of stop-signal delays used in the experiment

**Value**

SSRT corresponding to the nth rt -ssd;  $n = p(\text{respond}|\text{signal}) \times \text{number of goRTs}$

**Examples**

```
## Not run: integration_fixedSSD(df = results_df, stop_col = 'stopgo',  ssd_col = 'soa',
rt_col = 'RT', acc_col = 'acc', ssd_list = c(0.4, 0.6, 0.8, 0.9, 1.0))
## End(Not run)
```

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mean_adaptiveSSD	<i>SSRT using mean method for studies with "adaptive" method of setting SSD</i>
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**Description**

Estimating SSRT using mean method for studies that use adaptive (increasing/decreasing by a given increment) stop-signal delays

**Usage**

```
mean_adaptiveSSD(df, rt_col, ssd_col, stop_col)
```

**Arguments**

df	Dataframe with response time, accuracy, indication whether trial is stop or go, and delays for a given trial.
rt_col	Name of the column in the dataframe df that contains response time in seconds
ssd_col	Name of the column in the dataframe df that contains stop-signal delays
stop_col	Name of the column in the dataframe df that indicates whether a given trial is a "stop" or a "go" trial ( 0 = go, 1 = stop)

**Value**

Spline-interpolated stop-signal reaction time corresponding roughly to 50

**Examples**

```
## Not run: mean_adaptiveSSD(df = results_df, stop_col = 'stopgo',  ssd_col = 'soa', rt_col = 'RT')
```

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mean_fixedSSD	<i>SSRT using mean method for studies with "fixed" method of setting SSD</i>
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### Description

Estimating SSRT using mean method for studies that use fixed (randomly chosen on each trial from a pre-determined set) stop-signal delays

### Usage

```
mean_fixedSSD(df, stop_col, rt_col, acc_col, ssd_col, ssd_list)
```

### Arguments

df	Dataframe with response time, accuracy, indication whether trial is stop or go, and delays for a given trial.
stop_col	Name of the column in the dataframe df that indicates whether a given trial is a "stop" or a "go" trial ( 0 = go, 1 = stop)
rt_col	Name of the column in the dataframe df that contains response time in seconds
acc_col	Name of the column in the dataframe df that contains accuracy of inhibition ( 0 = incorrect, 1 = correct)
ssd_col	Name of the column in the dataframe df that contains stop-signal delays
ssd_list	List of stop-signal delays used in the experiment

### Value

Stop-signal reaction time corresponding roughly to 50 percent inhibition accuracy.

### Examples

```
## Not run: mean_fixedSSD(df = results_df, rt_col = 'RT', stop_col = 'stopgo', acc_col = 'sst_acc',
ssd_col = 'soa', ssd_list = c(0.1, 0.2, 0.3, 0.5, 0.6))
## End(Not run)
```

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plotInhFunc	<i>Plots and prints stop-signal delays and accuracies</i>
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### Description

Plots and prints stop-signal delays and corresponding accuracies. For studies that use fixed (randomly chosen on each trial from a pre-determined set) stop-signal delays.

### Usage

```
plotInhFunc(df, stop_col, ssd_col, acc_col)
```

**Arguments**

<code>df</code>	Dataframe with response time, accuracy, indication whether trial is stop or go, and delays for a given trial.
<code>stop_col</code>	Name of the column in the dataframe <code>df</code> that indicates whether a given trial is a "stop" or a "go" trial ( 0 = go, 1 = stop)
<code>ssd_col</code>	Name of the column in the dataframe <code>df</code> that contains stop-signal delays
<code>acc_col</code>	Name of the column in the dataframe <code>df</code> that contains accuracy of inhibition ( 0 = incorrect, 1 = correct)

**Value**

Line plot of the inhibition function.

**Examples**

```
## Not run: plotInhFunc(df = df, stop_col='vol', ssd_col='soa', acc_col='agn_acc')
```

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