

# Package: simulatetimeseries (via r-universe)

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**Type** Package

**Title** Simulate complex synthetic time series for benchmarks

**Version** 0.2.0

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**Description** Simulate complex synthetic time series for benchmarks.

**License** MIT

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 7.3.0

**VignetteBuilder** knitr

**Repository** <https://techtanique.r-universe.dev>

**RemoteUrl** <https://github.com/thierrymoudiki/simulatetimeseries>

**RemoteRef** HEAD

**RemoteSha** cfd23bf05ad8d05caf3ec63b9a011c0fd17a9d33

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| get_data_1 | <i>Get data 1</i> |
|------------|-------------------|

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**Description**

Data from Task Views + synthetic

**Usage**

```
get_data_1(diffs = TRUE)
```

**Arguments**

|       |  |
|-------|--|
| diffs | return the differentiated series or not? (lag = 1) |
|-------|--|

**Value**

a list of time series objects

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|                        |  |
|------------------------|--|
| simulate_time_series_1 | <i>Simulate a univariate time series dataset 1</i> |
|------------------------|--|

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**Description**

Simulate a univariate time series dataset 1

**Usage**

```
simulate_time_series_1(
  n,
  trend = c("linear", "quadratic"),
  seasonality = c("none", "sinusoidal"),
  distribution = c("normal", "student"),
  noise_sd = 10,
  seed = 123
)
```

**Arguments**

|              |  |
|--------------|--|
| n            | numerical, number of data points       |
| trend        | string, "linear" or "quadratic"        |
| seasonality  | string, "none" or "sinusoidal"         |
| distribution | string, "normal" and "student"         |
| noise_sd     | numerical, standard deviation of noise |
| seed         | int, reproducibility seed              |

**Value**

a native time series object

**Examples**

```
ts_data <-  
simulate_time_series_1(  
  n = 100L,  
  trend = "quadratic",  
  seasonality = "sinusoidal",  
  noise_sd = 2500,  
  distribution = "normal"  
)  
plot(ts_data, type = "l", main = "Simulated Time Series")
```

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simulate\_time\_series\_2

*Simulate a univariate time series dataset 2*

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**Description**

Simulate a univariate time series dataset 2

**Usage**

```
simulate_time_series_2(  
  n,  
  trend = c("linear", "sinusoidal"),  
  seasonality = FALSE,  
  noise_sd = 0.1,  
  ar = 0,  
  ma = 0,  
  seed = 123  
)
```

**Arguments**

|             |  |
|-------------|--|
| n           | numerical, number of data points       |
| trend       | string, "linear" or "sinusoidal"       |
| seasonality | string, "none" or "sinusoidal"         |
| noise_sd    | numerical, standard deviation of noise |
| ar          | autoregressive order                   |
| ma          | moving average order                   |
| seed        | int, reproducibility seed              |

**Value**

a native time series object

**Examples**

```
ts_data <-  
simulate_time_series_2(  
  n = 100L,  
  trend = "sinusoidal",  
  seasonality = TRUE,  
  noise_sd = runif(n = 1, min = 20, max=50)  
)  
plot(ts_data, type = "l", main = "Simulated Time Series")
```

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simulate\_time\_series\_3

*Simulate a univariate time series dataset 3*

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**Description**

Simulate a univariate time series dataset 3

**Usage**

```
simulate_time_series_3(n = 100, seed = 123)
```

**Arguments**

|      |                                  |
|------|----------------------------------|
| n    | numerical, number of data points |
| seed | int, reproducibility seed        |

**Value**

a native time series object

**Examples**

```
print(simulate_time_series_3(10))
```

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`simulate_time_series_4`*Simulate a univariate time series dataset 4*

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**Description**

Simulate a univariate time series dataset 4

**Usage**

```
simulate_time_series_4(n = 600, psi = 0.1, theta = 0.1, seed = 123)
```

**Arguments**

|                    |   |
|--------------------|---|
| <code>n</code>     | numerical, number of data points                  |
| <code>psi</code>   | 1st parameter for innovation variance (in [0, 1]) |
| <code>theta</code> | 2nd parameter for innovation variance (in [0, 1]) |
| <code>seed</code>  | int, reproducibility seed                         |

**Value**

a native time series object

**Examples**

```
plot(simulate_time_series_4())
```

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