

# Package: forecastbaselines (via r-universe)

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**Type** Package

**Title** R Interface to ForecastBaselines.jl

**Version** 0.1.0

**Description** Provides an R interface to the ForecastBaselines.jl Julia package, enabling access to 10 baseline forecasting models including ARMA, ETS, STL, and others. Supports probabilistic forecasting with multiple interval methods and seamless integration with the scoringutils evaluation framework.

**License** MIT + file LICENSE

**Encoding** UTF-8

**LazyData** true

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**SystemRequirements** Julia (>= 1.9)

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**BugReports** <https://github.com/epiforecasts/forecastbaselines/issues>

**Suggests** testthat (>= 3.0.0), ggplot2, hubVis, knitr, rmarkdown

**Remotes** hubverse-org/hubVis

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

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---

<i>add_intervals</i>	<i>Add Intervals to Forecast</i>
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---

**Description**

Add Intervals to Forecast

**Usage**

`add_intervals(forecast, intervals)`

**Arguments**

forecast	A Forecast object
intervals	Interval data structure

**Value**

Updated Forecast object

---

<i>add_median</i>	<i>Add Median to Forecast</i>
-------------------	-------------------------------

---

**Description**

Add Median to Forecast

**Usage**

`add_median(forecast, median)`

**Arguments**

forecast	A Forecast object
median	Numeric vector of median forecasts

**Value**

Updated Forecast object

---

add\_temporal\_info      *Add Temporal Information to Forecast*

---

**Description**

Add Temporal Information to Forecast

**Usage**

```
add_temporal_info(forecast, reference_date, target_date, resolution)
```

**Arguments**

forecast	A Forecast object
reference_date	Reference date
target_date	Target date
resolution	Time resolution

**Value**

Updated Forecast object

---

add\_trajectories      *Add Trajectories to Forecast*

---

**Description**

Add Trajectories to Forecast

**Usage**

```
add_trajectories(forecast, trajectories)
```

**Arguments**

forecast	A Forecast object
trajectories	Matrix of trajectories

**Value**

Updated Forecast object

---

add_truth	<i>Add Truth Values to Forecast</i>
-----------	-------------------------------------

---

**Description**

Add Truth Values to Forecast

**Usage**

```
add_truth(forecast, truth)
```

**Arguments**

forecast	A Forecast object
truth	Numeric vector of observed values

**Value**

Updated Forecast object

---

ARMAModel	<i>ARMA Model</i>
-----------	-------------------

---

**Description**

Creates an AutoRegressive Moving Average model.

**Usage**

```
ARMAModel(p = 0L, q = 0L, s = 0L, include_mean = TRUE, include_drift = FALSE)
```

**Arguments**

p	AR order (default: 0)
q	MA order (default: 0)
s	Seasonal period (default: 0 for no seasonality)
include_mean	Whether to include a mean term (default: TRUE)
include_drift	Whether to include a drift term (default: FALSE)

**Value**

An ARMAModel object

**Examples**

```
## Not run:  
# AR(1)  
model <- ARMAModel(p = 1)  
  
# MA(1)  
model <- ARMAModel(q = 1)  
  
# ARMA(2,1) with seasonality  
model <- ARMAModel(p = 2, q = 1, s = 12)  
  
## End(Not run)
```

---

as\_forecast\_point.ForecastBaselines\_Forecast

*Convert ForecastBaselines Forecast to scoringutils point forecast*

---

**Description**

S3 method to convert a ForecastBaselines\_Forecast object to a scoringutils forecast\_point object. This allows seamless integration with scoringutils.

**Usage**

```
## S3 method for class 'ForecastBaselines_Forecast'  
as_forecast_point(data, ...)
```

**Arguments**

data	A ForecastBaselines_Forecast object
...	Additional arguments (not used)

**Value**

A forecast\_point object from scoringutils

**Examples**

```
## Not run:  
# Convert and validate as point forecast  
fc_point <- scoringutils::as_forecast_point(forecast)  
  
## End(Not run)
```

---

as\_forecast\_quantile.ForecastBaselines\_Forecast  
*Convert ForecastBaselines Forecast to scoringutils quantile forecast*

---

### Description

S3 method to convert a ForecastBaselines\_Forecast object to a scoringutils forecast\_quantile object. This allows seamless integration with scoringutils.

### Usage

```
## S3 method for class 'ForecastBaselines_Forecast'  
as_forecast_quantile(data, ...)
```

### Arguments

data	A ForecastBaselines_Forecast object with quantiles
...	Additional arguments (not used)

### Value

A forecast\_quantile object from scoringutils

### Examples

```
## Not run:  
# Convert and validate as quantile forecast  
fc_quantile <- scoringutils::as_forecast_quantile(forecast)  
  
## End(Not run)
```

---

as\_hubverse *Convert ForecastBaselines Forecast to hubverse format*

---

### Description

Converts a ForecastBaselines\_Forecast object to the hubverse format used by hubVis for visualization. Returns a list with model\_output and target\_data data frames.

### Usage

```
as_hubverse(  
  data,  
  start_date = NULL,  
  horizon_unit = c("day", "week", "month"),  
  observed_data = NULL  
)
```

**Arguments**

<code>data</code>	A ForecastBaselines_Forecast object with quantiles, or a scoringutils forecast_quantile object
<code>start_date</code>	Optional start date for the time series. If NULL (default), uses horizon numbers as target_date values. Can be a Date object or character string in "YYYY-MM-DD" format.
<code>horizon_unit</code>	Character string specifying the time unit for horizons. One of "day" (default), "week", or "month". Used when start_date is provided.
<code>observed_data</code>	Optional numeric vector of all observed values (training + test). If provided, will be used to populate target_data with complete historical context.

**Details**

The hubVis and hubUtils packages are not on CRAN and must be installed from GitHub: `remotes::install_github("hubverse-org/hubVis")`

**Value**

A list with two elements:

**model\_output** Data frame (model\_out\_tbl) with columns: target\_date, value, model\_id, output\_type, output\_type\_id

**target\_data** Data frame with columns: date, observation

**Examples**

```
## Not run:
# With observed data for complete visualization context
hubverse_data <- as_hubverse(forecast,
  start_date = "2024-01-01",
  horizon_unit = "week",
  observed_data = full_data
)

# Install hubVis/hubUtils from GitHub for visualization
# remotes::install_github("hubverse-org/hubUtils", "hubverse-org/hubVis")

# Visualize with hubVis (if installed)
# Note: as_hubverse() automatically converts model_output to model_out_tbl
if (requireNamespace("hubVis", quietly = TRUE)) {
  hubVis::plot_step_ahead_model_output(
    hubverse_data$model_output,
    hubverse_data$target_data
  )
}

## End(Not run)
```

---

ConstantModel	<i>Constant Model</i>
---------------	-----------------------

---

**Description**

Creates a naive forecast model that uses the last observed value as the forecast for all future horizons.

**Usage**

```
ConstantModel()
```

**Value**

A ConstantModel object

**Examples**

```
## Not run:  
model <- ConstantModel()  
  
## End(Not run)
```

---

EmpiricalInterval	<i>Empirical Interval Method</i>
-------------------	----------------------------------

---

**Description**

Creates prediction intervals by bootstrapping from historical forecast errors. This is a non-parametric method that doesn't assume any particular distribution.

**Usage**

```
EmpiricalInterval(  
  n_trajectories = 1000L,  
  min_observation = 1L,  
  bootstrap_distribution = NULL,  
  seed = NULL,  
  positivity_correction = "none",  
  symmetry_correction = FALSE,  
  stepwise = FALSE,  
  return_trajectories = FALSE  
)
```

**Arguments**

**n\_trajectories** Number of bootstrap samples to generate (default: 1000)  
**min\_observation** Minimum number of observations required (default: 1)  
**bootstrap\_distribution** Optional distribution to sample from (default: NULL)  
**seed** Random seed for reproducibility (default: NULL)  
**positivity\_correction** Method to ensure positive forecasts: "none", "post\_clip", "truncate", or "zero\_floor" (default: "none")  
**symmetry\_correction** Whether to apply symmetry correction (default: FALSE)  
**stepwise** Whether to use stepwise intervals (default: FALSE)  
**return\_trajectories** Whether to return forecast trajectories (default: FALSE)

**Value**

An EmpiricalInterval object

**Examples**

```

## Not run:
# Basic empirical intervals
method <- EmpiricalInterval()

# With more trajectories and seed
method <- EmpiricalInterval(n_trajectories = 2000, seed = 123)

# With positivity correction for count data
method <- EmpiricalInterval(
  n_trajectories = 1000,
  positivity_correction = "post_clip"
)

# Return trajectories for visualization
method <- EmpiricalInterval(return_trajectories = TRUE)

## End(Not run)

```

---

 ETSModel

*ETS Model*


---

**Description**

Creates an Error-Trend-Season exponential smoothing model.

**Usage**

```
ETSMModel(  
  error_type = "A",  
  trend_type = "N",  
  season_type = "N",  
  s = NULL,  
  damped = FALSE  
)
```

**Arguments**

error_type	Error type: "A" (additive), "M" (multiplicative), or "N" (none)
trend_type	Trend type: "A" (additive), "M" (multiplicative), "Ad" (damped additive), "Md" (damped multiplicative), or "N" (none)
season_type	Season type: "A" (additive), "M" (multiplicative), or "N" (none)
s	Seasonal period (required if season_type is not "N")
damped	Whether to use damped trend (default: FALSE)

**Value**

An ETSMModel object

**Examples**

```
## Not run:  
# Simple exponential smoothing (A,N,N)  
model <- ETSMModel(error_type = "A", trend_type = "N", season_type = "N")  
  
# Holt's linear trend (A,A,N)  
model <- ETSMModel(error_type = "A", trend_type = "A", season_type = "N")  
  
# Holt-Winters additive (A,A,A)  
model <- ETSMModel(  
  error_type = "A", trend_type = "A", season_type = "A", s = 12  
)  
  
# Holt-Winters multiplicative (M,M,M)  
model <- ETSMModel(  
  error_type = "M", trend_type = "M", season_type = "M", s = 12  
)  
  
## End(Not run)
```

---

filter\_horizons      *Filter Forecast to Specific Horizons*

---

**Description**

Filter Forecast to Specific Horizons

**Usage**

```
filter_horizons(forecast, horizons)
```

**Arguments**

forecast	A Forecast object
horizons	Vector of horizons to keep

**Value**

Filtered Forecast object

---

filter\_levels      *Filter Forecast to Specific Confidence Levels*

---

**Description**

Filter Forecast to Specific Confidence Levels

**Usage**

```
filter_levels(forecast, levels)
```

**Arguments**

forecast	A Forecast object
levels	Vector of confidence levels to keep

**Value**

Filtered Forecast object

---

fit_baseline	<i>Fit a Baseline Model</i>
--------------	-----------------------------

---

**Description**

Fits a baseline forecasting model to observed data.

**Usage**

```
fit_baseline(x, model, temporal_info = NULL)
```

**Arguments**

x	Numeric vector of time series data
model	A model created using <code>ConstantModel()</code> , <code>ARMAModel()</code> , <code>ETSModel()</code> , or other model functions (see <code>?ConstantModel</code> for available models)
temporal_info	Optional <code>TemporalInfo</code> object with start date and resolution

**Value**

A fitted model object that can be used for forecasting

**Examples**

```
## Not run:  
data <- c(1.2, 2.3, 3.1, 2.8, 3.5, 4.2, 3.9)  
model <- ARMAModel(p = 1, q = 1)  
fitted <- fit_baseline(data, model)  
  
## End(Not run)
```

---

forecast	<i>Generate Complete Forecast with Intervals</i>
----------	--

---

**Description**

Generates a complete forecast including point forecasts, prediction intervals, and optionally trajectories.

**Usage**

```
forecast(  
  fitted,  
  interval_method = NoInterval(),  
  horizon = 1L,  
  levels = 0.95,  
  include_median = TRUE,  
  truth = NULL,  
  model_name = ""  
)
```

**Arguments**

fitted	A fitted model object from fit_baseline()
interval_method	Interval method object (NoInterval, EmpiricalInterval, etc.)
horizon	Integer or vector of integers specifying forecast horizons
levels	Numeric vector of confidence levels (default: 0.95)
include_median	Whether to include median forecast (default: TRUE)
truth	Optional vector of true values for evaluation
model_name	Optional name for the model

**Value**

A Forecast object (list) containing forecasts and metadata

**Examples**

```
## Not run:  
# Point forecast only  
fc <- forecast(fitted, interval_method = NoInterval(), horizon = 1:12)  
  
# With prediction intervals  
fc <- forecast(fitted,  
  interval_method = EmpiricalInterval(n_trajectories = 1000),  
  horizon = 1:12,  
  levels = c(0.80, 0.95)  
)  
  
# With truth for evaluation  
fc <- forecast(fitted,  
  interval_method = EmpiricalInterval(),  
  horizon = 1:12,  
  truth = c(3.6, 3.8, 4.1, ...)  
)  
  
## End(Not run)
```

---

has_horizon	<i>Check if Forecast has Horizon</i>
-------------	--------------------------------------

---

**Description**

Check if Forecast has Horizon

**Usage**

has\_horizon(forecast)

**Arguments**

forecast      A Forecast object

**Value**

Logical TRUE/FALSE

---

has_intervals	<i>Check if Forecast has Intervals</i>
---------------	--

---

**Description**

Check if Forecast has Intervals

**Usage**

has\_intervals(forecast)

**Arguments**

forecast      A Forecast object

**Value**

Logical TRUE/FALSE

---

has_mean	<i>Check if Forecast has Mean</i>
----------	-----------------------------------

---

**Description**

Check if Forecast has Mean

**Usage**

```
has_mean(forecast)
```

**Arguments**

forecast      A Forecast object

**Value**

Logical TRUE/FALSE

---

has_median	<i>Check if Forecast has Median</i>
------------	-------------------------------------

---

**Description**

Check if Forecast has Median

**Usage**

```
has_median(forecast)
```

**Arguments**

forecast      A Forecast object

**Value**

Logical TRUE/FALSE

---

has\_trajectories      *Check if Forecast has Trajectories*

---

**Description**

Check if Forecast has Trajectories

**Usage**

has\_trajectories(forecast)

**Arguments**

forecast      A Forecast object

**Value**

Logical TRUE/FALSE

---

has\_truth      *Check if Forecast has Truth Values*

---

**Description**

Check if Forecast has Truth Values

**Usage**

has\_truth(forecast)

**Arguments**

forecast      A Forecast object

**Value**

Logical TRUE/FALSE

IDSMoDel

*IDS Model*

---

**Description**

Creates an Increase-Decrease-Stable model for trend detection.

**Usage**

```
IDSMoDel(threshold = 0, window_size = 3L)
```

**Arguments**

threshold	Threshold for trend detection (default: 0.0)
window_size	Window size for trend calculation (default: 3)

**Value**

An IDSMoDel object

**Examples**

```
## Not run:  
model <- IDSMoDel()  
model <- IDSMoDel(threshold = 0.1, window_size = 5)  
  
## End(Not run)
```

---

INARCHMoDel*INARCH Model*

---

**Description**

Creates an Integer-valued ARCH model for count time series.

**Usage**

```
INARCHMoDel(p = 1L)
```

**Arguments**

p	Order of the INARCH model
---	---------------------------

**Value**

An INARCHMoDel object

**Examples**

```
## Not run:  
model <- INARCHModel(p = 1)  
  
## End(Not run)
```

---

interval\_forecast      *Generate Interval Forecasts*

---

**Description**

Generates prediction intervals from a fitted model.

**Usage**

```
interval_forecast(fitted, method, horizon = 1L, levels = 0.95)
```

**Arguments**

fitted	A fitted model object from fit_baseline()
method	Interval method object
horizon	Integer or vector of integers specifying forecast horizons
levels	Numeric vector of confidence levels

**Value**

List containing point forecasts, median, intervals, and trajectories

**Examples**

```
## Not run:  
intervals <- interval_forecast(fitted,  
  method = EmpiricalInterval(),  
  horizon = 1:12,  
  levels = c(0.80, 0.95)  
)  
  
## End(Not run)
```

---

`inverse_transform_data`*Apply Inverse Transformation*

---

**Description**

Applies the inverse of a transformation to data (e.g., exp for log).

**Usage**

```
inverse_transform_data(y, transformation)
```

**Arguments**

`y` Numeric vector of transformed data  
`transformation` A transformation object

**Value**

Original-scale numeric vector

**Examples**

```
## Not run:  
transformed <- c(0, 0.693, 1.099, 1.386, 1.609)  
trans <- LogTransform()  
original <- inverse_transform_data(transformed, trans)  
  
## End(Not run)
```

---

`is_setup`*Check if Julia and ForecastBaselines.jl are set up*

---

**Description**

Tests whether Julia is configured and ForecastBaselines.jl is accessible.

**Usage**

```
is_setup()
```

**Value**

TRUE if setup is complete, FALSE otherwise

**Examples**

```
## Not run:
if (is_setup()) {
  # Use forecasting functions
} else {
  setup_ForecastBaselines()
}

## End(Not run)
```

---

KDEModel

*KDE Model*

---

**Description**

Creates a kernel density estimation model for non-parametric forecasting.

**Usage**

```
KDEModel(bandwidth = NULL, kernel = "gaussian")
```

**Arguments**

bandwidth	Bandwidth for KDE (default: NULL for automatic selection)
kernel	Kernel function to use (default: "gaussian")

**Value**

A KDEModel object

**Examples**

```
## Not run:
model <- KDEModel()
model <- KDEModel(bandwidth = 0.5)

## End(Not run)
```

LogPlusOneTransform     *Log Plus One Transformation*

---

**Description**

Creates a  $\log(x + c)$  transformation. Useful for data with zeros.

**Usage**

```
LogPlusOneTransform(c = 1)
```

**Arguments**

c                      Constant to add before taking log (default: 1)

**Value**

A LogPlusOneTransform object

**Examples**

```
## Not run:  
# Standard log(x + 1)  
trans <- LogPlusOneTransform()  
  
# Custom constant  
trans <- LogPlusOneTransform(c = 0.5)  
  
## End(Not run)
```

---

LogTransform             *Log Transformation*

---

**Description**

Creates a natural logarithm transformation. Data must be positive.

**Usage**

```
LogTransform()
```

**Value**

A LogTransform object

**Examples**

```
## Not run:  
trans <- LogTransform()  
  
## End(Not run)
```

---

**LSDModel***Last Similar Dates (LSD) Model*

---

**Description**

Creates a seasonal forecasting model based on similar historical dates.

**Usage**

```
LSDModel(s, window_width = 1L, trend_correction = FALSE)
```

**Arguments**

**s** Seasonal period (e.g., 7 for weekly, 12 for monthly)  
**window\_width** Width of the window for averaging similar dates (default: 1)  
**trend\_correction** Whether to apply trend correction (default: FALSE)

**Value**

An LSDModel object

**Examples**

```
## Not run:  
# Weekly seasonality  
model <- LSDModel(s = 7)  
  
# Monthly seasonality with window  
model <- LSDModel(s = 12, window_width = 2)  
  
## End(Not run)
```

---

MarginalModel	<i>Marginal Model</i>
---------------	-----------------------

---

**Description**

Creates a forecast based on the empirical marginal distribution using the mean of the p most recent observations.

**Usage**

```
MarginalModel(p = NULL)
```

**Arguments**

p                      Number of most recent observations to use (default: all observations)

**Value**

A MarginalModel object

**Examples**

```
## Not run:  
model <- MarginalModel(p = 10)  
  
## End(Not run)
```

---

ModelTrajectoryInterval	<i>Model Trajectory Interval Method</i>
-------------------------	---

---

**Description**

Creates prediction intervals by simulating trajectories from the fitted model. This method uses the model's own simulation mechanism.

**Usage**

```
ModelTrajectoryInterval(  
  n_trajectories = 1000L,  
  seed = NULL,  
  positivity_correction = "none",  
  return_trajectories = FALSE  
)
```

**Arguments**

`n_trajectories` Number of trajectories to simulate (default: 1000)  
`seed` Random seed for reproducibility (default: NULL)  
`positivity_correction` Method to ensure positive forecasts: "none", "post\_clip", "truncate", or "zero\_floor" (default: "none")  
`return_trajectories` Whether to return forecast trajectories (default: FALSE)

**Value**

A ModelTrajectoryInterval object

**Examples**

```
## Not run:  
# Basic model-based intervals  
method <- ModelTrajectoryInterval()  
  
# With more trajectories  
method <- ModelTrajectoryInterval(n_trajectories = 2000, seed = 456)  
  
# Return trajectories for analysis  
method <- ModelTrajectoryInterval(  
  n_trajectories = 1000,  
  return_trajectories = TRUE  
)  
  
## End(Not run)
```

---

NoInterval

*No Interval Method*

---

**Description**

Creates an interval method that produces only point forecasts without prediction intervals.

**Usage**

```
NoInterval()
```

**Value**

A NoInterval object

**Examples**

```
## Not run:
method <- NoInterval()
fc <- forecast(fitted, interval_method = method, horizon = 1:12)

## End(Not run)
```

---

NoTransform	<i>No Transformation</i>
-------------	--------------------------

---

**Description**

Creates a transformation that applies no changes to the data.

**Usage**

```
NoTransform()
```

**Value**

A NoTransform object

**Examples**

```
## Not run:
trans <- NoTransform()

## End(Not run)
```

---

OLSModel	<i>OLS Model</i>
----------	------------------

---

**Description**

Creates an ordinary least squares model with polynomial trend.

**Usage**

```
OLSModel(degree = 1L, differencing = 0L)
```

**Arguments**

degree	Polynomial degree (default: 1 for linear trend)
s	Seasonal period (default: NULL for no seasonality)

**Value**

An OLSModel object

**Examples**

```
## Not run:  
# Linear trend  
model <- OLSModel(degree = 1)  
  
# Quadratic trend with seasonality  
model <- OLSModel(degree = 2, s = 12)  
  
## End(Not run)
```

---

ParametricInterval      *Parametric Interval Method*

---

**Description**

Creates prediction intervals using parametric assumptions based on the model's distribution (e.g., assuming normality for ARMA models).

**Usage**

```
ParametricInterval(positivity_correction = "none")
```

**Arguments**

```
positivity_correction  
                          Method to ensure positive forecasts: "none" or "post_clip" (default: "none")
```

**Value**

A ParametricInterval object

**Examples**

```
## Not run:  
# Standard parametric intervals  
method <- ParametricInterval()  
  
# With positivity correction  
method <- ParametricInterval(positivity_correction = "post_clip")  
  
## End(Not run)
```

point\_forecast      *Generate Point Forecasts*

---

**Description**

Generates point forecasts from a fitted model.

**Usage**

```
point_forecast(fitted, horizon = 1L)
```

**Arguments**

fitted              A fitted model object from fit\_baseline()  
horizon             Integer or vector of integers specifying forecast horizons

**Value**

Numeric vector of point forecasts

**Examples**

```
## Not run:  
forecasts <- point_forecast(fitted, horizon = 1:12)  
  
## End(Not run)
```

---

PowerPlusOneTransform      *Power Plus One Transformation*

---

**Description**

Creates a power transformation with a constant:  $(x + c)^\lambda$ . Useful for Box-Cox transformations with zeros.

**Usage**

```
PowerPlusOneTransform(lambda, constant = 1)
```

**Arguments**

lambda              Power parameter  
constant             Constant to add before transformation (default: 1.0)

**Value**

A PowerPlusOneTransform object

**Examples**

```
## Not run:  
# Box-Cox transformation  
trans <- PowerPlusOneTransform(lambda = 0.3)  
  
# Custom constant  
trans <- PowerPlusOneTransform(lambda = 0.5, constant = 0.5)  
  
## End(Not run)
```

---

PowerTransform	<i>Power Transformation</i>
----------------	-----------------------------

---

**Description**

Creates a power transformation:  $x^\lambda$  (Box-Cox family).

**Usage**

```
PowerTransform(lambda)
```

**Arguments**

lambda            Power parameter (lambda = 0 is log, lambda = 0.5 is sqrt)

**Value**

A PowerTransform object

**Examples**

```
## Not run:  
# Square root (equivalent to SquareRootTransform)  
trans <- PowerTransform(lambda = 0.5)  
  
# Cube root  
trans <- PowerTransform(lambda = 1 / 3)  
  
## End(Not run)
```

---

```
print.ForecastBaselines_Forecast
    Print method for Forecast objects
```

---

**Description**

Print method for Forecast objects

**Usage**

```
## S3 method for class 'ForecastBaselines_Forecast'
print(x, ...)
```

**Arguments**

x	A Forecast object
...	Additional arguments (ignored)

---

```
setup_ForecastBaselines
    Setup Julia and load ForecastBaselines.jl
```

---

**Description**

This function initializes Julia, installs ForecastBaselines.jl if needed, and loads the package. Must be called before using any forecasting functions.

**Usage**

```
setup_ForecastBaselines(
    JULIA_HOME = NULL,
    install_package = TRUE,
    rebuild = FALSE,
    verbose = TRUE
)
```

**Arguments**

JULIA_HOME	Path to Julia installation (optional, will auto-detect if not provided)
install_package	Whether to install ForecastBaselines.jl if not already installed
rebuild	Whether to rebuild the Julia system image
verbose	Whether to print verbose output during setup

**Value**

Invisibly returns TRUE if setup was successful

**Examples**

```
## Not run:  
# Basic setup (auto-detect Julia)  
setup_ForecastBaselines()  
  
# Specify Julia location  
setup_ForecastBaselines(JULIA_HOME = "/usr/local/julia/bin")  
  
## End(Not run)
```

---

SquareRootTransform	<i>Square Root Transformation</i>
---------------------	-----------------------------------

---

**Description**

Creates a square root transformation. Useful for count data and variance stabilization.

**Usage**

```
SquareRootTransform()
```

**Value**

A SquareRootTransform object

**Examples**

```
## Not run:  
trans <- SquareRootTransform()  
  
## End(Not run)
```

---

STLModel	<i>STL Model</i>
----------	------------------

---

**Description**

Creates a Seasonal-Trend decomposition using Loess model.

**Usage**

```
STLModel(s, trend = TRUE, robust = FALSE)
```

**Arguments**

s	Seasonal period
trend	Whether to include trend component (default: TRUE)
robust	Whether to use robust fitting (default: FALSE)

**Value**

An STLModel object

**Examples**

```
## Not run:  
# Monthly seasonality  
model <- STLModel(s = 12)  
  
# Robust STL  
model <- STLModel(s = 12, robust = TRUE)  
  
## End(Not run)
```

---

TemporalInfo

*Create Temporal Information Object*

---

**Description**

Creates a TemporalInfo object to track dates and time resolution.

**Usage**

```
TemporalInfo(start = 1, resolution = 1)
```

**Arguments**

start	Start date (Date, POSIXct, or integer)
resolution	Time resolution (integer for generic, or period object)

**Value**

A TemporalInfo object

**Examples**

```
## Not run:
# Simple integer indexing
temp_info <- TemporalInfo(start = 1, resolution = 1)

# Date-based
temp_info <- TemporalInfo(start = as.Date("2024-01-01"), resolution = 1)

## End(Not run)
```

---

transform_data	<i>Apply Data Transformation</i>
----------------	----------------------------------

---

**Description**

Applies a transformation to data.

**Usage**

```
transform_data(x, transformation)
```

**Arguments**

x                    Numeric vector of data  
transformation    A transformation object

**Details**

**\*\*Recommended:\*\*** Use R's built-in transformation functions instead for better reliability and flexibility. This function has limitations due to bugs in ForecastBaselines.jl (e.g., SquareRootTransform fails).

See 'vignette("transformations")' for the recommended R approach.

**Value**

Transformed numeric vector

**Examples**

```
## Not run:
# Julia approach (limited):
data <- c(1, 2, 3, 4, 5)
trans <- LogTransform()
transformed <- transform_data(data, trans)

# Recommended R approach:
transformed <- log(data)

## End(Not run)
```

---

transform_model	<i>Apply Transformation to Model</i>
-----------------	--------------------------------------

---

### Description

Wraps a model with a data transformation.

### Usage

```
transform_model(model, transformation)
```

### Arguments

model            A model object  
transformation   A transformation object

### Details

**\*\*Not Implemented:\*\*** This function does not work because ForecastBaselines.jl does not implement ‘transform()’ for model types.

**\*\*Recommended approach:\*\*** Transform your data manually in R before fitting:

```
“r # Instead of transform_model(): log_data <- log(data) fitted <- fit_baseline(log_data, model) fc  
<- forecast(fitted, ...) fc$mean <- exp(fc$mean) # Back-transform “
```

See ‘vignette("transformations")’ for complete examples.

### Value

A transformed model object

### Examples

```
## Not run:  
# This will fail - not implemented in Julia package  
model <- ARMAModel(p = 1, q = 1)  
trans <- LogTransform()  
transformed_model <- transform_model(model, trans) # Error!  
  
# Use manual transformation instead:  
log_data <- log(data)  
fitted <- fit_baseline(log_data, model)  
fc <- forecast(fitted, interval_method = NoInterval(), horizon = 1:5)  
fc$mean <- exp(fc$mean)  
  
## End(Not run)
```

---

truncate\_horizon      *Truncate Forecast Horizon*

---

**Description**

Truncate Forecast Horizon

**Usage**

```
truncate_horizon(forecast, max_h)
```

**Arguments**

forecast	A Forecast object
max_h	Maximum horizon to keep

**Value**

Truncated Forecast object

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