

# Package ‘BayesianFitForecast’

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**Type** Package

**Title** Bayesian Parameter Estimation and Forecasting for  
Epidemiological Models

**Version** 1.1.0

**Description** Methods for Bayesian parameter estimation and forecasting in epidemiological models.  
Functions enable model fitting using Bayesian methods and generate forecasts with uncertainty quantification.  
Implements approaches described in [doi:10.48550/arXiv.2411.05371](https://doi.org/10.48550/arXiv.2411.05371) and [doi:10.1002/sim.9164](https://doi.org/10.1002/sim.9164).

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**Encoding** UTF-8

**Imports** bayesplot, readxl, xlsx, loo, openxlsx, rstan, ggplot2,  
stringr, gridExtra, dplyr

**Depends** R (>= 3.5.0)

**URL** <https://github.com/gchowell/BayesianFitForecast>

**BugReports** <https://github.com/gchowell/BayesianFitForecast/issues>

**RoxygenNote** 7.3.2

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

**VignetteBuilder** knitr

**Config/testthat/edition** 3

**NeedsCompilation** no

**Author** Hamed Karami [aut],  
Amanda Bleichrodt [aut],  
Ruiyan Luo [aut],  
Gerardo Chowell [aut, cre]

**Maintainer** Gerardo Chowell <[gchowell@gsu.edu](mailto:gchowell@gsu.edu)>

**Repository** CRAN

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```
excel_file <- system.file("extdata", "SanFrancisco.xlsx",
                          package = "BayesianFitForecast")
# Run the analysis

Run_analyzeResults(
  data_file = data_file,
  option_file = option_file,
  excel_file = excel_file,
  output_path = NULL)

# Results are saved in the specified directory or temporary directory if none is provided.
```

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Run\_MCMC

*Run MCMC Analysis with Specified Option File*

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## Description

This function runs an MCMC analysis based on the specified option file, sourcing auxiliary scripts, and executing the analysis.

## Usage

```
Run_MCMC(option_file, excel_file = NULL, output_path = NULL)
```

## Arguments

option_file	The name of the option file (e.g., "option1.R") located in the current working directory.
excel_file	The path to the Excel file containing the data.
output_path	Directory where the output will be saved. If 'NULL', uses a temporary directory.

## Value

None. The function executes and saves results directly.

## Examples

```
# Get path to the example option file included with package
option_file <- system.file("extdata", "option.R",
                          package = "BayesianFitForecast")

# Specify the path to the Excel file you want to analyze
excel_file <- system.file("extdata", "SanFrancisco.xlsx",
                          package = "BayesianFitForecast") # Modify this path accordingly

# Run the MCMC analysis

Run_MCMC(option_file = option_file, excel_file = excel_file, output_path = NULL)
```

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