

# SOFTWARE INSTALLATION

Please use the instructions below to install and check your installation.

Since 29 April 2025, the latest INLA package is built for R 4.5, so if you're able to upgrade your R installation, please do so to avoid unnecessary issues. The package will in many cases also work with older R versions, but compatibility is sometimes difficult.

## 0 Installing INLA and inlabru

Due to the work involved in building the binaries for the INLA package C software for different architectures, the INLA package is not on CRAN, but it can be installed from its own distribution repository.

1. Check your R version.
2. Install R-INLA, instructions can be found [here](#)
3. Install inlabru (available from CRAN)

```
# Enable universe(s) by inlabru-org
options(repos = c(
  inlabruorg = "https://inlabru-org.r-universe.dev",
  INLA = "https://inla.r-inla-download.org/R/testing",
  CRAN = "https://cloud.r-project.org"
))

# Install some packages
install.packages("inlabru")
```

3. Make sure you have the latest R-INLA, inlabru and R versions installed.
4. Install the following libraries:

```
install.packages(c(
  "CARBayesdata",
  "dplyr",
  "fmesher",
  "ggplot2",
  "lubridate",
  "mapview",
  "patchwork",
  "scico",
  "sdmTMB",
  "sf",
  "spatstat",
  "spdep",
  "terra",
  "tidyr",
  "tidyterra",
  "viridis"
))
```

## 0 Installation check

Please check your installation using the basic model runs below.

If you run into issues, you can post a question with information about what you tried and what didn't work, on the [course github discussion page](#).

You can check that INLA is correctly installed by running

```
df <- data.frame(y = rnorm(100) + 10)
fit <- INLA::inla(
  y ~ 1,
  data = df
)
summary(fit)
```

Time used:

Pre = 0.426, Running = 0.233, Post = 0.0557, Total = 0.714

Fixed effects:

	mean	sd	0.025quant	0.5quant	0.975quant	mode	kld
(Intercept)	9.902	0.098	9.709	9.902	10.094	9.902	0

Model hyperparameters:

	mean	sd	0.025quant	0.5quant
Precision for the Gaussian observations	1.06	0.149	0.785	1.05
			0.975quant	mode
Precision for the Gaussian observations		1.37	1.03	

Marginal log-Likelihood: -151.97

is computed

Posterior summaries for the linear predictor and the fitted values are computed

(Posterior marginals needs also 'control.compute=list(return.marginals.predictor=TRUE)')

If the simple `inla()` call fails with a crash, you may need to install different `inla` binaries for your hardware/software combination, with `INLA::inla.binary.install()`.

When `inla()` works, you can check that `inlabru` is installed correctly by running the same model in `inlabru`:

```
fit <- inlabru::bru(
  y ~ Intercept(1, prec.linear = exp(-7)),
  data = df
)
summary(fit)
```

inlabru version: 2.13.0.9016

INLA version: 25.08.21-1

Components:

Latent components:

Intercept: main = linear(1)

Observation models:

Family: 'gaussian'

Tag: <No tag>

```

Data class: 'data.frame'
Response class: 'numeric'
Predictor: y ~ .
Additive/Linear: TRUE/TRUE
Used components: effects[Intercept], latent[]
Time used:
  Pre = 0.276, Running = 0.24, Post = 0.062, Total = 0.579
Fixed effects:
      mean      sd 0.025quant 0.5quant 0.975quant  mode kld
Intercept 9.901 0.098      9.709   9.901      10.094 9.901   0

Model hyperparameters:
                        mean      sd 0.025quant 0.5quant
Precision for the Gaussian observations 1.06 0.149      0.785      1.05
                        0.975quant mode
Precision for the Gaussian observations      1.37 1.03

Marginal log-Likelihood: -156.43
is computed
Posterior summaries for the linear predictor and the fitted values are computed
(Posterior marginals needs also 'control.compute=list(return.marginals.predictor=TRUE)')

```