BES WORKSHOP

British Ecological Society Meeting 2025, Edinburgh

Jafet Belmont, Sara Martino and Janine Illian

1 Welcome to the course!

- Welcome to the `inlabru` workshop!
- The goal of this workshop is to introduce new users to the `inlabru` software for Bayesian spatial modelling using the integrated nested Laplace approximation (INLA).

2 Learning Objectives for the workshop

At the end of the workshop, participants will have an understanding of:

- The `inlabru` workflow and software principles.
- The motivation for and the challenges of analysing and modelling spatial data.
- Statistical models used to analyse spatial data.
- The implementation of these models in the `inlabru` package

3 Intended audience

The workshop aims to cater for participants with a range of different backgrounds, who is interested in analysing data with modern spatial statistical modelling approaches.

4 Prerequisites

Participants should be familiar with the R environment, and general statistical approaches for modelling such as regression, analysis of (co)variance, and generalized linear models.

No knowledge of `R-INLA` or `inlabru` is required.

5 Schedule Program

Time	Topic
13:00 - 14:00	Workshop registration
14:00 - 14:45	**Session 1**: Introduction to `inlabru`
14:45 - 15:30	Practical Session 1
15:30 - 16:00	Refreshment break
16:00 - 16:45	**Session 2**: Spatial Modelling with `inlabru`
16:45 - 17:45	Practical Session 2
17:45 - 18:00	Wrap-up and outlook

6 In preparation for the workshop

Participants are required to follow the next steps before the day of the workshop:

1. Install R-INLA
2. 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",
  "gt",
  "lubridate",
  "mapview",
  "patchwork",
  "scico",
  "sdmTMB",
  "sf",
  "spatstat",
  "spdep",
  "terra",
  "tidyr",
  "tidyterra",
  "viridis"
))
```