

INLABRU WORKSHOP



ICES 2025, Copenhagen

Jafet Belmont, Sara Martino and Janine Illian

1 Welcome to the course!

- Welcome to the `inlabru` workshop!
- The goal for the workshop is to introduce Bayesian statistics implemented using the `inlabru` package.
- The workshop is intended for ... No knowledge of R-INLA is required.
- Workshop materials in the github repository [inlabru-workshop](#)

2 Learning Objectives for the workshop

At the end of the workshop, participants will be able to:

- TEST
- ILO2
- ILO3

Intended audience and level: The tutorial is intended for ... No knowledge of R-INLA is required.

3 Schedule Program

3.0.1 Day 1

Time	Topic
10:00 - 10:30	ICES informative session
10:30 - 11:30	Session 1: Introduction to <code>inlabru</code>
11:30 - 13:00	Practical Session 1
13:00 - 14:30	Lunch break ☕
14:30 - 15:30	Session 2: Latent Gaussian Models and INLA
15:30 - 15:45	Coffee Break ☕
15:45 - 16:45	Practical Session 2
16:45 - 17:00	wrap-up and outlook

3.0.2 Day 2

Time	Topic
9:00 - 10:00	Session 3: Temporal modelling and smoothing part 1
10:00 - 10:30	Snack ☕
10:30 - 11:30	Session 4: Temporal modelling and smoothing part 2
11:30 - 13:00	Practical Session 3
13:00 - 14:30	Lunch break ☕

Time	Topic
14:30 - 15:30	Session 5: Introduction to Spatial Statistics
15:35 - 15:45	Coffee Break ☕
15:45 - 16:45	Practical Session 4
16:45 - 17:00	wrap-up and outlook

3.0.3 Day 3

Time	Topic
9:00 - 10:00	Session 6: Areal Processes
10:00 - 10:30	Snack ☕
10:30 - 11:30	Session 7: Geostatistics
11:30 - 13:00	Practical Session 5
13:00 - 14:30	Lunch break ☕
14:30 - 15:30	Session 8: Spatial Point processes
15:35 - 15:45	Coffee Break ☕
15:45 - 16:45	Practical Session 5 continued
16:45 - 17:00	wrap-up and outlook

3.0.4 Day 4

Time	Topic
9:00 - 10:00	Session 9: Spatiotemporal models
10:00 - 10:30	Snack ☕
10:30 - 11:30	Session 10: Model comparison and evaluation
11:30 - 13:00	Practical Session 6
13:00 - 14:30	Lunch break ☕
14:30 - 15:30	Session 11: Multilikelihoods/joint likelihood
15:35 - 15:45	Coffee Break ☕
15:45 - 16:45	Practical Session 7
16:45 - 17:00	wrap-up and outlook

3.0.5 Day 5

Time	Topic
9:00 - 10:00	Session 12: Zero inflated models
10:00 - 10:30	Snack ☕
10:30 - 11:30	Session 13: Complex observational processes: Distance Sampling
11:30 - 13:00	Practical Session 8: Zero Inflated models - Distance sampling
13:00 - 13:15	Coffee Break ☕
13:15 - 14:00	Closing session

4 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",
  "DAAG",
  "dplyr",
  "FSAdata",
  "ggplot2",
  "gt",
  "lubridate",
  "magrittr",
  "mapview",
  "patchwork",
  "scico",
  "sdmTMB",
  "sf",
  "spatstat",
  "spdep",
  "terra",
  "tidyrr",
  "tidyterra",
  "tidyverse"
))
```