

# INLABRU WORKSHOP



ICES 2025, Copenhagen

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## 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	<b>Session 1: Introduction to <code>inlabru</code></b>
11:30 - 13:00	Practical Session 1
13:00 - 14:30	Lunch break ☕
14:30 - 15:30	<b>Session 2: Latent Gaussian Models and INLA</b>
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 -	<b>Session 3: Temporal modelling and smoothing part 1</b>
10:00	
10:00 -	Snack ☕
10:30	
10:30 -	<b>Session 4: Temporal modelling and smoothing part 2</b>
11:30	

Time	Topic
11:30 -	Practical Session 3
13:00	
13:00 -	Lunch break ☕
14:30	
14:30 -	<b>Session 5:</b> Introduction to Spatial Statistics
15:30	
15:35 -	Coffee Break ☕
15:45	
15:45 -	Practical Session 4
16:45	
16:45 -	wrap-up and outlook
17:00	

### 3.0.3 Day 3

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

### 3.0.4 Day 4

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

### 3.0.5 Day 5

Time	Topic
9:00 - 10:00	<b>Session 12:</b> Zero inflated models
10:00 - 10:30	Snack ☕
10:30 - 11:30	<b>Session 13:</b> Complex observational processes: Distance Sampling

Time	Topic
11:30 - 13:00	Practical Session 8: Zero Inflation Practical Session 8: 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"
))
```