

## GENERALIZED ADDITIVE MODELS

### COURSE CONTENT

Course participants will be able to:

- Understand the basic ideas behind generalized additive models and related approaches
- Perform their own analyses using the statistical language R
- Visualize and interpret the results

The course discusses modelling approaches that go beyond the well-known (generalized) linear model, e.g., because crucial assumptions such as linearity in the covariates are violated. In particular, the following topics will be covered:

- Polynomial functions of covariates
- Modeling using splines
- Smoothing and penalties
- Semi- and non-parametric modeling of covariates
- Statistical inference
- Implementation in R
- Generalized additive models in practice

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### SCHEDULE\*

- Thursday 09:00 - 17:00, Friday 09:00 - 17:00, Saturday 09:00 - 12:30

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### PRE-REQUISITE

The participants must have basis knowledge in:

- mathematical principles
- statistics and probability theory, including the classical linear model
- statistical programming software R

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### REGISTRATION

- Deadline for registration is 3 weeks before.
- The fee for the course is € 645; discounted rate for affiliated with a university € 600.
- The courses may take place in parts or as a whole online (virtual conferences) if in-classroom teaching is not possible.

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\*subject to change