Modelling Palaeoenvironmental Time Series Using Generalized Additive Models

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To address the increase in both quantity and complexity of available data, (palaeo)ecologists require flexible, robust statistical models, as well as software to perform such analyses. This workshop will focus on how a single tool, the **mgcv** package for the R language, can be used to fit models to data from a wide range of sources.

mgcv is one of the most popular packages for modelling non-linear relationships. However, many users do not know how versatile and powerful a tool it can be. This workshop will focus on teaching participants how to use **mgcv** for temporal and spatio-temporal data and advanced use of **mgcv**. The workshop will give participants an understanding of:

- practical elements of smoothing theory, with a focus on what smoothers are and why they would choose among the different types of smoother,
- model fitting, checking and selection,
- the range of modelling possibilities using **mgcv**.

Throughout the focus will be on using and applying GAMs with real data.

Participants will be assumed to be familiar with the basics of R (loading/manipulating data, functions, and plotting) and regression in R (`lm()` and `glm()`). The organizer has extensive practical experience with (palaoe)ecological statistics and modelling using **mgcv**.