

# Reconstructing past environments using compositional fossil data - CoDaWork 2017

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## Abstract

Current and future climate change can be put into a longer time-frame using natural data recorded within oceans, lakes, bogs and other deposits. Biological and chemical components within the deposits can be counted over a range of depth intervals and provide us with time series of environmental dynamics. Much of this information consists of compositional data (e.g., Guerreiro et al. 2015), such as pollen which derives from both the local and wider environment and is often counted as percentages. Here we will review how the compositional nature of these data could affect the palaeoenvironmental interpretations. A comparative review of different statistical approaches will be provided using both synthetic and real data, derived from peat bog cores within Northern Europe.

## References

Guerreiro, C. et al. (2015). Compositional Data Analysis (CoDA) as a tool to study the (paleo)ecology of coccolithophores from coastal-neritic settings off central Portugal. *Sedimentary Geology* 319, pp. 134–146