Book of Abstracts

The 10TH International Workshop
on
Compositional Data Analysis

3-7 June 2024, Girona, Spain

The 10th International Workshop on Compositional Data Analysis

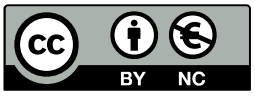
3-7 June 2024, Girona, Spain

https://compositionaldata.com/codawork2024/

Organised by

Statistics and Compositional Data Analysis Research Group
Department of Computer Sciences, Applied Mathematics and Statistics
University of Girona

ISBN: 978-84-947240-5-3



Sponsored by

Supported by

Those interested in CoDA can find a meeting point with news, events, references, materials and information about software packages at the CoDA website (`https://compositionaldata.com`) maintained by the Statistics and Compositional Data Analysis Research Group.

This publication is hosted at the University of Girona's institutional repository at `http://hdl.handle.net/10256/24828`.

How to cite this document according to the citation style ISO 690:1987 (UNE 50-104- 94):

Book of Abstract of the 10th International Workshop on Compositional Data Analysis (CoDaWork2024): Girona, 3-7 June 2024. M. Comas-Cufí and J. Palarea-Albaladejo Girona (eds.). CoDa Association – Association for Compositional Data. 79p. ISBN 978-84-947240-5-3.

To cite a specific abstract following the same style, use for example:

[List of Authors]. [Title]. In Book of Abstract of the 10th International Workshop on Compositional Data Analysis (CoDaWork2024): Girona, 3-7 June 2024. CoDa Association – Association for Compositional Data. [page]. ISBN 978-84-947240-5-3.

ISBN: 978-84-947240-5-3.
Editorial: CoDa Association – Association for Compositional Data.
Title: Book of Abstract of the 10th International Workshop on Compositional Data Analysis (CoDaWork2024).
Subtitle: 3-7 June 2024, Girona, Spain.
Editors: M. Comas-Cufí, J. Palarea-Albaladejo.
Format: electronic download and online.
Format detail: pdf; possibility of reading without online connection.
Language of publication: English.
Edition: first.
Date of edition: 3rd June 2024.
Country of edition: Spain.
Topic: probability and statistics.
Price: free.

A Compositional Approach to Micropalaeontological Ecozonation using Divisive Hierarchical Clustering

Authors: Valentino di Donato[1] and Josep Antoni Martín-Fernández[2]

[1]Università degli Studi di Napoli Federico II, Italy
[2]University of Girona, Spain

Ecozonation methodologies are widely adopted, in both continental and marine successions, to define high-resolution bio- and- chronostratigraphic schemes. The concept behind this approach is that changes in the composition of fossil assemblages are proxies of palaeoenvironmental or palaeoclimatic changes. Thus, the definition of ecozones make possible the identification of intervals characterised by relative stability or, by converse, stratigraphical levels which marks environmental changes. The definition of ecozones may be strengthened by adopting stratigraphically constrained cluster algorithms (i.e. samples can only be grouped with samples or clusters immediately preceding or following them), which allow ecozones boundaries to be objectively defined. Among them, the stratigraphically constrained method CONISS has been widely adopted in micropalaeontological studies. The application of CONISS to micropalaeontological data expressed in terms of percentages requires an approach conform to the nature of the Compositional Data (CoDa). On these bases, Di Donato et al., (2008) defined compositional intervals based on the CONISS method applied to logratio coordinates. The CONISS method is an aggregative hierarchical clustering algorithm. Here, we explore a divisive constrained approach to ecozonation developed in a field, that of micropalaeontological associations, that is well suited to a CoDa approach.

Aitchison, J. (1986). The Statistical Analysis of Compositional Data. Monographs on Statistics and Applied Probability. Chapman & Hall Ltd., London (UK). (Reprinted in 2003 with additional material by The Blackburn Press). 416 pp. Di Donato, V., Esposito, P., Russo-Ermolli, E., Scarano, A., Cheddadi, R., 2008. Coupled atmospheric and marine palaeoclimatic reconstruction for the last 35 kyr in the Sele Plain-Gulf of Salerno area (southern Italy). Quaternary International 190, 146–157. Grimm, E., 1987. CONISS: A Fortran 77 Program for Stratigraphically Constrained Cluster Analysis by the Method of Incremental Sum of Squares. Computer and Geosciences 13, 13-35.