

11TH FEBRUARY | 2.30PM (GMT) | JOIN US [HERE](#)

DENSITY DATA ANALYSIS: ANALYZING SAMPLES OF PROBABILITY DISTRIBUTIONS USING BAYES SPACES

The analysis of distributional data (probability density functions or histogram data) has recently gained increasing attention in applications. Distributional data are often observed by themselves or as a result of aggregation of large data streams. This talk will provide an introduction to the analysis of such data using a Functional Data Analysis (FDA) approach grounded in the perspective of Bayes spaces. These spaces are mathematical spaces whose points are densities (or, more generally, measures) that generalise to the FDA setting the Aitchison simplex for multivariate compositional data. The talk will give a brief overview of the concise theory of Bayes spaces and the exploratory data analysis developed in this setting. Theoretical considerations will be illustrated with examples from real case studies.

SPEAKER

**KAREL HRON | DEP. MATHEMATICAL ANALYSIS AND APPLICATIONS
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Karel Hron is a professor at Palacký University Olomouc, Czech Republic, where he is currently also the head of the Department of Mathematical Analysis and Applications of Mathematics. His entire professional life has been devoted to the statistical analysis of relative (distributional) data, both in their multivariate and functional forms (compositional data and probability density functions). He is passionate about both methodological developments and their applications in geochemistry, chemometrics, health sciences and beyond. He has published about 140 peer-reviewed papers, 1 book and promoted the discipline in a number of invited talks and seminars. He is an active member of the International Association of Statistical Computing: he served two terms as a member of the Board of Directors of the European Regional Section (2012-2016, 2020-2024) and member of the Executive Committee (Publication Officer; 2021-2023, 2023-2025). In 2024, he was awarded Elected Member of the International Statistical Institute.