

Geometric Data Analysis

Brigitte Le Roux and Philippe Bonnet (Université Paris Descartes)

The objective of this tutorial is to introduce researchers/scholars to Geometric Data Analysis (GDA). In this approach of Multivariate Statistics, data sets are represented as clouds of points and the interpretation is based on these clouds.

The tutorial has a double articulation:

GDA methods will be reviewed with a short historical overview and its uses in social sciences. We will introduce MCA as one of the three main GDA paradigms. Then we will present our leading example and review some methodological issues.

Multiple Correspondence Analysis (MCA) will be applied to the leading example using SPAD software. First, MCA principles will be presented, starting with the distance between individuals followed by a discussion of the properties of the clouds of individuals and categories. Then principal axes, contributions, and the different steps in the analysis of a data set, will be reviewed, followed by the extensive analysis of the leading example.

References

- 1) B. Le Roux & H. Rouanet, Geometric Data Analysis: from Correspondence Analysis to Structured Data Analysis. Kluwer, Dordrecht, 2004. ISBN 1-4020-2235-2.
<http://www.springeronline.com/sgw/cda/frontpage/0,11855,5-40109-22-33640576-0,00.html>
- 2) Hjellbrekke Josh, Le Roux Brigitte, Korsnes Olav, Lebaron Frédéric, Rosenlund Lennart and Rouanet Henry: The Norwegian Fields Of Power Anno 2000, *European Societies* , 9(2), p.245-273.
http://www.math-info.univ-paris5.fr/~lerb/publications/Textes/776186142_content.pdf
- 3) Brigitte Le Roux, Henry Rouanet, Mike Savage and Alan Warde, Class and Cultural Division in the UK , to appear in *Sociology*.
<http://www.cresc.ac.uk/publications/documents/wp40.pdf>

Contacts:

brigitte.leroux@math-info.univ-paris5.fr

philippe.bonnet@univ-paris5.fr