

Title: Mapping atmospheric pollutants emissions in European countries

Author(s): Martins, Ana Alexandra A. F.¹; Cardoso, Margarida G. M. S.²; Pinto, Iola M. S.¹

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Abstract: In this paper we present a methodology which enables the graphical representation, in a bi-dimensional Euclidean space, of atmospheric pollutants emissions in European countries. This approach relies on the use of Multidimensional Unfolding (MDU), an exploratory multivariate data analysis technique. This technique illustrates both the relationships between the emitted gases and the gases and their geographical origins. The main contribution of this work concerns the evaluation of MDU solutions. We use simulated data to define thresholds for the model fitting measures, allowing the MDU output quality evaluation. The quality assessment of the model adjustment is thus carried out as a step before interpretation of the gas types and geographical origins results. The MDU maps analysis generates useful insights, with an immediate substantive result and enables the formulation of hypotheses for further analysis and modeling.

Author Keywords: Multidimensional Scaling; Unfolding; Atmospheric Pollution

KeyWords Plus: Nonmetric Scaling Procedure; Monte-Carlo; Random Rankings; Spatial Covariance; Stress Values; Pollution; Goodness; Fit

Reprint Address: Martins, AAF (reprint author), Inst Super Engn Lisboa, Dept Math, Rua Conselheiro Emídio Navarro 1, P-1959007 Lisbon, Portugal.

Addresses:

1. Inst Super Engn Lisboa, Dept Math, P-1959007 Lisbon, Portugal
2. ISCTE Lisbon Univ Inst, Sch Business, Dept Quantitat Methods, Lisbon, Portugal

E-mail Address: anamartins@deea.isel.pt

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