"Gheorghe Asachi" Technical University of Iasi, Romania

GEOSTATISTICAL ANALYSIS OF THE CAUSES
OF ENVIRONMENTAL NOISE IN SPAIN

María-Dolores Huete-Morales, José-Manuel Quesada-Rubio[*], Esteban Navarrete-Álvarez, María-Jesús Rosales-Moreno, María-José Del-Moral-Ávila

University of Granada, Faculty of Science, Department of Statistics and Operations Research, Avda. Fuentenueva s/n 18071 Granada, Spain

Abstract

The problem of noise levels in the home is of increasing interest for reasons of health and psychological well-being, among others. This study analyses in detail the meta-data compiled in the Spanish Census of Population and Housing, which provided data on a large number of environmental variables, including noise pollution in the home. A geostatistical study is conducted from the data provided by the latter survey, in which spatial autocorrelation is measured by analytical techniques by using R statistical software and the ESRI geographic information system. We study the empirical variogram, analize different theoretical models (gaussian, exponential and spherical) and estimate the parameters from different perspectives: constant or linear trend, weighted least squares, maximum likelihood and restricted maximum likelihood. The noise level is estimated through the kriging interpolation technique, using the different parameters of each model.

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[*] Author to whom all correspondence should be addressed: e-mail: quesada@ugr.es