

Accepted Manuscript

Comparison of statistical methods for testing the hypothesis of constant global mean in spatial statistics

Hong Wang, Eulogio Pardo-Igúzquiza, Peter A. Dowd, Yongguo Yang

PII: S2211-6753(17)30123-9
DOI: <https://doi.org/10.1016/j.spasta.2018.01.001>
Reference: SPASTA 279

To appear in: *Spatial Statistics*

Received date: 11 April 2017
Accepted date: 8 January 2018

Please cite this article as: Wang H., Pardo-Igúzquiza E., Dowd P.A., Yang Y., Comparison of statistical methods for testing the hypothesis of constant global mean in spatial statistics. *Spatial Statistics* (2018), <https://doi.org/10.1016/j.spasta.2018.01.001>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Comparison of statistical methods for testing the hypothesis of constant global mean in spatial statistics

by Hong Wang^{1,2}, Eulogio Pardo-Igúzquiza³, Peter A. Dowd⁴

and Yongguo Yang^{1,2}

¹Key Laboratory of Coalbed Methane Resources & Reservoir Formation on Process, Ministry of Education, China University of Mining and Technology, Xuzhou, 221008, China,
wanghongcumt@hotmail.com; ygyang88@hotmail.com

²School of Resources and Geosciences, China University of Mining and Technology, Xuzhou, Jiangsu Province, 221116, China

³The Geological Survey of Spain, Ríos Rosas 23, 28003, Madrid, Spain, e.pardo@igme.es

⁴Faculty of Engineering, Computer and Mathematical Sciences, University of Adelaide, Adelaide, SA 5000, Australia, peter.dowd@adelaide.edu.au

Abstract

In spatial statistics in general, and in geostatistics in particular, the choice between a spatial model with drift and a model with constant global mean is often critical, especially when only a small number of samples are available. A statistical test provides an objective means of making this choice. Among the many available statistical tests, a variance-ratio test has been widely used for making this choice because of its good statistical properties but, in addition to a semi-variogram model, it also requires an alternative drift model hypothesis. Another test statistic is the global D -statistic, which is a complementary test in the sense that it does not require an alternative hypothesis model. In this paper, we use sparse data from simulated random fields to evaluate and compare the performances of these two methods for testing the hypothesis of constant global mean in spatial statistics. We do so by considering the influence

Download English Version:

<https://daneshyari.com/en/article/7496387>

Download Persian Version:

<https://daneshyari.com/article/7496387>

[Daneshyari.com](https://daneshyari.com)