Review of: "Spatial Analysis of Soil Fertility Using Geostatistical Techniques And Artificial Neural Networks"

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Potential competing interests: No potential competing interests to declare.

Article by Valera and Rodriguez describes application of combined ordinary kriging and fuzzy Kohonen clustering in case of mapping soil fertility. Proposed interpolation techniques enabled to prepare membership-based class maps of soils, as well as to estimate reliability of mapping procedure. The general structure of manuscript is acceptable. Graphics quality and English are also reasonable. Article is nice local example of practical application of geostatistical methods to classify various surface samples (e.g. soils or sediments).

Keywords:

Geoestatistics --- correct the term

Introduction:

(Webster y Oliver, 1990) --- change ‘y’

Soil sampling:

Remove empty spaces before ‘)’.

‘and the relative amounts of sand, silt and clay’ --- and contents of sand, silt and clay

Interpolation of soil properties:

Table 2: ‘C +C01’ --- C0 + C1

These are omnidirectional semivariograms. Did you computed also directional ones? Did you checked directional variability and data trending?

Could you include names of estimated parameters beside variograms (Figure 4)?

Do you think elevated/low C values in some of presented models are appropriate? This was done automatically using ArcGIS software? Elevated nuggets seem to be quite problematic in low distances (e.g. undersampling).

Figure 5: metros --- meters

Assessing the reliability of prediction models:

What variable is *x* in the presented regression equations? It's always the same?

Number of soil fertility classes:

Is there any difference between 5 and 6 classes? FPI in class no. 6 seems to be elevated higher than class no. 5 (at ϕ=1.2).

Figure 6: clases number --- class number

Figure 7: You may condsider this values as 'Probability of class membership' --- check e.g. https://www.sciencedirect.com/science/article/pii/S0098300419300329

Figure 7: metros --- meters