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Aspects regarding the usefulness of geographically weighted regression (gwr) for digital mapping of soil parameters

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An alternative to classical soil mapping, using the limits of the soil spatial units, is the digital mapping, which makes use of statistical methods and GIS-derived spatial layers for a more accurate and continuous display of soil parameters' spatial distribution. Our study attempts to test the usefulness of a relatively new statistical method, namely the Geographically Weighted Regression (GWR). In order to reveal its superiority, the results were compared with those achieved my means of other digital mapping methods (global multiple regression, ordinary kriging, cokriging). The methods were applied in the area of Horoiata Basin (Tutovei Hills) for soil reaction values, using the data from 133 soil profiles. For validation purposes, the statistical models were applied to an independent, quasi-random sample of soil profiles, which was not taken into account for models elaboration, and we compared the real and estimated pH values.