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Spatial analysis for assessing soil organic carbon stocks in southern Spain

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The objectives of the present study were to estimate current soil organic carbon (SOC) stocks for each land use and soil type, studying relationships between SOC stocks and selected environmental variables (elevation, temperature and precipitation).
The study area was divided into land use-soil association units using a topological intersection of the Land Cover Map of Andalusia and the Soil Map of Andalusia (scale 1:50000). Elevation data for each profile were obtained from a digital elevation model (100 x 100 m2) and climate variables from climate spatial datasets in raster format (REDIAM). Data analysis was performed using ArcGIS Spatial Analyst extension tool Extraction values to points.
This type of assessments is scarcely represented at a regional scale in Europe. Accordingly, the proposal methodology can be extrapolated to others areas.
Finally, a SOC map at regional scale was obtained.