



Influence of climatic parameters in the carbon content of topsoils in Galicia (NW-Spain)

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Soil organic carbon (SOC) stock constitutes the largest pool of terrestrial organic carbon, acting as an important long-term sink for carbon released to the atmosphere by human activities. There is a general agreement in that climate highly influences the storage of carbon in soils, being low temperatures and high precipitation rates the environmental variables that mainly increase the carbon storage rates of soils. In this study, we analysed the distribution of SOC content in relation to climatic variability in a climate transition zone (Galicia, NW Spain). Raster maps of climatic variables have been created using spatially non-stationary algorithms. These variables, which include mean annual temperature, annual accumulated precipitation, continentality index, ombrothermic indexes and thermicity index, were then crossed with georeferenced SOC data from topsoil horizons to determine the spatial relationships between SOC content and climate. The model shows that the SOC content is highly related to the hydric balance within each location.