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A QUALI-QUANTITATIVE EVALUATION APPROACH TO PEDODIVERSITY BY MULTIVARIATE ANALYSIS. INTRODUCTION TO THE CONCEPT OF "PEDOCHARACTER".

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A model has been developed for the interpretation of the complexity of pedological systems; this is referred to as "pedocharacter". The main aim of the model was to reduce the variables able to define soils and their relationships with the environment through the following quali-quantitative approach: i) definition of a fair number of qualitative characters; and ii) development of an analytic function, defined as "Land Relevance of the Factor". This enables a quantitative estimation of complexity aimed at analyzing, understanding and mapping pedological system variability. On this basis, an investigation was carried out on topsoil and subsoil characterizing the Sele River Plain (Campania, Italy), with the aim of assessing the differences between surface and sub-surface horizons by means of a comparative estimation prepared through the use of a "pedocharacter" index. In the study area, topsoil pedodiversity (range = -1.31 to 4.50) generally showed higher intensity than in the subsoil (-1.16 to 4.2). In these terms, the numbers and types of variables used for "pedocharacter" characterization were higher in the topsoil Additionally, plant cover appeared equally important for the definition of topsoil (mainly herbaceous cover) and subsoil (mainly woodland cover) characters. The results obtained have led to the development of an integrated pedometric model for the quali-quantitative assessment of "pedocharacter" and, consequently, of pedodiversity. This result is important for basic and applied pedology, suggesting the need for a general refinement of qualitative diagnostic and taxonomic tools, with a view to defining quantitative aspects that are not strictly connected with pedogenic processes.