



Clay mineral changes in different loess-paleosol sequences using DRS and XRD methods

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The loess-paleosol series constitute one of the most widespread terrestrial sediments, which give the most important informations about course of the Pleistocene climatic changing conditions and paleoenvironments. This study represents x-ray diffraction (XRD) and Diffuse Reflectance Spectroscopy (DRS) analysis on two loess-paleosol sequences (Paks and Hévízgyörk) in Carpathian Basin. The aim of this paper is to derive new information on clay mineral changes used as very important indicator of paleosol layers.

XRD is a widely used conventional methods for determine of different clay minerals. Well definiable loess, paleosol and transient units were identificated based on data series of clay fraction ($<2\mu\text{m}$) of samples. Some important parameters of pedogenic processes were well recognizalbe. XRD result helped determine the measuring ranges in reflectance spectra of clay minerals. Interpretatable trends of clay mineral changes could recognized on DRS curves. Good correlation could detect between measured reflectance ranges and X-ray diffraction data series. Results were interpreted relation to widely used DRS proxies (redness index and hematite-goethite ratio).

Keywords

Loess, Paleosol, Carpathian Basin, Diffusre Reflectance Spectroscopy, X-ray diffraction