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陕西洛川黄土剖面的白度参数及其古气候意义 [点此下载全文](#)

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摘要:

对陕西洛川黄土剖面的白度研究表明, 黄土和古土壤存在明显的白度差别, 表现为黄土的白度值较高, 而古土壤的白度值较低, 依据白度值可以清晰地区分出剖面中的黄土层和古土壤层。化学处理以及分粒级实验结果表明风化成壤作用造成细粒级铁氧化物的含量增高是古土壤中白度值降低的主要因素。洛川剖面白度值的变化与第四纪冰期-间冰期旋回的波动特征相一致, 其逐渐增高的趋势与全球气候变冷总体趋势相吻合, 表明白度在反映夏季风环流强度变化, 以及对全球气候变化的响应问题上具有广泛的应用前景。

关键词: [黄土](#) [白度](#) [铁氧化物](#) [古气候变迁](#) [陕西](#) [古土壤](#)

Whiteness Intensity in Luochuan Loess Sequence (Shaanxi Province) and Paleoclimatic Implications [Download Fulltext](#)

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Abstract:

In this paper the whiteness intensities have been measured in the Luochuan loess profile, Shaanxi Province. Results show significant differences of whiteness intensities between loess and paleosol samples. Whiteness intensities are higher in loess than in paleosols. Based on chemical treatments and grain-size fraction, the decrease of whiteness intensities in paleosols is mainly due to the increase of concentration of fine-grained iron oxides during chemical weathering and pedogenesis. Variations of whiteness intensities in the Luochuan loess-paleosol sequence correspond well to cyclic alternation of glacial and interglacial climate. Moreover, the whiteness intensity increases gradually from bottom to top of the sequence, in accord with the general trend of global cooling indicated by evolution of oxygen isotope from deep-sea sediments. Therefore, the whiteness intensity can serve as a sensitive indicator of summer monsoon circulation and has a potential in the application to the response of global climate changes.

Keywords: [loess](#) [whiteness](#) [iron oxides](#) [paleoclimatic variation](#)

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