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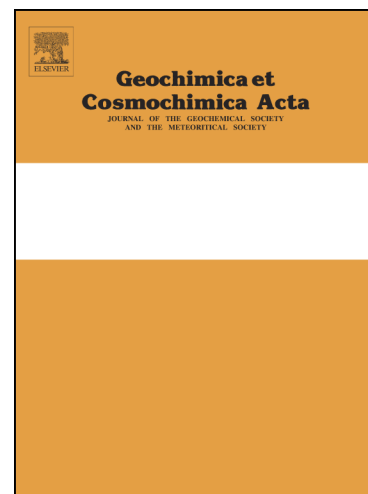
Pre-nuclear level of ^{129}I in Chinese Loess-Paleosol sections: a search for the natural ^{129}I level for dating in terrestrial environments

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Pre-nuclear level of ^{129}I in Chinese Loess-Paleosol sections: a search for the natural ^{129}I level for dating in terrestrial environments

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Abstract

Due to its long half-life (15.7 Myr), radioactive ^{129}I has great potential for dating geologic materials as old as 100 Myr. Thus, knowing the natural level of ^{129}I is crucial to dating applications. The initial ratio of $^{129}\text{I}/^{127}\text{I}$ in the ocean has been quantified by a number of researchers who have reached a consensus value. However, the applicability of ^{129}I dating in the terrestrial environment remains problematic because the lack of an initial $^{129}\text{I}/^{127}\text{I}$ value. In this work, samples of loess-paleosol sections from the Chinese Loess Plateau (CLP) were analyzed for $^{129}\text{I}/^{127}\text{I}$, aiming to provide an initial $^{129}\text{I}/^{127}\text{I}$ ratio that can be adopted for dating purposes in terrestrial environments. A value of $(2.0 \pm 1.0) \times 10^{-11}$ for the $^{129}\text{I}/^{127}\text{I}$ ratio was found in two investigated loess-paleosol sections from Xifeng, and

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