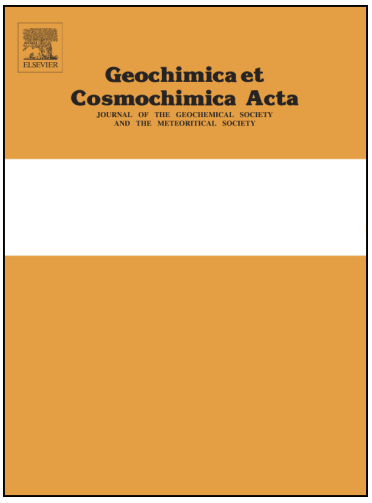


# Pre-nuclear level of $^{129}$I in Chinese Loess-Paleosol sections: a search for the natural $^{129}$I level for dating in terrestrial environments

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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 $^{129}$I/$^{127}$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 $^{129}$I/$^{127}$I value. In this work, samples of loess-paleosol sections from the Chinese Loess Plateau (CLP) were analyzed for $^{129}$I/$^{127}$I, aiming to provide an initial $^{129}$I/$^{127}$I ratio that can be adopted for dating purposes in terrestrial environments. A value of (2.0± 1.0)×$10^{-11}$ for the $^{129}$I/$^{127}$I ratio was found in two investigated loess-paleosol sections from Xifeng, and