

Publication

Agricultural soil erosion and global carbon cycle : controversy over?

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Author(s) Kuhn, Nikolaus J.; Hoffmann, Thomas; Schwanghart, Wolfgang; Dotterweich, Markus

Author(s) at UniBasel [Schwanghart, Wolfgang](#) ; [Kuhn, Nikolaus J.](#) ;

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Recent research on the contribution of soil erosion on agricultural land to atmospheric carbon dioxide (CO₂) emphasizes either the contribution of soil organic matter (SOM) mineralization during transport as source for atmospheric CO₂, or the deep burial of SOM-rich sediment in agricultural landscapes as a sink. The contribution of either process is subject to a controversial debate. In this letter, we present preliminary results on our research on interrill carbon (C) erosion, SOM transport by rill erosion and the stationarity of C erosion during the Holocene. None of those issues has been incorporated comprehensively and with global coverage in the debate on the role of C erosion in the global C cycle. Therefore, we argue that only an eco-geomorphologic perspective on organic C movement through landscapes can reconcile the two positions.

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