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Agricultural Soil Erosion and Global Carbon Cycle: Controversy over?

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Recent research on the contribution of soil erosion on agricultural land to atmospheric 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.