

## Responses of organic carbon in a variety of soils controlled by temperature and cellulose supply

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Carbon stored in the upper meter of mineral soils is estimated to be 2500 Gt, which is approximately 3.3 times the size of the atmosphere and 4.5 times the size of the vegetation. Therefore, soil organic matter is often considered as a significant carbon reservoir on the earth's surface. Although changes in soil organic carbon contents (by natural or anthropogenic causes) have a significant impact on the global carbon cycle, the mechanisms of soil organic carbon stabilization and destabilization and the factors controlling these mechanisms are not very well understood. We thus focused on the response of organic carbon in a variety of soils (black soil, brown soil, and red-yellow soil, etc.) controlled by temperature and fresh carbon (cellulose) supply. In addition, we considered the factors controlling the temperature sensitivity and priming effect.