



Soil Organic Matter Feedback to changes in soil moisture regimes

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The reaction of the soil organic matter (SOM) pool to climate change is largely assessed based on simple models linking temperature and soil moisture, in more sophisticated models also Net Primary Productivity (NPP), to Carbon (C) stocks. Experiments on the sensitivity of vegetation growth and soil properties also mostly consider only temperature as a driver for NPP and thus SOM turnover in soils, while keeping moisture either constant or not distinguishing between moisture and temperature effects. All approaches ignore the feedback of secondary soil properties such as aggregation and pore size distribution, to changes in rainfall regime and litter input. In this study, we present an experiment which is designed specifically to identifying the long-term effects of contrasting soil moisture regimes on NPP, soil C stocks and secondary soil properties such as aggregate stability and porosity. In addition, soil respiration as well as SOM quantity and quality are analyzed.