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Short term carbon storage depends on the temporal pattern of precipitation

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Besides changes in temperature, future climate changes also include the change in precipitation patterns.

Here we study, how the short term carbon uptake of ecosystems is influenced by the precipitation pattern, e.g. the frequency and the amount, in a given year. We use the ecosystem model LPJ-GUESS and both historical and synthetic precipitation patterns and estimate the response of the productivity of a mixed deciduous forest in a given year.

We can clearly show, that both the distribution of the rain as well as the amount of precipitation influence the carbon uptake of the forest. Additionally, increased CO2 values of the atmosphere do partly compensate the most severe drought effects.