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High resolution radiocarbon dating for improved chronologies of Holocene records.

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Cosmic ray induced production of cosmogenic isotopes such as radiocarbon is a subject to variability. The fluctuations in the strength of geomagnetic shielding are caused either by the variable geomagnetic dipole or influence of solar activity. In addition, the changes in global carbon cycle such as ocean-atmosphere exchange add to overall variability of the atmospheric ^{14}C content. These changes in turn cause complication of radiocarbon time scale observed as wiggles on the Holocene radiocarbon calibration curve. Due to the presence of plateaus in radiocarbon ages, calibration of ^{14}C ages becomes difficult. Dating sequences of samples from lake sediments or tree rings provides a tool for minimizing the errors on calibrated ages. Holocene chronologies of laminated lake sediments from Soppnesee (Switzerland) and Holzmaar (Germany) will be discussed.