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The isotope signature of methane emitted from plant matter upon irradiation with UV light

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New experiments show that dry and fresh leafs and other plant matter, as well as several structural plant components, emit methane upon irradiation with UV light and heating. We have determined the carbon and hydrogen isotopic composition of the produced methane in an experimental setup where plant matter is irradiated with UV light or heated in a quartz reactor. CH4 concentration, emission rate and isotopic composition are determined by measurements using an optical absorption technique (cavity ringdown spectroscopy), gas chromatography and isotope ratio mass spectrometry. We will present the source isotope signatures of the methane emitted from a range of natural plant materials. If the aerobic methane source from plants is indeed large, this has to be included in global isotope budgets.