



A comparison of the Greenland Ice-Core and IntCal timescales through the Laschamp geomagnetic excursion, utilising new ^{14}C data from Tenaghi Philippon, Greece

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Cosmogenic radionuclides, such as ^{10}Be and ^{14}C , share a common production signal, with their formation in the Earth's upper atmosphere modulated by changes to the geomagnetic field, as well as variations in the intensity of the solar wind. Here, we present 54 new ^{14}C measurements from a terrestrial fen peat core extracted from the classical site of Tenaghi Philippon, NE Greece, contiguously spanning the time period between $\sim 48,000$ and $39,000$ cal. BP. Utilising the most pronounced cosmogenic production peak of the last 100,000 years – that associated with the Laschamp geomagnetic excursion circa 41,000 years ago – we exploit this common production signal, comparing Greenland ^{10}Be with our Tenaghi Philippon ^{14}C record, thereby providing a means to assess the concordance between the radiocarbon (IntCal) and Greenland ice-core (GICC05) timescales themselves for this, the oldest portion of the radiocarbon technique.