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Mismatch between MIS 5e and the Last Interglacial (Eemian) of Central Europe

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Interglacials have long been distinguished on basis of their marine isotopic signatures and, on land, by their terrestrial fossil assemblages. High-resolution correlation between the marine and terrestrial realms is of utmost relevance for studies of past climate changes and how those might inform us on the future. However, slow accumulation rates and bioturbation effects may result in an attenuated expression of climate change in the marine record, while in the terrestrial record the global climate component may be convolved in a more local or regional climate signal. For our understanding of (palaeo)climate to advance and to delineate potential regionality in the expression of climate change, high-resolution correlation between the marine and terrestrial realms is of utmost relevance. High resolution terrestrial sequences, however, often represent comparatively short time intervals, which hampers clear-cut correlation to deep sea and ice core records. Here we report on climatic and chronological proxy records derived from an interdisciplinary study of the infill of a small basin at Neumark Nord (NN) 2, Germany, which contains abundant traces of Neandertal activity during the last interglacial. Palaeomagnetic analysis revealed a high-resolution record of the Blake Event which we are able to position in the early part of the Last Interglacial (Eemian) pollen sequence identified from the same location. The NN2 data now enable precise terrestrial-marine correlation for the Eemian stage in central Europe and demonstrates a surprising time lag between the MIS 5e 'peak' in the marine record and the start of the Last Interglacial in this region.