



The strength and characteristics of interglacials in the late Quaternary

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Analysis of the EPICA Dome C ice core has provided high resolution records of climate variability over the last 800ka and reveal, for example, variations in the duration, 'shape' and strength of interglacial and glacial periods during this time. This variability is also seen in other palaeoclimate records such as foraminiferal $\delta^{18}\text{O}$ records; however no synthesis of available 800ka ice, marine and terrestrial records has yet been made to compare and contrast interglacial and glacial characteristics.

Records of δD , CO_2 , CH_4 , temperature and Ca flux from EDC, globally distributed high resolution benthic & planktonic $\delta^{18}\text{O}$ records, loess records from the Chinese Loess Plateau, Lake Baikal biosilica and the Tenaghi Philippon pollen record have been selected for their length, resolution, continuity and spatial distribution. Marine records have been aligned with the LR04 stack using the graphic alignment program Match to enable comparison with ice core records on the EDC3 timescale, as the differences between these two age models have already been evaluated. Terrestrial records are evaluated on their existing published age models. Variations in age model construction, orbital tuning of age models and graphic alignment of the records mean it is not possible to address phasing (and duration) in this study.

A suite of characteristics from these records, including average and peak values of interglacial and glacial intensity & termination magnitude, are being compared to discover what the similarities and differences can suggest about the character and mechanisms of long term climate change over the last 800ka. Termination magnitude is defined as simply the difference between peak (average) interglacial and glacial values. Rampfit was used to objectively estimate average glacial and interglacial values, and the beginning and end of the glacial-interglacial transition and uncertainties for these parameters. We are thus able to derive spatial patterns of the strength and characteristics of each interglacial.