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The intensity of interglacials over the last 800 ka

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Numerous records from the marine, terrestrial and ice core realm show a pattern in which the basic glacial-interglacial pattern is seen, and in which the pattern can easily be aligned (but not necessarily synchronised) with marine isotope stages identified in benthic isotope records (LR04). In some cases we can identify the measure with a clear climate parameter (for example the ice core measurements of CO_2, or Mg/Ca in marine records representing SST); in others the association is less clear but still the pattern is seen. In each record one can define the intensity of the interglacial based on the extent to which the measured parameter goes in the interglacial direction (higher CO_2, more arboreal pollen, less dust,. . . .). In defining the intensity of each interglacial, we therefore have a range of measures representing different aspects of the Earth system and different geographical regions. This paper indexes the strength of each interglacial in each record that covers the entire period of 800 ka with good resolution. This updates and extends a previous compilation, and leads to maps that define the pattern of intensity for each period. While some interglacials have a tendency to be strong (5,11) or weak (13) in many records, this conclusion is not globally true, and we will consider the spatial inhomogeneities and their climatic significance. A statement, more nuanced than usual, about the change in intensity at 450 ka, will be made. This paper forms part of a major review of interglacials currently being undertaken by the PAGES Past Interglacials (PIGS) team.