Field Intensity changes during the past 40 ka

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The period encompassing the past 40 ka is crucial to constrain the characteristic time of the axial dipole, which is computed so far from the historical period and still fails to be tested against long-term field changes. The past 7 kyr of geomagnetic history are primarily documented from archeological artefacts, yet the last 4 kyr remain relatively poorly constrained. Beyond this period, we are dealing with long-term changes of the dipole field that are relatively poorly documented by sedimentary records or by volcanic lava flows. Many measurements of absolute paleointensity do not incorporate directional information, while it is crucial to document the entire field vector and consequently can only be analyzed in terms of virtual axial dipole moments (VADM). In summary, no high resolution dataset covers the field changes which followed the Laschamp event and therefore we have poor knowledge of the pattern of fluctuations and the rate of the changes that were associated with the field recovery after the Laschamp. We have selected a set of marine sedimentary cores based on the quality of their oxygen isotope records. Their deposition rates are comprised between 10 and 20 cm/ka and therefore offer a great potential to constrain the field intensity changes with a resolution of the order of 100 ka. during this period. We will present the results obtained from 7 marine core records and investigate their common and their discrepant features in order to identify the true paleointensity signal.