

***Interactive comment on* “Uniform climate development between the subtropical and subpolar Northeast Atlantic across marine isotope stage 11” by J. P. Helmke et al.**

J. P. Helmke et al.

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The comments from the referees are greatly appreciated and helped to improve our manuscript. Below we provide a reply to the comments (the referees main comments and suggestions are given in italics).

Anonymous Referee 1

Glacial-interglacial termination: Comparison of the benthic carbon isotopes from Site 658 to our records

The referee points out that across Termination V the benthic carbon isotopes from Site 658 (which is close to our study site) support our claim for a close connection between high and low latitude climate in the North Atlantic region. As suggested, we

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now considered the Site 658 carbon isotopes when discussing the glacial-interglacial transition from MIS 12 to MIS 11.

Interpretation of variations in carbonate content

The referee feels that we should mention changes in deep water ventilation as an important factor in controlling carbonate dissolution at our study site. As recommended, we now discuss the potential influence of changing carbonate dissolution on our carbonate record.

Species-specific seasonal habitats of planktic foraminifers along the northwestern African margin

As suggested, some findings of Ganssen (1983) on the habitats of different modern planktic species along the northwestern African upwelling belt were added to the discussion of our planktic 18O signal from Site 958 outside the upwelling regions.

Anonymous Referee 2

General: Reorganisation of text into Results and Discussion part

The referee asks for a better organisation of the text into the Results and Discussion sections, as currently both (sections 3 and 4) contain descriptive and interpretive elements. As recommended, we now distinguished the description of the results more clearly from the interpretation part, especially the description of Termination V is now limited to the Results section. In addition, for a better reading of the text we followed the referees suggestion and separated the topical issues of the Discussion section by using several subheadings.

Introduction: State of the art about the comparability of interglacial MIS 11 and 1

As recommended, we revised the entire paragraph about past references regarding previous efforts to compare MIS 11 and 1 in order to clarify our statement.

Section 3: Restructuring of the Results section

The referee feels that we should describe the evolution of MIS 11 by giving details about the benthic isotope record at first (as the benthics reflect the overall evolution

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of the global climate) and then we should give the results for all other proxy records. As we intend to show the temporal evolution of MIS 11, we keep to our scheme of describing different time slices showing the details of all used proxy records instead of explaining the complete MIS 11 evolution of one specific proxy record after the other. However, for the specific time intervals that were described in greater detail within the Results section we now describe the benthic isotope record at first.

Section 3: Definition of full interglacial conditions

We added information about the age range of full interglacial conditions and also give the minimum oxygen isotope values of this period for all our foraminiferal species. The referee also asks about a comparison with the definition of peak interglacial warmth used by Oppo et al., 1998 (using Site 980, Feni Drift). Our characterization of full interglacial conditions is in line with the definition of Oppo et al., as the authors - amongst other data - also used the benthic oxygen isotope and the terrigenous input minima (using IRD, we used the iron concentration as proxy for terrigenous input) to define peak interglacial conditions.

Section 4: Description of Termination V

We clarified our description of Termination V and also distinguished more clearly between results and the discussion of the termination period.

Section 4: Paragraph beginning at the bottom of page 443 about comparison with high latitude records

As recommended, we changed the manuscript to clarify our statements.

Figure 4: Use of different age range for MIS 11 and 1 in Figure 4

As mentioned by the referee, MIS 11 was considerably longer than MIS 1, and, thus, both interglacial periods were plotted using a different age range. To avoid confusion we changed the text of the figure caption and point now specifically to this difference. However, due to the differences in the duration of both interglacial periods we do not believe that the clarity of the figure would be improved by putting MIS 11 and 1 on the

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same age range and we keep to our original figure.

In addition, we changed the manuscript with respect to several minor editorial suggestions (change of specific terms, rewriting of sentences) by referee 2.

Interactive comment on Clim. Past Discuss., 4, 433, 2008.

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4, S245–S248, 2008

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