

Interactive comment on “Deglacial sea-level history of the East Siberian Sea Margin” by Thomas M. Cronin et al.

Anonymous Referee #1

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The paper “Deglacial sea-level history of the East Siberian Sea Margin” has the aim to reconstruct and estimate, from sediment cores, the paleo-depth in the eastern margin using benthic foraminifera and ostracode species.

Thought the results are discussed properly and they could be relevant for a large audience, I am not convinced by the dating of the cores. Without a confident age calibration all the discussion given in the manuscript are of secondary importance. The results obtained by the authors can be much improved if the age scale and the confidence associate with the dating of the core will be improved.

The chronology of the lower section of core PC1 is based only on 5 points (6 with the outlier) where four of them suggest a similar age, though they cover 33 cm of the core. Considering this uncertainties and lack of age calibration points in the bottom

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part of the core I would be careful in assume an almost linear relationship depth vs age to date the bottom part, especially for the time periods investigate. The periods between 10 ky and 15 ky BP in the Arctic, have been characterize by rapid climate changes brought to different climate condition. In this period we can distinguish three different climate phases, the Younger Dryas, the Bølling-Allerød interstadial and the early Holocene. These periods could have been characterized by different deposition and sedimentation rate making the assumption of a linear sedimentation rate below the lowest date not convincing.

The core 20-GC1 shows a similar age between 55 to 90 cm depths. Could the continuity of these sediments be disturbed and reshuffle by the Fennoscandia ice sheet movement?

Without additional information improving the core chronology, especially for the bottom part of the PC1 core, the discussion present by the authors are not convincing.

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