

***Interactive comment on “Radionuclide wiggle-matching reveals a non-synchronous Early Holocene climate oscillation in Greenland and Western Europe around a grand solar minimum” by F. Mekhaldi et al.***

**Anonymous Referee #2**

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This manuscript provides an important contribution to understanding early Holocene climate changes in Europe and Greenland. The authors first synchronize the Greenland ice core GICC05 and the Meerfelder Maar (MFM) varve  $^{10}\text{Be}$  measurements to the radionuclide production rate derived from IntCal13 assuming a 20% uncertainty. With the records on the IntCal13 timescale they then are able to separate the 11.4 ka climate anomaly seen in Greenland  $\delta^{18}\text{O}$  record from the climate MFM climate anomaly in the  $\delta\text{D}$  record. The cold dry climate oscillation in Greenland (ca. 11.37 to 11.27) is correlated with a period of high solar activity. There is not a similar oscilla-

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tion in the varve thickness or  $\delta D$  in the MFM record at that time. When solar activity then dropped to a grand minimum, Greenland warmed and the MFM oscillation began with colder conditions inferred from the  $\delta D$  record. The authors then discuss potential causal mechanisms including solar forcing and solar-ocean coupling with due caution. I recommend this be published and suggest no changes to the manuscript.

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Interactive comment on Clim. Past Discuss., <https://doi.org/10.5194/cp-2019-125>, 2019.

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