The manuscript has been clearly improved, both in terms of its structure (with a "data results" section that was missing in the original version) and content (with a clarified and much improved discussion).

Yet, I still have some questions/commentaries and suggest that the manuscript could be accepted but with additional minor improvements.

1/ LIT MAR: Considering the key importance of the LIT MAR record in the discussion, this proxy deserves an in-depth presentation in the manuscript. Instead of just providing the final, computed LIT MAR record, I would like to see also a figure with the bulk data that have been used to construct this record, namely: (i) the dry bulk density record, (ii) the non-carbonate % and (iii) the sedimentation rate record derived from the numerous ^{14}C dates (with the location of those dates along the core). This could be done in the main manuscript, or in the supplementary material.

Not only should the bulk data for LIT MAR be provided to the readers, but they should also deserve an in-depth discussion too.
It is striking that some of the main LIT MAR events described in the text (eg. LIT MAR peaks at ca 8.4 ka, ca 3.4 ka and ca 2.8 ka) are just defined by 1 or 2 data points only.. I would be interested to know what explains those extremely narrow and high amplitude changes (do they reflect peaks in sedimentation rate and a potential issue with dating? Do they reflect peaks in DBD or peaks in the lithogenic material %? Do they result from a combination of those three elements?). How confident can we be regarding those peculiar peaks? How sensitive is the Wavelet Analysis to the presence of such short, high amplitude peaks?

3/ Line 143: the authors state that the last 3 ka show more variable SST that before. Couldn't this be - at least partially - attributed to the fact that the temporal resolution is also higher over the top 3 ka than in some older parts of the record ? I counted, for instance, about 20 data points in the SST record over the 4.5-6.5 ka interval, but ~ 40 points over the 0-2 ka time interval, thus twice as much. Change in sampling resolution should have an effect on our capacity to resolve rapid SST variations. The d18O record, which displays a more constant sampling resolution along the core than the SST record, suggests a relatively similar/invariant type of periodicity across the entire Holocene. Was this record run through Wavelet Analysis? How this compares with the LIT MAR spectral evolution?

4/ Wavelet analysis: I wonder why wavelet analyses were not performed/shown for the other proxies as well. Is LIT MAR the only proxy that reveals a shift in periodicity across the Holocene? Shouldn't we expect to see also a change in periodicity in the EM3 record, for instance? Is it seen when performing wavelet analysis?

5/ Figure 2: Is the "factor 1 – SST" (figure 2b; Giosan et al.) used and discussed in the text ?? I couldn't find a call to this figure 2b in the text.