First of all, we thank the two anonymous referees for their constructive comments which helped us to improve our manuscript. In the following we give a step-by-step response to the referee comments (given in black, our responses are given in blue).

RC1-1: Review of manuscript "Holocene climatic changes in the Westerly-Indian Monsoon realm and its anthropogenic impact" by Burdanowitz et al.. The main thrust of this manuscript is to use high-resolution proxy records from the NE-Arabian Sea reflecting various aspects of Holocene monsoonal changes in the region. The main new data series include Uk37 based SST estimates, alongside a number of proxy time series (Ti/Al, endmember modelled aeolian input and lithogenics mass accumulation rates) reflecting lithogenic input in the region with the latter being of central importance. Based on these data the authors conclude that the Arabian Sea region around 4.6-3kaBP became more sensitive to changes in the tropical westerly jet controlling climate in the region. Overall there may well be something interesting in this manuscript, but in the current state it is not clear what this finding/story actually is. These are just a few problems.

Response: We thank the anonymous referee #1 for his/her constructive comments on our manuscript.

RC1-2: In my judgement, the biggest issue is the combination of results and discussion. In the absence of a dedicated results chapter the text rather selectively describes certain findings, whilst (largely) ignoring others.

Response: We agree with referee #1 and also referee #2 who have raised concerns about the combination of results and discussion sections. We have rewritten the "results & discussion" part and have divided it into two separate sections. We also agree with both referees that this highly increases the readability and flow of arguments of our manuscript.

RC1-3: As an example, the authors place emphasis on relationship of the early Holocene rises in the LitMAR record (ignoring at this stage that there is a gap in the record near the time period being discussed) and Bond event 5. Later in the manuscript, again, it is being emphasised that there is a relation between the final Bond events and variability in the LitMAR record. What about the Bond cycles between 7.5. and 3.5kaBP. There is no relation in my view between these cycles and the LitMAR record, which in this interval has no obvious signal. What is this mismatch driven by, the alleged climatological connection between the Bond events and sedimentation in the Arabian Sea, or is the LitMAR proxy not sufficiently sensitive?

Response: We thank the referee #1 for stressing this mismatch, which was not properly explained in our manuscript. We are aware that we cannot exclude enhanced LIT MAR within the gap period (9.4 to 8.5 ka BP). However, between the gap period and the enhanced LIT MAR around 8.3 to 8.2 ka BP two low data points suggest to us that this period of enhanced LIT MAR may a short event caused by high soil erosion around the 8.2 ka event. We have added this information to the manuscript. The referee #1 is correct that there is no apparent relationship between the Bond cycles in the time interval 7.5 to 3.5 ka BP and the LIT MAR. This is in our interpretation an additional support for our hypothesis that the period between 4.6 and 3.0 ka is a transition period from low to mid-high latitude influence. We argue that the Bond event signal and the climate variability in the North Atlantic, respectively, have a stronger teleconnection to the Makran region, when STWJ is located more to the south. Therefore, the Makran region is more influenced by the mid-high latitude climate during the past 3.5 ka than during the Mid-Holocene (ca. 7.5 to 3.5 ka BP). Thus, the ISM and the low latitude climate were dominant drivers in the Makran region and suppressed the influence of the Bond events during the Mid-Holocene. We stressed the teleconnection between the mid-high latitude climate and the Makran region in the previous version of the manuscript (lines 210 -213):

"*We suggest that the time period between 4.6 and 3 ka BP marks a transition from an ISM-dominated climate system towards one which is more influenced by the STWJ. This strengthened the teleconnection between the Makran coast and climate variability in the North Atlantic, which is most visible by the link between the LIT MAR record and the Bond events since the end of the time period and associated fall the Indus civilization (Figure 2).*"

and (lines 284 - 287)

"*Since the transformation of natural into cultivated landscapes favors soil erosion, it is likely that this early human land-use change intensified the impact of the NAO and Bond events on the sedimentation in the NE AS during the late Holocene. The latter in turn documents a clear shift of the climatic system that was associated with the collapse of and deep crises of Late Bronze Age societies in the Mediterranean, Middle East and East Asia.*"

However, since a clear discussion about the teleconnection of Bond events and LIT MAR during the Mid-Holocene period was lacking in the previous version of the manuscript, we have now included it in the discussion.

RC1-4: With regard to the wavelet power spectrum, I am not convinced of the usefulness in this case, the main problem being the lack of a clearly visible signal in the LitMAR record between 7.5-3.5 kaBP. How does that affect the overall analysis? Also, it would help to inform the reader of the main findings based on this analysis (in the main text) rather than just alluding to change in frequency.

Response: We agree with referee #1 that we have to include the main findings of the wavelet power spectrum analysis to better understand the visible and hidden signals. For this analysis we used a Matlab script and interpolated our data set to achieve a temporal resolution of about 15.6 years. This is the minimum time step between two samples and also covers the gap between 9.4 and 8.5 ka BP. The advantage of the wavelet power spectrum is that it shows how the periodicities differ/change during the time. For instance, there are time periods that do not show a specific periodicity signal. In our LIT MAR record, this is the case for the periodicity of about 512 to 1024 years observed during the last 3.5 ka compared to the prevalent periodicity of about 2048 to 3000 years in the time period between 7.5 – 3.5 ka BP. The absence of these shorter periodicities during the Mid-Holocene is a further evidence that Bond events (cycle length roughly of about 1500 years) and, therefore, mid-high latitude climate have played a minor role in the Makran region during that time. We have added further description to the results and the discussion section to highlight the findings of the wavelet power spectrum analysis.

RC1-5: There are quite a few statements that lack clarity regarding the implied change in the monsoon system and therefore appear contradictory. As an example in lines 154/5 there is this statement “This warm period encompasses the Mid-Holocene climate optimum period and is characterized by low LIT MAR and increasing fluvial input (Figure 2)..” Would increasing fluvial input not entail higher lithogenic sedimentation rates? If so, how does this compare the overall low LitMAR record?

Response: We agree with referee #1 that some statements were not clearly explained. As referee #2 has the same issue regarding the contrasting behaviour of fluvial input (Ti/Al ratios) and LIT MAR (indicator for soil erosion), we have added further text to the discussion to explain our reasoning. The LIT MAR is decoupled from the Ti/Al records as it is an indicator for soil erosion and is not necessarily coupled to only fluvial input, but also to aeolian input. Arid conditions are necessary for enhanced soil erosion to occur, because vegetation prevents soil erosion. But also during arid phases there can be flood events triggered by precipitation events, that cause a strong fluvial sediment transport. This is, for instance, also evident in the Namaqualand mudbelt sediments offshore western South Africa (Herrmann et al. 2016). We posit, that the combination of pronounced soil erosion, flood events and strong winds during arid phases led to the high LIT MAR in the late Holocene part of our record.

RC1-6: Similar inconsistencies regarding the general state of the monsoon circulation can be found elsewhere in the manuscript. With regard to the LIG approach there is not sufficient justification provided why the chosen gradients are the most appropriate. There have been other approaches (on different time scales) such as by Reichart who has used a different gradient. There should be a better explanation as to the reasons for choosing the LIG’s.

Response: We agree with referee #1 that the different approaches and concepts regarding the latitudinal insolation gradient (LIG) are not properly explained in the manuscript and have now added further information. In general, there are two different concepts for the LIG. Reichart (1997) and Bosmans et al. (2015) argued that the boreal summer cross-equatorial insolation gradient plays an important role for the inter-hemispheric moisture transport as well as the extent of the Hadley cell and may drive glacial-interglacial variability. The other concept by Davis & Brewer (2009) highlights the importance of intra-hemispheric insolation gradients during summer (driven by obliquity) and winter (driven by precession). These authors stated that intra-hemispheric LIG influences the strength of the monsoon system and its most poleward position as well as the position of the Hadley cell. For our study, we were interested in the northernmost position of the ISM and the southernmost position of the STWJ, because the core location is influenced by both systems. A study from the West African Monsoon region found a strong link of intra-hemispheric summer LIG (60° – 30°N) and strength of the West African monsoon (Küchler et al. 2018). Ramisch et al. (2016) found that the ISM variability over the Tibetan Plateau may be sensitive to the summer LIG between 44°N and the Himalayan barrier at 30°N rather than cross-equatorial LIG. Therefore, we have chosen the summer LIG between the equator and 30°N south of the Himalayan barrier (Ramisch et al., 2016). The STWJ reaches its southernmost position during the winter in the study area and the position of the STWJ ranged from 35°N and ~54°N during the last 6 ka (Fallah et al., 2017). Therefore, we have chosen the winter LIG between 30°N and 60°N.

RC1-7: Overall, there may well be something interesting in this paper. Currently, however, it lacks maturity and requires a substantial rewrite. There, should be a better separation between results (all) and the interpretation. In addition, the discussion should be “closer” to the actual data. Large parts of the text read like and general discussion with a loose relation to the actual observations. More could be said.

Response: We thank the referee #1 for his/her constructive comments which help us to improve the manuscript. Based on these comments we have separated the "results & discussion" part into "results" and "discussion" chapters. In addition, we have added information about the various proxies employed and their links to mid-high latitude climate and Bond events, respectively. We have rewritten parts of the discussion to better support our findings. We have also decided add additional data relevant for this manuscript as supplementary material. This includes results of grain size analyses and end-member modelling analyses as well as data on the *n*-alkanes (CPI_{27-33}, ACL_{27-33} and *n*-alkane distribution).