The paper here presented is intended to contribute to the ongoing discussion of the potential impact of the Toba eruption on a larger regional scale. With respect to the fruitful comments by the two reviewers, we are well aware that the extraordinary lake level low stand in Lake Prespa around ca 75 ka is not unambiguously correlated with changes in the atmospheric circulation patterns due to the Toba eruption. We tried to express this by the title ("Potential impact...") and also by the discussion of the chronology and other potential triggers of a lake level low stand in the text.

We here will make a point to point reply to the general and specific comments of the reviewers.

Referee #1:

... However, despite this, along with the absence of the YTT, the analysed succession has not the centennial, or even the decadal resolution required to detect and investigate the potential impact of the Toba eruption at this latitude. On the contrary, the interested stratigraphic interval is very poorly constrained, since it lacks of direct age control apart from the ESR dating result of 73.6 ± 7.7 ka BP obtained from the Dreissena *sp. The error associated to the age is too large to accept it as a main tool to infer a relation with the Toba eruption, as the authors did. If the authors take into account the mean age of 73.6 ka, then they should take into account as a reference also the 40Ar/39Ar age for the Toba eruption proposed recently by Mark et al. (2013; Quaternary Geochronology) of 75 ± 0.9 ka BP, obtained from both proximal and distal deposits...*

The average sedimentation rate over the entire record is 0.02 cm/yr. TOC and TIC measurements were made on 2 cm thick subsamples, which would correspond with a centennial resolution. Despite the availability of XRF scanning data with higher resolution (e.g. Damaschke et al. 2013, Panagiotopoulos et al. 2013), bioturbation may have blurred the sharpness of the event in the Lake Prespa sediments. With respect to the age of the shell horizon, we are aware that the ESR age at 1460 cm depth has a fairly large error. However, the timing of the lake level low stand is supported by extrapolation of tephrostratigraphic horizons and, more importantly, tie points obtained by tuning of TOC in the Prespa core with the NGRIP isotope record. A TOC peak above the shell horizon occurs at 1394 cm and likely corresponds with the GI-19, which ends around 70 ka. The TOC maximum directly below the shell horizon, at 1472 cm depth likely corresponds to the GI-20. Although the exact timing of the Toba eruption is under discussion (Mark et al., in press), it seems to be consensus that the younger Toba eruption occurred at the GI-20 to GS-20 transition (e.g. Svensson et al. 2013, Mark et al. in press). As there is no evidence for distinct changes of sedimentation rates in core Co1215 throughout this part of the core, we believe that the ESR age of 73.6 (**±** 7.7) ka is relatively reliable and matches relatively well with the GI-20 to GS-20 transition. However, we are aware that tuning often produces erroneous ages and that a potential correlation of the lake level low stand in Lake Prespa with the Toba eruption is speculative. In order to improve the manuscript, we added these tie points into Figures 1 and 2 and broadened the discussion in the text.

...Moreover, the authors did not clearly explain the depositional mechanisms responsible of the occurrence of the Dreissena *sp. in deeper environments. Actually, they report an explanation differing from that reported in Panagiotopoulos et al. (2013)...*

According to Panagiotopoulos et al. (2013), the shell deposition and the TIC peak at 74 ka occurred at the onset of a colder and dryer period between 75 and 71 ka. This period is characterized by lower tree cover and likely corresponds with the GS-20. Whilst the vegetation in the catchment of Lake Prespa is apparently affected by the long-term climatic change, the lake itself reacts very rapidly and only for a relatively short period. As discussed in Panagiotopoulos et al. (2013), the lake level lowering at the onset of the period could have led to an expansion of *Dreissena* sp. In addition, increased reworking due to increased wave and current activity at low lake levels are potential depositional mechanisms. We included this discussion in the text of the paper now.

...The paper suffers of an uncorrect structuration since presentation and interpretation of data are mixed.... It is not very clear to me from this research paper which are the new data and the ones already published. The authors aim to present new seismic and sedimentologic data (as written in the final part of the Introduction) but all I see in the figures is a collection of previously published data. Which is the original contribution?...

All of the data and most of the environmental history are presented and discussed in more detail in other publications (Wagner et al. 2011, Damaschke et al. 2012, Leng et al. 2013, Panagiotopoulos et

al. 2013). We only show those data here, which are relevant for a discussion of the potential impact of the Toba eruption on a lake level low stand at Lake Prespa. We clearly indicate that the data were published, but never discussed with respect to a potential link to the Toba eruption. As we tried to keep the paper as short as possible in order to avoid repetitions, we presented and discussed the data in a single chapter. Most of the data are discussed in more detail in other papers in the same special issue. However, we followed the reviewers comment and tried to separate better between discussion and interpretation in the revised version.

...Along with the interpretated seismic profiles, I always like to see the original ones also. This may allow the reader to think about other possible interpretative solutions (if they are, of course!)...

We added the original, uninterpreted seismic profile to Figure 1.

...The authors sometimes make suppositions without providing any evidence, e.g. in the case of the duration of the hiatus at lake Ohrid, in other cases they exclude some hypotheses without providing any explanation (e.g. to explain the lowstand at Lake Prespa)...

We broadened the discussion with respect to the sensitivity of Lake Prespa to changes in the hydraulic regime (see also below for discussion of mismatch between pollen record and lake record). We only can speculate about a potential impact of a lake level drop of Lake Prespa on the hydraulic regime of Lake Ohrid. Reduced water supply from Lake Prespa may have resulted in a lake level lowering of Lake Ohrid, which caused a mass movement and a hiatus in the Lake Ohrid core. The duration of the hiatus in the Lake Ohrid sequence is very poorly constrained by the age-depth model. The age at the top of the hiatus is extrapolated over a large interval and slight shifts in the sedimentation rate would result in a distinctly different age compared to the age proposed by Vogel et al. (2010). As the mass movement likely was erosive at its base, a direct correlation to the Lake Prespa low stand cannot be given. However, we tried to explain this in more detail in the text now.

...The authors use the tephrostratigraphy, among other tools, to constrain the ESR age result. However, the older tephra correlated with an age-dated volcanic event onland (Y6) occurs at least 550 cm above the dated point; therefore this cannot be considered a very strong constraint....

We fully agree with this, and believe that additional chronological constraints around the shell horizon are coming from tie points between TOC and the NGRIP isotope record (see also above). We modified Fig. 2 accordingly.

...All the above considerations point to a too speculative discussion in the current version of the manuscript. In short, the reported evidence from Lake Prespa neither proves nor disproves the concept of a significant environmental impact from the Toba eruption...

We agree with the referee that there is only a potential impact of the Toba eruption on the environmental history of the Balkan region and expressed this in the title of the paper and in the discussion of other potential reasons for the lake level low stand. We do not exclude that other reasons triggered the lake level lowering, but we would like to show that the only known event around this time is the Toba eruption. More evidences from the region would be needed to strengthen the speculation about a potential impact of the Toba eruption on the climate in the Balkan region.

...There is mismatch between cited articles in the text and reference list. Please, check...

We checked and corrected the reference list

Referee #2:

.... Firstly, there is no evidence of the presence of Toba tephra in the Lake Prespa. The authors correctly recognise this circumstance as a limitation for their general inferences, but in spite of this

they propose to overcome this crucial problem via a simple chronometric correlation. Specifically, they use an extrapolated ESR dating at 73.6±7.7 ka for correlating a dramatic lowstand of the Lake Prespa to the Toba eruption and thus interpret this aridity event - recognised as very peculiar in the whole Prespa record - as the environmental-climatic effect of the volcanic eruption. This conclusion is however highly speculative and not adequately supported...

The lack of Toba ash particles in the Lake Prespa record is not surprising, taken that the core is several thousand kilometres further west to the closest site (the Arabian Sea), where ash particles were found so far. We do not believe that there is a direct impact and a deposition of Toba ash particles in the Lake Prespa sediments. However, the atmospheric circulation patterns may have changed for a short period. Today, the annual inflow amounts to 534 x 10^6 m^3, which is about 15 % of the entire volume of the lake (Matzinger et al. 2006). A relatively short period of less inflow would produce a distinct lake level decrease.
For the discussion of the reliability of the age, please see also comments to referee #1.

...Finally, also the paleoenvironmental record has not a sufficiently high resolution for documenting the potential short-term effects of the Toba eruption. In addition, in terms of potential long-term effects, the drop of the arboreal pollen associated to the shell-layer documenting the lowstand and correlated to the Greenland Stadial 20, which follows the Toba eruption, is not so surprising marked. Indeed the Prespa pollens provide evidence for other similar stadial episodes occurred during both MIS 5 and MIS 3, some of which are associated to more severe aridity conditions. This rises some doubts on the claimed exceptional climatic condition associated to the lowstand dated at 73.6±7.7 ka...

Interestingly, the stadials mentioned in MIS 5 and MIS 3 apparently did not produce a similar lake level low stand in Lake Prespa as recorded around 73.6±7.7 ka. This might express the discrepancy between the pollen record and lake internal reaction. A relatively short event probably does not affect the vegetation in the catchment of the lake. Moreover, vegetation in the catchment and lake level variations can be decoupled due to seasonal effects. We included this in the discussion now of the revised version.

...The authors also mention the fact that the lake is in a tectonically and karst active area, but they rule out the possibility that a palo-earthquake and/or karst processes could have been responsible for the dramatic lowstand of the Lake Prespa, because a similar tectonic/karstic event dated at the end of MIS 5 "has not been described thus far". However, I disagree with this affirmation; in fact the lack of descriptions is not necessarily a proof of no occurrence. Paradoxally, one could affirm just the contrary; i.e., that the lowstand could be seen as an evidence of a previously unrecognised late-MIS 5 tectonic / karst event...

We completely agree that a tectonic / karst event could have produced a lake level lowering of Lake Prespa. Therefore, we discussed this option in the text. We broadened the discussion now, as it would require a second tectonic / karst event (or an increase in water supply) to increase the lake level again. At the present stage, we do not rule out that these tectonic events could have taken place, but the only known event around this period is the Toba eruption. Nevertheless, we agree that the lack of descriptions is not necessarily a proof of no occurrence and discuss this in the text.

...I do not discuss the peculiar paleoenvironmental significance of the the Perspa Lake lowstand, which is well documented, but its direct linkage to the Toba eruption, claimed by the authors, is not convincingly demonstrated and, for myself, it does not go beyond the speculative sphere...

We completely agree with the referee and tried to point out in the text that further evidence from other records in the region would be required to strengthen the speculation about a potential impact of the Toba eruption on the climate in the Balkan region.

...It would be useful to show in Figure 2 a correlation between Prespa pollen profile with one or more paleoclimatic records containing the Toba ash (e.g. Arabian Sea) or its putative volcanic signal (e.g. NorthGRIP or GISP2)...

We added the NGRIP record and the proposed tie points to TOC in core Co1215 to the NGRIP the record.