This study provides a quantitative assessment of the potential effects of pH changes (Δ) on planktonic foraminifer Mg/Ca based records of SST. The approach to quantifying sensitivity is fairly rigorous, utilizing data from a collection of lab based culturing studies involving several species of planktonic foraminifera, thus capturing a range of sensitivities, which is critical for estimating uncertainty in applying adjustments to extinct species. From the results of the culturing studies, it is evident that for most paleo applications, the pH effect must be accounted for in converting Mg/Ca to SST, as it must with $\delta^{18}O$ to SST and SSS. The PETM is the most relevant case study for the application of the pH based adjustments, with theoretical/observational based estimates of a pH decline 0.1 to 0.3, which if unaccounted for leads to a ~1°C overestimate of the warming.

I reviewed the original version of this manuscript. As noted in the first review, this is a relatively solid effort. The example of the PETM provides a template for how one might apply these adjustments to other records. My primary contention with the original study was the globally uniform application of the pH adjustment without consideration of other time and spatial dependent factors (could lead to over/under adjusting SST). I suggested that figure 7 be removed or modified for that reason. The authors modified the figure with addition of the $\delta^{13}C$ anomalies, which now provides a basis for assessing where the CIE might be truncated, for example site 401. Another issue concerned the pH sensitivity of Mg/Ca partitioning in extinct species and at sea water chemistry different than modern, though this is a minor issue and has been addressed to the extent possible.

I still believe this effort represents a very good start, but not the final word on the pH adjustments for the PETM. In a perfect world, pH data would be available for each site, each sample. Given the analytical limitations on B isotopes, however, eventually a more practical approach might be to use ESM output along with the $\delta^{13}C$ records to estimate the pH adjustments for sites/samples which lack observational constraints on pH. I believe $\delta^{13}C$ would be most suitable as the one metric which can be used to infer both stratigraphic relationships and state of local seawater carbonate chemistry, at least within the framework of the carbon release.

The manuscript is well written with just a few minor typos. I recommend the paper be published with minor modification at authors discretion.