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Atmospheric Measurement Techniques Discussions
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Interactive comment on "EPN Repro2: A reference GNSS tropospheric dataset over Europe" *by* Rosa Pacione et al.

Anonymous Referee #1

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As the GNSS tropospheric products are getting longer, it becomes more and more important to create homogenized products, especially for climate applications. From this perspective, the manuscript is timely and important. I think that the manuscript sill needs major revision before it is ready for publication. My main comments are two folds. First, I would like to see some more explanation on the differences (esp biases) presented from the comparisons with radiosonde and ERA-Int. There are a few specific comments listed below. Second, it would be great to show how the processed data improve the detection of PW trends, even with just a few examples. 1. Fig. 10: add a horizontal zero line, so that it would be easy to see the sign of the differences. This applies to other plots too. Any explanation to the statistically significant large biases? How does this compare with prior studies? It would be better to express the biases in percentage. 2. Fig. 11: I would recommend to add some quantitative numbers,

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such as the reduction of biases and SDs, in the text (or Fig.) and the discussion. Based on visual examination, it looks like that it is mainly a shift 3. Fig.12, L357-358: It is not clear to me how “the limited temporal and horizontal NWM resolution as well as corresponding deficiencies in NWM orography” cause the negative differences in ZTD-NWM. Why does it vary with time (generally reduced magnitudes with time)?

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