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Interactive comment on "Noise characteristics in Zenith Total Delay from homogeneously reprocessed GPS time series" *by* Anna Klos et al.

Anonymous Referee #2

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Dear Anna, and co-authors,

Thank you for your paper. I think the approach you have taken to analyze the noise of the time-series is a good one, had you converted your time series to IWP then you would be adding another source of potential error to the time series, whether that had been obtained from a collocated meteorological sensor or interpolated from a grid. Restricting your study to ZTD is valid and highlights the uncertainties just obtained from the GPS-derived estimates, without further complicating the matter with other potential noise sources.

I think you give a good coverage of the approach you have taken, however, I would like to have had more detail on the exact source of the time series, was this a solution submitted by GRG to the IGS reprocessing effort, or from a different source? It's not

clear to me what modeling was applied in the time series from the GPS processing, and whether this had been derived from a PPP or network based solution.

I think it would be also important to give some justification on why you choose to remove the number of harmonics from the time series.

The paper could be improved with some discussion on the applicability of your technique under stationary and non-stationary conditions, and particularly to the autoregressive models, you have restricted your analysis too.

The conclusion of the paper should be re-written, it reads like a discussion presented earlier in the paper and is too verbose.

The work you have put together here effectively highlights that white noise statistics are unreliable and has the potential to lead to the misinterpretation of solutions, such as incorrectly assessing a trend exists.

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2016-385, 2016.