

## ***Interactive comment on “Statistical framework for estimating GNSS bias” by J. Vierinen et.al.***

### **Anonymous Referee #2**

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The manuscript "Statistical framework for estimating GNSS bias" by Vierinen et al., describes an improved statistical method for the evaluation of non-ionospheric differential time delay bias. It proposes an improvement with respect to the existing MAPGPS bias determination algorithm.

General Comments. The manuscript appears well written, with logical structure and description. The discussion, the concepts, equations and results appear sound and consistent with the literature. As such, the manuscript warrants publication. Nevertheless, some minor improvements may be considered by the authors. They are suggested below.

Specific Comments. The major and fundamental assumption at the basis of the new method is to consider the differences between pairs of measurements as Gaussian random variables (e.g. pages 9377, 9379, 9381). It appears clear that such an as-

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sumption makes the problem easily tractable. However, it could be wondered what is the experimental evidence for such an assumption. Probably, some additional text (e.g. a short section) to explain that such an assumption is consistent with the type of measurements would strengthen the concepts described in the manuscript. For example, is the assumption based on the fact that differences between pairs of measurements are dominated by receiver/transmitter thermal noise? or something along this line?

Technical Corrections. Page 9377, line 15: "its use results" => "it results" Page 9379, lines 1-2: "...what we assume the variance of....to be." => "...what we assume to be the variance of...i and i'." Page 9382, line 11: within brackets it says "bold symbol sigma", it seems a formatting problem.

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Interactive comment on Atmos. Meas. Tech. Discuss., 8, 9373, 2015.