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# ***Interactive comment on “Implementation of a quality control for Radio Occultation observations in the presence of large gradients of atmospheric refractivity” by L. Cucurull***

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This paper is interesting because it is treating a subject all too often left aside regarding GPS radio occultation: observation quality controls for NWP assimilation application. This situation is probably explained by the overwhelming amount of literature referring to GPS radio occultation as an all-weather observing system.

1) As very briefly mentioned in parentheses page 10490 around line 17, several papers published earlier have already treated the subject of trying to detect situations where the radio occultation rays may have encountered abnormal propagation, and presented

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quality control procedures as a result. The particularity of the paper at hand is to explore the topic in the NCEP system. In order to better support the originality of this paper, would it be possible to remind to the reader the similar tests published already: for example within a table, listing publication reference and the nature of the tests adopted.

2) The NWP impact of the new quality controls is currently presented for two large-scale metrics (at two pressure levels) in each extratropical region and the tropics. While it is not desirable to flood the reader with many more such diagnostics, and it is appreciated that the author focused the presentation to the relevant parameters, would it be possible to provide a bit more explanations to help understand how this impact is achieved: –How many observations are rejected by the new quality control? –Where are these rejected observations located? A reader familiar with GPS radio occultation would surely appreciate to verify that the GPS radio occultation observation rejections occur in expected geographical and vertical regions for the given experimental season (Northern Hemisphere summer here).

3) Figure 10 does not seem to be commented or referenced in the paper, is this figure needed?

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Interactive comment on Atmos. Meas. Tech. Discuss., 7, 10487, 2014.

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