

## ***Interactive comment on “Long term Observations minus Background monitoring of ground-based microwave radiometer network. Part 1: Brightness Temperatures” by Francesco De Angelis et al.***

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Thanks very much for your positive feedback and constructive suggestions. We really appreciated your input. Let us provide more information on each topic you have raised.

1) 3-hour forecast is used and it is not sure if the model has well spin up after 3 hours. In the future, also for a more global study, ECNWF analysis and forecast would be preferable.

The spin-up time of AROME has been studied thoroughly. For AROME, the spin-up time has been estimated to less than 2 hours, by looking at the time evolution of the root mean square of surface pressure tendency (Brousseau et al. 2008).

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Future work will extend the present prototype study to provide a global perspective, exploiting the output of global models. In this perspective, ECMWF as well as NCEP data have been used as background in a previous O-B study in the retrieval space (Cimini et al., 2010).

2) suggest to include radiometers in other climates and geological locations, e.g. those in American, southern China and Korea/Japan

As suggested, future work will be dedicated to a global study, including additional sites and MWR types selected from the MWRnet members: <http://cetemps.aquila.infn.it/mwrnet/>

3) a longer period of data would be useful for studying the long term behaviour of the radiometers

Extending the O-B study to a longer period is surely useful for studying the long term behaviour of MWR systems. However, following the manufacturers' instructions, MWR systems are calibrated regularly (typically every 6 months, depending on sites). Instrumental drifts should be mitigated by the calibration procedure. In this study we aimed at providing typical O-B statistics that one may expect from MWR and NWP models. Therefore, we deemed one year as a sufficiently long period for the above aim.

References:

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