

## ***Interactive comment on “The new Passive microwave Neural network Precipitation Retrieval (PNPR) algorithm for the cross-track scanning ATMS radiometer: description and verification study over Europe and Africa using GPM and TRMM spaceborne radars” by Paolo Sanò et al.***

**Anonymous Referee #1**

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The paper presents an updated/new version of the H-SAF neural network precipitation retrieval scheme. The paper is informative, describing in detail the formulation and operation of the scheme, and presents some results in order to assess its performance. Overall the paper is well written, although there are a few typographical errors that should be addressed (see below).

P3, L41: ‘Could’ should be ‘Cloud’ P5, L35 and P5, L46: correct the ‘spatial sampling of 1.11’ to ‘sampled every 1.11’ – it is an angular measurement, not spatial. P7, section

C1

3.2: it may be useful to clarify whether the training database was generated using system-specific simulations, or random. This is somewhat critical since is system-specific then the database could have a wet-weather bias. Also, was the PR data used in the database? I presume so, in which case this does explain some of the good performance against the PR later on. P8, L9: while the 183+-7 GHz can be sensitive to the surface, it should be noted that this channel (and neighbouring channels) are essential for near surface precipitation. P10, L23-25: the GPM DPR has the same swath width as the TRMM PR. P11, section 4.2: I didn’t find at any stage a cautionary note that the satellite radars are insensitive to light precipitation - PR is essentially insensitive to rain intensities <0.7 mm/hr, the DPR c. <0.5 mm/hr. P15, L22-23: the correlations mentioned from Kidd et al 2016 are at 15 km resolution – the plotted data is summarized at 1 degree resolution.

Tables/Figures: Table 2: useful to include the spatial resolution in the caption. Figure 1: Are the orientations of the individual boxes the correct way around; I would expect that as latitude extends away from the Equator that the plotted x-dimension of the box would increase compared to the y-dimension. Figure 4/7: Include dates/resolution in the caption – and might be worth considering changing the resolution since the images are currently very noisy. Figure 5/6: Remove the 0.001-0.01 part of the plots (since there is no data in this region!).

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