Earth System
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Data Discussions

**ESSDD**

Interactive
comment

# *Interactive comment on* "A global satellite environmental data record derived from AMSR-E and AMSR2 microwave earth observations" *by* Jinyang Du et al.

**Anonymous Referee #1**

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This ms describes a valuable data product for high temporal resolution land surface dynamics (Land Parameter Data Record; LPDR) constructed from two passive microwave time series (AMSR-E and AMSR2). The variables retrieved include surficial volumetric soil moisture, air temperature at 2 m, precipitable water vapor, fractional open water, and vegetation optical depth (VOD), all retrieved at 25 km resolution for ascending and descending passes.

I have just a few concerns about this well-written ms.

The authors should reconsider labeling the surface air temperature retrievals as the daily Tmax and Tmin. There is no guarantee that these are the diel extrema common to meteorological and climatological usage since there are a limited number observa-

tions per day over much of the land surface. These observations are very valuable particularly in those many parts of the planet where there are few temperature stations or the accessibility to the temperature data is restricted.

The authors have chosen to display the dispersion about mean as standard deviation in units in some maps but as "temporal SD variability (%)" in others. Displaying the temporal variation consistently the percent coefficient of variation (%CV=100*SD/mean) would make it easier to understand relative variation of each retrieved quantity across continents, biomes, and ecoregions.

The authors choose to use the AVHRR GIMMS-3g NDVI dataset to compare with the LPDR VOD data. Why? The MODIS data record (for instance, NBAR at CMG resolution) offers a higher SNR.

Can we see a table of the land area with high QC retrievals by season?

Are the Spearman correlations substantially different from the Pearson correlations?

Can you provide a third digit for the RMSD and bias values in Tables 1, 2, and 4?

How about a specific comment on the odd descending correlation between VOD and NDVI for EBF?

The figures need tuning to improve their accessibility. About 8% of the male population suffers from some degree of difficulty distinguishing red from green (aka color blindness). Figures 1-3, 5-6, 8, and S1-S3 all use red and green together. Consult http://colorbrewer2.org for better colormaps. Figure 1 is too busy. Consider reducing the number of cover classes which should help the color issue. The blue circles are particularly difficult to find against the background.

Perhaps I missed them at the distribution portal, but where are the geospatial metadata for the LPDR that are compliant with either FGDC or ISO standards?

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