

Earth Syst. Sci. Data Discuss., referee comment RC2  
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## Comment on **essd-2021-208**

Hugo Denier van der Gon (Referee)

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Referee comment on "PAPILA dataset: a regional emission inventory of reactive gases for South America based on the combination of local and global information" by Paula Castesana et al., Earth Syst. Sci. Data Discuss.,  
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The paper describes a dataset intended on providing air quality and climate modellers with a complete dataset for South America (SA) by creating a so-called mosaic inventory. This implies using a complete but rather generic global dataset with less granularity than local or national data as a starting point and merging it with more detailed national scale inventories. The result of such a mosaic inventory still provides a complete dataset but with higher granularity and includes more local knowledge thereby providing modellers with a better starting point for their model exercises which can lead to more accurate (scientific) results and analysis. The merged dataset needs to be carefully evaluated and discrepancies explained and documented as a risk is that "apples and oranges" are treated in the same way and the end result can also be confusion. The advantage of the approach as also stressed by the authors is that the dataset can improve over time incorporating more data as they become available and the current PAPILA dataset is not intended nor expected to be the final dataset but a well-documented starting point that can improve over the years. As said such datasets can be an asset for modellers and support / improve regional air quality analysis. The topic is fitting for ESSD and the paper could be published after several clarifications and improvements are made.

Please see the attacehd pdf document with detailed reveiw.

Please also note the supplement to this comment:

<https://essd.copernicus.org/preprints/essd-2021-208/essd-2021-208-RC2-supplement.pdf>