Atmospheric Measurement Techniques Discussions

Atmos. Meas. Tech. Discuss., referee comment RC1
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Comment on amt-2021-348

Anonymous Referee #1

Referee comment on "A kriging-based analysis of cloud liquid water content using CloudSat data" by Jean-Marie Lalande et al., Atmos. Meas. Tech. Discuss., https://doi.org/10.5194/amt-2021-348-RC1, 2022

This article proposed a statistical spatio-temporal kriging-based approach that is able to interpolate/predict from the dataset and provide uncertainties. The topic is of interest to the readership of this journal, this study is well planned, and the mathematics appears correct and keeps at an appropriate level. However, this paper still need to be improved with moderate revisions:

- Kriging methods have been widely used in spatial and temporal interpolation for meteorological elements, in the meantime, many improved kriging methods have been proposed, such as Universal Kriging, Co-Kriging, Disjunctive Kriging and so on. Therefore, this paper should give a brief overview of these improved methods, and highlight the advance of this paper method compared with the existing methods.
- The experimental section is lack of adequate contrast experiments with other existing interpolation methods (especially the representative improved kriging methods).