

# ***Interactive comment on “Subgrid Variations of the Cloud Water and Droplet Number Concentration Over Tropical Ocean: Satellite Observations and Implications for Warm Rain Simulation in Climate Models” by Zhibo Zhang et al.***

## **Anonymous Referee #1**

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Authors derived the subgrid variations of liquid-phase cloud properties over the tropical ocean and investigated the autoconversion enhancement factors using MODIS product. This paper is well written, and of relevance to a broad audience. It is worthy of publication subject to the following issue.

(1) Authors assumed that subgrid variation of LWC could be inferred from the spatial variability of LWP. LWP is the vertical integrated LWC over cloud depth, so its subgrid variations include cloud depth variations. But LWC's variations does not. Please justify this assumption.

Typos: (1) Lines 359 "...any type of data quality-based data ", Should be "...any type of quality-based data".

(2) Lines 396 "...On the hand ", Should be "...On the other hand".

(3) Lines 466-467 "...Figure 6 b derived directly from the observation", Should be "...Figure 6 a derived directly from the observation."

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Discussion paper

