

Dr. Graham Feingold,
Editor
Atmospheric Chemistry and Physics
December 23rd, 2023

Dear Dr. Feingold:

We sincerely appreciate the recommendation to publish our manuscript. In response to the latest feedback, we have made modifications in the revised manuscript to address both comments.

1. We have rewritten the sentence in the introduction to clearly differentiate between pockets of open cells and stratocumulus-to-cumulus transitions in the subtropics. The revised sentence is now as follows:

However, this distinction becomes less apparent in subtropical regions. Here, the formation of pockets of open cells in the absence of significant meteorological changes suggests that the precipitation mechanism plays a predominant role (Savic-Jovicic & Stevens, 2008). Additionally, in the subtropics, the transition from stratocumulus to cumulus is driven by warming SST and weakening subsidence, where drizzle also plays a role. This finding indicates a potential zonal variation in the importance of these influencing factors. Closed MCCs commonly transition into open MCCs and disorganized MCCs in the subtropics. One mechanism driving this transition is advection over warmer water, where drizzle leads to the breakup of closed MCCs into open MCC clouds (Eastman et al., 2022; Yamaguchi et al., 2017).

Furthermore, as you recommended, we have incorporated the reference to Savic-Jovicic & Stevens (2008) in relation to pockets of open cells in the subtropics. Regarding the discussion, we have rewritten the sentences as follows:

In the subtropics, the transition from closed to open MCC clouds is often preceded by strong winds that increase moisture, which leads to more intense drizzle and facilitates the transition (Eastman et al., 2022).

2. We have rewritten the sentence as you recommended

Sincerely,
Francisco Lang