Responses to reviewer 1 of "A cellular automaton model of tropical oceanic rain clusters with criticality" by Cheung, Teo and Koh (egusphere-2026-2469_R1)

The authors have addressed my remarks in a satisfactory manner. I would recommend this manuscript being published.

Responses: We are glad to know that the reviewer considered our responses satisfactory. We thank the reviewer again for the previous suggestions to improve our manuscript.

Responses to reviewer 2 of "A cellular automaton model of tropical oceanic rain clusters with criticality" by Cheung, Teo and Koh (egusphere-2026-2469_R1)

The authors addressed all comments to my satisfaction. I think the quality and clarity of the manuscript has much improved and recommend publication as is.

Responses: We are glad to know that the reviewer considered our responses satisfactory. We thank the reviewer again for the previous suggestions to improve our manuscript.

Responses to reviewer 3 of "A cellular automaton model of tropical oceanic rain clusters with criticality" by Cheung, Teo and Koh (egusphere-2026-2469_R1)

The author did an excellent job in addressing my previous comments. However, some responses are not directly reflected in the revised manuscript. I would strongly suggest the authors to add those response to the context, including my major comment 2 (two time scales), 4 (effects of propagating gravity waves), and 5 （actual model simulations). Overall, I suggest a minor revision.

Responses: Thanks for the recommendation of minor revision and these further suggestions. Accordingly, we have added our responses to the main text.

For comment 2 (two time scales):
"Driving of all the model sites is only resumed after all toppling activities complete, after which all sites become stable again and the system as a whole is in equilibrium. Then the cluster statistics are analysed. As will be seen in the following, such separation of time scales (t and τ) is critical to the rain cluster size distributions simulated in the CA." [end of section 2.1]

For comment 4 (effects of propagating gravity wave):
"Note that in this scheme of gravity wave effect, treatment is site-by-site and thus only near-field effect has been simulated, considering that the grid size in the lattice is around 30 km (as mentioned in section 2.1). As such, the propagation speed of gravity waves has been considered in our model to a certain extent. In reality, convective cells form a cluster and collectively a strong gravity wave may propagate from the convective tower as a whole and influence the far field (i.e., longer range than the next nearest neighbour). We only simulate the near-field effect because that is more in accord SOC models, which generates long-range spatial correlation from

short-range interaction. From another perspective, full-physics simulations in T21 using WRF still generated scaling exponents of cluster area and rain rate with deviations from those observed. Thus, we experiment with idealized, near-field interactions in the CA here." [end of first paragraph, section 2.2]

For comment 5 (actual model simulations):
"After the steps described in section 2.1–2.3, we analyse the cluster area and rain (based on the constraint we imposed) statistics after each radiative time step t, a snapshot has been shown in Fig. C.1 (Appendix C) as an example. The cluster statistics are then used to generate the scaling results in the following." [end of section 2.3]