

Boundary-Layer Control on Convective Self-Aggregation

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The atmosphere can self-organize into overturning circulations over an ocean surface with uniform temperature in cloud-resolving models. The upwelling branch is associated with humid air and deep convection; the downwelling branch is associated with dry air and clear sky. This phenomenon is referred to as convective self-aggregation, and understanding this phenomenon can advance our understanding of the Madden-Julian Oscillation (MJO). In this talk, I will introduce a boundary-layer centric framework for self-aggregation. This framework helps explain what leads to self-aggregation, and what sets the spatial scale of self-aggregation.

Reference:

1. Yang, D., 2018: JAS, <https://doi.org/10.1175/JAS-D-17-0150.1>
2. Yang, D., 2018: JAMES, <https://doi.org/10.1029/2017MS001261>

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