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Observed evidence for a modulation of tropical radiation budget by convective aggregation

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Understanding the role of convective aggregation in climate is identified as one of the grand challenges in atmospheric climate science. As part of an effort to address this issue, we analyzed the organization of deep convection using a long time series of geostationary satellite observations. We characterize the diversity and the variability of convective organizations in data using the recently introduced diagnostic tool called "organization index (Iorg)". Based on this index, we showed how the organization of convection and atmospheric stability complement each other to modulate significant fraction of the monthly inter-annual variance of the net tropical radiation budget.