

Regional variability of MCSs' properties in the global tropics

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Motivation

- Mesoscale Convective Systems (MCSs) are major rain contributors in the tropics with maximum heating in the upper troposphere.
- Play a crucial role in the Hadley cell \bullet circulation and severe weather

Data

Integrated Multi-satellitE Retrieval for GPM (IMERG) precipitation data from 2011 to 2020

Method

 Track MCSs using Forward in Time (FiT) tracking algorithm. Access the tracking animation using your phone camera:







Contrasting convective regimes: MCSs occur more often over Amazon basin and Maritime Continent than over central Africa, which is known to have high frequency of thunderstorms



Africa, Amazon basin, and western Pacific. Most MCSs in equatorial Atlantic and eastern Pacific move westward, whereas over equatorial Indian Ocean and western Pacific the MCSs' motion is greatly affected by monsoon circulations



