

Hydrometeor characteristics of the cloud population during DYNAMO

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The dual-polarimetric S-PolKa radar operated within the context of DYNAMO's radar network, providing information on microphysical properties of precipitating oceanic tropical convection. More specifically, the types and concentrations of hydrometeors are inferred from S-PolKa data, allowing for the relative roles of warm-rain and ice-phase processes to be investigated. The vertical distribution of liquid and ice hydrometeors will be presented, highlighting overall similarities throughout the project and individual, extreme cases, as well as describing the evolution of hydrometeor characteristics as the cloud population changes from convective to dominantly stratiform. This information is crucial for understanding the makeup of the MJO convective cloud population as it evolves through stages dominated sequentially by developing convective cells, deeper and wider convective elements, and mesoscale systems with large stratiform components. Understanding the microphysical changes in the cloud population as it undergoes these stages is critical for determining the interaction with the surrounding environment through tropospheric moistening, heating and radiative feedbacks. Furthermore, this will help guide numerical models used to simulate and forecast the MJO.