



Tracking Tropical Convective Storm Hanii Takahashi

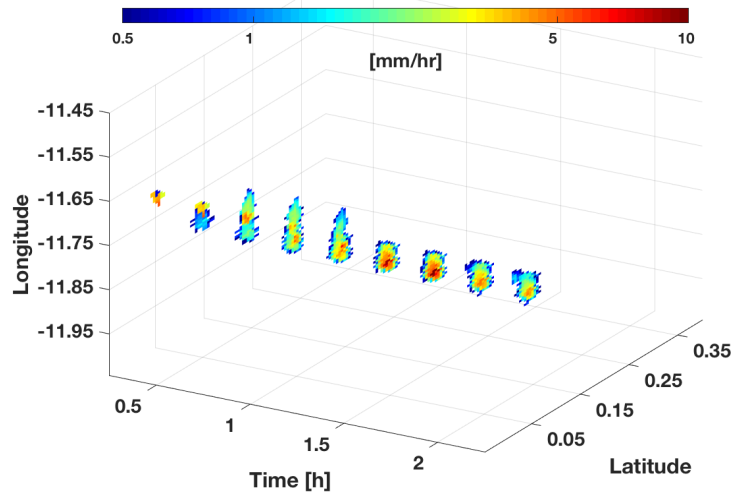


Figure 1. A demonstration of tracking the evolution of precipitation from a precipitation core and its associated precipitation system.

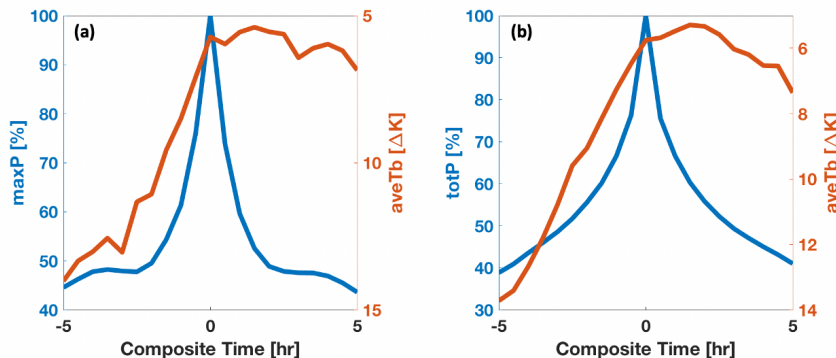


Figure 2. The composite time series of (a) maximum precipitation rate (blue) and average CTT (red), and (d) area total precipitation (blue) and average CTT (red).

Science Question: What is the link between precipitation and cloud top temperature (CTT)?

Data & Results: This paper is the first attempt to document a simple convection tracking method based on the IMERG precipitation product to generate an IMERG-based Convection Tracking (IMERG-CT) dataset (Figure 1). Results show that the signature of stratiform anvils remaining after the storm has produced the maximum rainfall (Figure 2).

Significance: Up to now precipitation datasets have been Eulerian accumulations. Now with IMERG-CT, we can estimate total rainfall based on Lagrangian accumulations, which is a very important step in diagnosing cloud-precipitation process following the evolution of air masses. Our study highlights the importance of joint analysis of cloud and precipitation data in time sequence, which helps elucidate the underlying dynamic processes producing tropical rainfall and its resultant effects on the atmospheric thermodynamics.