Radar analysis of the evolution of trade wind clouds observed during the Rain in Cumulus over the Ocean field experiment

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Example of clouds with multiple shafts:

Example of a cloud with a single shaft:

Concluding Remarks

Clouds showing pulsating updrafts are common during certain days in RICO. Towers emerge from a cloud that has a long lifetime.

The spatial correlation between Z and ZDR follows in time and altitude with the maximum ZDR in the clouds, slightly ahead of maximum Z.

Soon after the clouds reach their maximum Z, Z and ZDR de-correlate spatially.

Implications

Largest raindrops form and fall early in the lifetime of the rainshaft.

The microphysical evolution of the clouds are complicated by pulsed updraft structure ("time zero" not obvious).