Deploying Dual-frequency Profiler Pair in Support of MC3E (0.45 & 2.8 GHz)

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Goal: Use the 920-MHz profiler spectra to mask out the hydrometeor motion in the 50-MHz profiler spectra and estimate the vertical air motion from the residual.
50-MHz Profiler

920-MHz Profiler

Rayleigh Scattering

Bragg Scattering

a. 20 January 2006, 00:00 UTC, 50 MHz Spectra

b. 920 MHz Spectra (Reflectivity Density - dBZ/(m/s))
Comparison
920-MHz Profiler and C-Pol Retrievals

Height = 2 km
Profiler = 1 minute
C-Pol = 10 minute

Profiler retrievals provides reference for scanning radar retrievals
Vertically-pointing 0.45-GHz (449-MHz) and 2.8-GHz profilers
North American Monsoon Experiment (NAME)
July-August 2004
Goal: Use the 2.8-GHz profiler spectra to mask out the hydrometeor motion in the 0.45-GHz profiler spectra and estimate the vertical air motion from the residual.