



Internal Variability and Pattern Identification in Cirrus Cloud Structure

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Cirrus clouds play an important role in the climate system owing to their interwoven microphysical, dynamical and radiative properties. Using 35 GHz millimeter wave radar observations, we study the broadening of the Doppler spectrum and work on the problem of separating the contributions of different physical phenomena within cirrus clouds. Such a separation will allow us to specify how the roles of atmospheric dynamics and microphysics vary with cloud structure during future data analysis. We report some preliminary results on distinguishing various vertical regions in the cloud that apparently are dominated by different physical phenomena. Results from this study, including an investigation of the scaling variability and long-range correlations in the vertical regions of the cloud where the specific different phenomena have been identified, will be presented.