



Characterization of Thunderstorms over the Southern Mediterranean Area Using Concurrent Lightning, Radar and Radiometric Measurements Taken by the TRMM Satellite

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In this study, we analyze the precipitation feature database that has been developed at the University of Utah using concurrent observations of the Lightning Imaging Sensor (LIS), Precipitation Radar (PR), and TRMM Microwave Imager (TMI) instruments onboard the Tropical Rainfall Measuring Mission (TRMM) space observatory for a 3-year period (December 1997 through November 2000), to characterize thunderstorm clouds over the Southern Mediterranean area and to obtain quantitative relationships between microphysical and radiative characteristics and lightning flash rate. This is of great interest for several applications – e.g., for nowcasting of thunderstorms and for introducing lightning observations into mesoscale forecast models.