Lidar Studies on Aerosols Cloud Interactions at a Low Latitude Tropical Station Gadanki, Tirupati, India

S.R RADHAKRISHNAN[1], M.SATYANARAYANA[1], V.KRISHNAKUMAR[1], V.P MAHADEVAN PILLAI[1], K REGHUNATH[2], M VENKATA RATNAM[2], and D RAMAKRISHNA RAO[3]

[1]*Department of Optoelectronics, University of Kerala, Kariavattom, Trivandrum-695 581, Kerala, India*

[2]*National Atmospheric Research Laboratory, Gadanki, Tirupati-517 502, India*

[3]*Geethanjali College of Engineering Technology Cheeryal (V), Keesara (M), R.R. Dist Hyderabad– 501 301*

High altitude cirrus clouds play a major role in the radiative energy budget of the earth's atmospheric system. Aerosol particles can affect earth's climate by acting as cloud condensation nuclei. To understand the influence of aerosol particles on cloud properties it is necessary to understand the aerosol layers and clouds using lidar techniques. Making use of the lidar remote sensing method particulate extinction-to-backscattering ratio (lidar ratio) and particle depolarization ratio one can characterize the role of aerosols on the cloud properties. In the present research study we report the aerosols lidar ratio and cloud depolarization ratio in the lower atmosphere as observed in this low latitude tropical station Gadanki, Tirupati. Effect of various meteorological parameters corresponding to different seasons of the year is also presented.