



LOYOLA-ICAM
COLLEGE OF ENGINEERING AND TECHNOLOGY (LICET)
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Department of Electrical and Electronics Engineering



Report on Visit to National Atmospheric Research Laboratory

Date: 28.06.2019

Audience: III EEE /Batch: 2017 - 2021, Mr. M. Augustine, AP/EEE, Ms. L. Ramya Hyacinth, AP/EEE

A group of 62 students of III EEE accompanied by Mr. M. Augustine, AP/EEE and Ms. L. Ramya Hyacinth, AP/EEE visited NARL on 28.06.2019. This research laboratory is funded by Department of Space, Government of India and involved in carrying out fundamental and applied research in Atmospheric and Space Sciences.

During the visit, we gained an opportunity to visit the MST Radar. The MST radar located at Gadanki is an excellent system used for atmospheric probing in the regions of Mesosphere, Stratosphere and Troposphere (MST) covering up to a height of 100 Km. It is also used for coherent backscatter study of the ionospheric irregularities above 90 km. MST radar is a state-of-the-art instrument capable of providing estimates of atmospheric parameters with very high resolution on a continuous basis, which is essential for the study of different dynamical processes in the atmosphere.

A dual frequency (L1 centred at 1575.42 MHz and L2 centred at 1227.6MHz) GPS receiver make GSV4004B GPS receiver is operational at Gadanki. This receiver is scintillation and TEC monitoring device housed with a low phase noise stable Ovenized Crystal Oscillator (OCXO), and provides true amplitude, single frequency (on L1) carrier phase measurements and TEC measurements from up to 11 GPS satellites in view. It also tracks one SBAS (GAGAN or WAAS) satellite, providing L1 measurements and Scintillation data (but no TEC data).

The Airglow Imager which provide real time information on the spatial scales and direction of propagation of the dynamical variability at mesospheric altitudes (OH and O(1S) emissions) and thermosphere-ionosphere system (O(1D) emission) is being installed at NARL. Usually it is operated on clear sky nights.

This visit helped us to gain a better understanding on various techniques used to monitor the atmosphere and also enriched our understanding in the use of sensors and transducers. To mention, Sensors and transducers is the chosen elective for the current semester.



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