



Physical Research Laboratory, Ahmedabad

COLLOQUIUM - 13 – 32

Speaker: Dr. G. Pandithurai

Indian Institute of Tropical Meteorology, Pune.

Title: Aerosol-cloud interactions: the uncertain component of climate system

Abstract

Aerosol and clouds play the key role in the climate system. Anthropogenic aerosols enhance cloud reflectivity by increasing the number concentration of cloud droplets leading to a cooling effect on climate that is known as the aerosol first indirect effect. The resulting smaller cloud droplets also suppress the collision-coalescence process and thereby inhibit rainfall and enhance cloud lifetime. The fundamental cloud microphysical properties are driven by dynamics; vertical motions and mixing processes between the cloud and its environment determine the concentration of cloud water, a key parameter for both climate and precipitation. However, aerosol particles can significantly affect the microphysics and dynamics of clouds by changing the size distribution of drops, their ability to grow to raindrops, their rates of evaporation, and their mixing with the environment. However, many uncertainties still remain. This colloquium will present an overview of the role of aerosol and clouds in the climate system with emphasis on their interactions. Quantifying the role of aerosol and clouds in the climate system paves the way to the understanding of their impact on the climate change.

The Speaker

Dr. G. Pandithurai received his B.Sc. and M.Sc. in Physics from Madurai Kamaraj and Alagappa Universities. He did his doctoral research work in IITM, Pune and obtained his PhD degree from University of Pune in 1998. He was a post-doctoral fellow in University of Maryland during 1998-2000. He is with IITM since year 2000 and he has been holding various positions at IITM. He is presently working on establishing a High-altitude cloud physics laboratory at Mahabaleshwar in Western Ghats. He received Invitation Fellowship from JSPS and worked at Centre for Environmental Remote Sensing, Chiba University, Japan during 2008-09. He has guided 2 PhD students and 5 M.Sc/M.Tech students. He has published about 60 research papers in peer-reviewed journals.

Wednesday: 18 December, 2013, 16:00 hrs

K.R. Ramanathan Auditorium, PRL

Tea at 15:30 hrs

ALL ARE WELCOME