



South Asian Meteorological Association (SAMA)

and



Birla Institute of Technology, Mesra, India

Jointly Organize

Weekly Online Lecture Series on

Satellite Meteorology

South Asian Meteorological Association (SAMA) is a professional non-profit international scientific society having HQ in India for the promotion of Meteorological and allied sciences and their application for the safety, well-being and sustainable development of the citizens of the South Asian countries. Established on 3rd August 2020, it has more than 550 members from nine countries (Afghanistan, Bangladesh, Bhutan, India, Myanmar, Maldives, Nepal, Pakistan and Sri Lanka), which is increasing day by day.

Birla Institute of Technology (BIT), Mesra is a premier technical institute in India. It was established in 1955. BIT Mesra was founded with a clear vision to offer its young minds a space where their imagination could take wings and their ideas to fruition. For over 6 decades now, the institute has nurtured minds with a rich heritage of academic excellence, developing learning frameworks that have been well ahead of time. Department of Remote Sensing has been at the forefront as postgraduate and R&D in this field. It has good connections with the Department of Space, GoI organizations like SAC, NRSC, ISRO, etc., including participation in their research programs which include footprint on planetary remote sensing as well (e.g. Chandrayan and Mars Orbiter Mission projects). The Department of Space Engineering and Rocketry – the first of its kind in the country, was established in 1964 to train scientists and engineers in the important areas of Aerospace Engineering and Rocket Technologies, before the establishment of ISRO.

Meteorological Satellites have emerged as important observation tools for real-time monitoring of weather phenomena and data inputs for Numerical Weather Prediction (NWP). Satellite data, having a global view, complements land-based systems such as radiosondes, weather radars, and surface observing systems. A combination of Polar Orbiting and Geostationary satellites provides continuous imagery and atmospheric measurements. Meteorological satellites can detect cyclones, thunderstorms, fog, pollution, snow cover, and many more things. With the development of Satellite Meteorology, the impacts of extreme weather/events are minimized. Satellite observations have a huge impact on the NWP model analyses and forecasts. The assimilating of Satellite data in the NWP models reduces model forecast errors by almost half. The advent of Meteorological Satellites became a boon to the data sparse regions over the ocean.

In view of the importance of Satellite Meteorology, SAMA and BIT Mesra are jointly organizing a weekly online lecture series on Satellite Meteorology from 02 Sept 2023 – 20 Jan 2024 every Saturday by experts in the field. Lectures will be delivered by very Senior Scientists, Professors, and experts from reputed institutions of this region. There will also be some practical classes (hands-on training). The lecture modules are targeted to postgraduate students/ research scholars, professionals, and the people of non-meteorological background who are interested in learning the subject.



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Registration Link: <https://tinyurl.com/SatMet>

(Tentative Schedule)

Lecture No.	Date	Time	Speaker	Topic
1	02 Sept 2023	3 - 5 PM IST (UTC + 5:30 hrs)	Dr. R.R. Kelkar (former DG, IMD) and Dr. Raj Kumar (Ex Director, NRSA)	Inaugural Ceremony Lectures 1) Introduction to Meteorological Satellites and their applications 2) A brief history of ISRO space and satellite missions
2	09 Sept 2023	3 - 4 PM IST (UTC + 5:30 hrs) +30min Interaction	R.C. Bhatia	Overview of Satellite Meteorology and its applications (Lecture)
3	16 Sep 2023	3 - 4 PM IST (UTC + 5:30 hrs) +30min Interaction	Dr. Debasish Mitra, IIRS	Fundamental principles of Remote Sensing of atmosphere using Space-based systems (Lecture)
4	23 Sep 2023	3 - 4 PM IST (UTC + 5:30 hrs) +30min Interaction	SAC, Ahmedabad	Fundamental principles of microwave-based remote sensing using meteorological satellites and products available and their applications (Lecture)
5	30 Sep 2023	3 - 4 PM IST (UTC + 5:30 hrs) +30min Interaction	SAC, Ahmedabad	Cloud classification/analysis and air mass studies using observations in different wavelengths bands from Space based observations in VIS/IR/MW spectrum (Lecture)
6	07 Oct 2023	3 - 4 PM IST (UTC + 5:30 hrs) +30min Interaction	Dr. Chinmay Khadke, IMD	Introduction to RGB products of different types and their applications (Lecture)
7	14 Oct 2023	3 - 4 PM IST (UTC + 5:30 hrs) +30min Interaction	SAC, Ahmedabad	Derivation of Geophysical products (AMVs, QPE, OLR, SST, etc.) using meteorological satellite data and their applications

				(Lecture)
8	28 Oct 2023	3 - 4 PM IST (UTC + 5:30 hrs) +30min Interaction	SAC, Ahmedabad Part-I	Brief theoretical aspects of atmospheric IR / MW Soundings products from satellites, products available, and their applications, with special emphasis on the state-of-the-art hyperspectral soundings (Lecture)
9	04 Nov 2023	3 - 4 PM IST (UTC + 5:30 hrs) +30min Interaction	Dr. B. Simon, Part-II	IR / Soundings products from satellites, and their applications (Lecture)
10	11 Nov 2023	3 - 5 PM IST (UTC + 5:30 hrs) +30min Interaction	Dr. Ashim Mitra, IMD Part-I	Capabilities of currently operational Indian Geostationary Satellites i.e., INSAT series, various products available and their applications. Use of RAPID scan images from INSAT-3DR for meteorological applications (Lecture)
11	18 Nov 2023	3 - 4 PM IST (UTC + 5:30 hrs) +30min Interaction	Dr. Ashim Mitra, IMD Part-II	Capabilities of currently operational Indian Geostationary Satellites i.e., INSAT series, various products available and their applications. Use of RAPID scan images from INSAT-3DR for meteorological applications (Hands-On: 1)
12	25 Nov 2023	3 - 4 PM IST (UTC + 5:30 hrs) +30min Interaction	Dr. Ashim Mitra, IMD Part-III	Capabilities of currently operational Indian Geostationary Satellites i.e., INSAT series, various products available and their applications. Use of RAPID scan images from INSAT-3DR for meteorological applications (Hands-on: 2)
13	02 Dec 2023	3 - 4 PM IST (UTC + 5:30 hrs) +30min Interaction	Mr. R.C. Bhatia Part-I	Important features seen in satellite pictures and derived products in different seasons highlighting specific cases where these have been found to be useful during real-time operational work (Lecture)
14	09 Dec 2023	3 - 4 PM IST (UTC + 5:30 hrs) +30min Interaction	Mr. R.C. Bhatia Part-II	Important features seen in satellite pictures and derived products in different seasons highlighting specific cases where these have been found to be useful during real-time operational work. (Lecture)
15	16 Dec 2023	3 - 4 PM IST (UTC + 5:30 hrs) +30min Interaction	IMD	Analysis of Tropical Cyclones using satellite observations and derived products giving specific examples of applications in real-time forecasting (Lecture)

16	23 Dec 2023	3 - 4 PM IST (UTC + 5:30 hrs) +30min Interaction	IMD	Analysis of Tropical Cyclones using satellite observations and derived products giving specific examples of applications in real-time forecasting (Hands-on)
17	30 Dec 2023	3 - 4 PM IST (UTC + 5:30 hrs) +30min Interaction	Dr. B. Simon	Applications of satellite data for Mesoscale systems studies (Lecture)
18	06 Jan 2024	3 - 4 PM IST (UTC + 5:30 hrs) +30min Interaction	Dr. Vinod Bothale, SAC and NRSC <i>Part-I</i>	Present and future meteorological satellites and their products availability from BHUVAN/NRSC and MOSDAC/SAC and their applications in real-time weather monitoring and prediction (Hands-on)
19	13 Jan 2024	3 - 4 PM IST (UTC + 5:30 hrs) +30min Interaction	Dr. Vinod Bothale, SAC and NRSC <i>Part-II</i>	Present and future meteorological satellites and their products availability from BHUVAN/NRSC and MOSDAC/SAC and their applications in real-time weather monitoring and prediction. (Hands-on)
20	20 Jan 2024	3 - 4 PM IST (UTC + 5:30 hrs) +30min Interaction	NRSC	Use of satellite data for climate services. (Lecture)