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TROPMET-2018

National Symposium on Understanding Weather and Climate Variability : Research for Society

24 to 27 October, 2018
Banaras Hindu University, Varanasi, Uttar Pradesh

Organised by
INDIAN METEOROLOGICAL SOCIETY

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डॉ. एम. राजीवन
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MESSAGE

In the changing climate scenario, the demand for weather and climate services by the society has increased many folds. This is because many production systems in different areas of technology want to explicitly account for weather/climate-based vulnerabilities in their planning strategy. Climate change is going to have adverse impacts over many parts of the globe with developing country like India will be impacted more compared to other regions. In this scenario the vast populations of India will have challenging task ahead.

I am glad to learn that the Indian Meteorological Society (IMS) is organizing its national conference (TROPMET series) on "Understanding Weather and Climate Variability: Research for Society" during 24 to 27 October, 2018 at Banaras Hindu University, Varanasi, Uttar Pradesh.

This TROPMET-2018 conference is being organised with focus on weather, climate, climate change and variability which includes the extreme weather events and their long term impact on climate. Today, floods, droughts, heat waves, dust storms, heavy precipitation are becoming more frequent as a result of climate change. Such extreme weather events are considered as most destructive both economically and socially accounting for about 90% of people affected by natural disasters. These weather events need constant monitoring so as to reduce their potential impacts on society. Since observational stations are not available at every spatial point of interest, modelling efforts are required to help assess the situation. Also, process studies are essential to understand the phenomena to a greater depth. Keeping these facts in mind, TROPMET-2018 will make efforts to bring together climate change scientists, local government bodies, academics and early warning services to discuss and share information for the benefit of the society.

I am confident that the national conference "TROPMET-2018 will provide a common platform to the academicians, scientists and industrialists, and help in drawing purposeful recommendations on the issues of climate change and coastal vulnerability.

I convey my best wishes for the success of this conference.

(M. Rajeevan)

प्रो० राकेश भटनागर
कुलपति

Prof. Rakesh Bhatnagar Ph.D.
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11th October, 2018

It is a matter of great pleasure to know that Banaras Hindu University has been chosen by Indian Meteorological Society to host the General Body Meeting of the Society. Also that National Symposium on '**Understanding Weather and Climate Variability: Research for Society**' is being organized by the Department of Geophysics, Institute of Science, BHU in association with the Indian Meteorological Society during October 24-27, 2018. the Department of Geophysics.

I expect that a large number of delegates across the country besides scholars from various institutions will participate in the conference. I found that the topic is very relevant one and apt for the general public, apart from the researchers, scientists and academicians alike. I believe that the symposium will provide a platform to the researchers to interact with the experts of the field to discuss and share their views on the various significant issues like weather, climate, spatial and temporal variability of the climate, possible future change of the climatic features due to, small or higher-level, anthropogenic activities and the implications of the change of environment on various aspects of the society. I hope that all the participants will be benefited by the discussions and deliberations of the symposium.

I, on behalf of Banaras Hindu University, extend hearty welcome to all the participants and wish the organizers for a very successful and happening symposium.


(Rakesh Bhatnagar)

डॉ. के. जे. रमेश

मौसम विज्ञान विभाग के महानिदेशक
एवं

विश्व मौसम विज्ञान संगठन में भारत के स्थाई प्रतिनिधि
एवं कार्यकारी परिषद के सदस्य

Dr. K. J. Ramesh

Director General of Meteorology &
Permanent Representative of India with W.M.O.
and Member Executive Council of W.M.O.



भारत सरकार
पृथ्वी विज्ञान मंत्रालय
भारत मौसम विज्ञान विभाग
मौसम भवन, लोदी रोड़
नई दिल्ली-110003

Government of India
Ministry of Earth Sciences
India Meteorological Department
Mausam Bhawan, Lodi Road
New Delhi - 110003

Message

It gives me immense pleasure to know that Indian Meteorological Society (IMS) is organizing its National Symposium on Tropical Meteorology (TROPMET) with special focus on **“Understanding Weather and Climate Variability: Research for Society”** at Banaras Hindu University, Varanasi during 24 to 27 October, 2018.

Recently, India Meteorological Department (IMD), Ministry of Earth Sciences (MoES) has taken major steps in improving the weather, climate and hazards warning services capabilities in the country. With the improvement in observational and forecasting tools including augmentation of NWP Models, Radar network and satellite products, forecasting/warning services in respect of tropical cyclones, severe thunderstorms, now casting, flash/urban floods, urban climate, climate change, heavy rainfall, advisories to farmers, pilgrimage forecast, heat waves/cold wave etc has been further strengthened. Scientists of IMD in collaboration with other institutes of MoES are working strenuously in providing better weather and climate services to all users by further augmenting modeling and observational network.

The TROPMET-2018 organized by IMS will provide an excellent opportunity for interaction among weather scientists and academician and to discuss different aspect of weather and climate forecasts and its benefit to the society

I wish the event a grand success.


(K. J. Ramesh)

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Varanasi

From Ancient to Modern Times and Places of Interest

K.N.Prudhvi Raju
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There are very many eulogies by many, from outside and within, on Varanasi and that of Mark Twain- "Banaras is older than history, older than tradition, older even than legend and looks twice as old as all of them put together" - sums them up all in a nutshell. Now, nobody should mind the claim that when Rome was being built, Varanasi was already an old city, a flourishing centre of trade, culture, religion, philosophy and learning. Cultures have come and gone. Cities were built and disappeared. But, Varanasi is ageless in its existence, continues to exist and would exist forever.

Varanasi, situated on the left crescent bank of holy river Ganga, is centered at 25° 18' N Latitude and 82° 59' E Longitude with an areal spread of about 80sq. km. and a population of about 1.2 million in 2001. Varanasi, the veritable religious and cultural capital of India, has a long and continuous history since 1500 BC and finds a mention in Atharva Veda and in the Epics and most of the Puranas.

Though the present city of Varanasi spreads far and wide away from the banks of Ganga, still, its core is over the linear natural levee, often referred to as ridge, along the banks of Ganga. As is the case with the presence of a prominent natural levee, the topography slopes towards and away from the Ganga from over the rounded crest of this ridge and mixes up with the general floodplain of fertile alluvium of about 1500-2000 meters thickness. Based on fossil evidences the older alluvium at the bottom is dated to be of Mid-Pleistocene and the newer alluvium of Upper Pleistocene to Recent. Archaeological excavations at Rajghat (near the Malaviya bridge on river Ganga over which NH2 passes) conducted by the Banaras Hindu University under the direction of Prof. A.K. Narain, have brought to light an uninterrupted culture sequence from the beginning of 1000 BC. The same excavation has found an enormous clay rampart dating back to 7-8th century BC, sloping towards river Ganga.

The city area stands at heights between 71m and 80m above mean sea level. Climate-wise, it enjoys three seasons, rainy season, dry cold winter and hot dry summer. The highest temperature can exceed 45°C and lowest could go down to 2-3°C. Annual average rainfall is at 1000mm.

The city of Varanasi is known by various names. Two names, Kashi or Kashiपुरi and Varanasi find mention and were in usage from early times, down to Puranic times to the present. In Buddhist literature, it is referred to as Banaras. Britishers spelled Banaras in their own way as Benaras, Bunarus and Benaras. During Muslim and British rule, it is called by the name Banaras. Even today, Banaras is used as much as Kashi and Varanasi, though officially the city carries the name Varanasi.

The word Kashi means, 'concentrated cosmic energy or a beam of light from the sky'. Name Kashi found a mention in the Atharva Veda. Kashi is a city of light(s), the light that dispel darkness, (knowledge/learning that dispels ignorance). An ancient text eulogies Kashi thus, 'it shines and illumines the universe'. There was a suggestion that the name Kashi might have been derived from the Kusa and Kasa grasses, which grow abundant, even today, in this area. It is also possible a local tribe, Kashi, might have given their name to this area. The area confined within Panchakroshi Marg marks *kshetra* of Kashi. As it is the *kshetra* of king Kasha, it is known as Kashi. Ancient texts and references in Purans, mention about Varanasi being ruled by Kasha dynasty for over thirty generations before Mahabharata war. The Jatakas tell

about Brahmadattas, ruling over Kashi prior to Buddha period. In Buddhist Jataka tales, Kashi finds a mention as the kingdom with Varanasi as its capital. The city lying between rivers Varana and Asi is Varanasi. Now, small streams, Varuna in the north and Asi on the south of the city join river Ganga. River Varuna is the daughter of Varun, the rain God, known also by the name Varuna. Asi, means 'settled or situated'. So is the name Varanasi, city settled/situated on the bank of Varuna/Ganga.

As Jataka tales tell, Kashi and Kosala were immediate neighbors, and sometime during 6th century BC, Kashi fell into the hands of Kosala king Mahakosala, father of Prasenjit. Prasenjit's sister was married to Bimbisara of Magadha. After Prasenjit, Kashi was included in the kingdoms of Nandas, Mauryas, Sungas and Kanvas and by 1st century BC had come within the realm of Kausambi ruled by Kushana dynasty. Their after it had gone into the hands of Naga-Bhairvas, with one of them performing 'Dashashwamedha' on the bank of Ganga, the place now is known as DashashwamedhGhat. By 4th century AD, Kashi had come under the rule of Magadh empire under Guptas and flourished as a center of trade, learning, religion and culture. Further, for a short periods, Kashi had been ruled by Maukharis, Harsha and Yashovarman of Kannauj. Later, LalitadityaMuktapada of Kashmir won over Kashi. Muktapada's coins were discovered from Rajghat. Later on, Varanasi changed hands from Ayudha kings of Kannauj to Pratiharas, the Palas and the Rashtrakutas. Finally, after the fall of Pratiharas, Kashi had come under the rule of Chedis and it was then in 1013AD, Ahmed Nialtgin plundered Kashi for the first time. It had a brief time of glory during the rule of Ghadavala empire. In the region of Jayachandra, Varanasi was attacked and plundered by Kutb-Din-Aibak, the general of Mahmud Ghori in 1114 AD and Hindu rule over Varanasi came to an end.

During 13th and 14th centuries Turko-Afghan rulers called it Banaras and Aurangeb even named it Muhammadabad. Around these times it had almost completely been destroyed (and much of what we see today had been the result of religious-minded Marathas during mid-18th century). In the 15th century, it was ruled by the Sharuqui kings from their capital at Jaunpur. From Sharuquis, it passed to the Lodis, Suris and then the Mughals. The Mughals ruled over it till 1725, when Mansaram, the founder of the present ruling family of Varanasi got the management of Banaras Zamindari from the Nawab of Awadh. Balwant, his successor rebelled against the Nawab and Banaras became independent. There was a tussle between Chet Singh, the successor of Balwant and Warren Hastings, the Governor-General of India and by 1794, the city came under British administration and rulers of Banaras of the lineage of Mansaram remained only as nominal Rajas under British rule. After independence of India, when Banaras again became Varanasi, the State of Banaras was merged with Uttar Pradesh, and Maharaja of Banaras State became an honored citizen of Varanasi.

Kashi, the ancient Varanasi, from Vedic times continued to exist and is called the oldest living city of our civilization. In the sense of its internal existence, it is referred to as 'Avimukta' – *never forsaken*; the mythological lore has it that Sun implored Shiva to dwell in the city forever. Kashi is a city of Shiva. Lord Shiva never forsakes it. Kashi is also known as Anandavana — *Forest of Bliss*, where Shiva Lingas arise out of sheer bliss in the midst of the sprouts from seeds. Kashi is 'Mahashmashanam' where the five elements - *Panchbhutas*- manifested in various forms and bodies will finally return back and mix up with the Panchbhutas here. That is why, Hindus attach great importance of Varanasi as it is Papanasini - *that which absolves sin* - and Mokshadayini - *that which gives liberation to the soul*. Adi Shankaracharya called Kashi as Dhanyatma-Vimukti-Nagari (*the blissful city of salvation*).

Varanasi, since ancient times, developed into a great seat of learning and culture. Sometime in the history (around 7-8th centuries BC), it was known as 'Brahmavardhan' - *seat of knowledge and learning*. In long line of kings, it was ruled by, Dhanwantari, the father of Indian medicine, is one of its kings. Sushruta,

father of Indian Surgery got his education at Kashi. Like today, it had been multi-religious and multi-cultural city since early times. It took within its benign confines not only Hindus, but also Jains, Buddhists, Sikhs, Muslims, etc. Winds from different directions blew towards it. Some times in the 7th century AD, Chinese Buddhist pilgrim Huan-tsang visited Varanasi, and, Adi Sankaracharya arrived here and revived and re-invigorated the Hindu religious and Vedantic thought; Vallabhacharya spent most of his twilight years in Varanasi. The practical poet saint Kabir and his Guru Ramananda lived here. This is a place where self-less and epic poet Tulsidas was born and had given us the immortal master-piece epic poem 'Ramacharitamanas'. Darashikoh, Shahjahan's son came here and learned Sanskrit and studied Upnishads and got them translated into Persian.

Not only as a center of learning, religion, philosophy, but also as a center of art, crafts, trade and commerce, the city of Kashi was famous from very ancient times. It served as a central hub of important trade routes between Takshasila – Indraprastha-Mathura and kingdoms of east. Kashi was famous then and is famous even now for its soft and thin (cotton and silk) cloth, for its perfumes and ointments. It was, and is, famous for pottery and ivory work.

Being the holiest city of Hinduism and being the place, from where Gautam Buddha gave his first Sermon (at around 528 BC), and where (at Sarnath) King Ashoka built a grand monastery (around 3rd century AD), the well- preserved ruins of which stand exposed even today, the figure of international and domestic tourist and pilgrim inflow stands over and above 30 lakhs a year.

The river front of Varanasi offers a spectacle to behold and be blessed. About seven kilometers of the river bank (on and beyond which the city is situated) is paved and lined with stone steps (ghats). Probably, no other riverfront is lined by such stones steps for so long a distance. Temple spires and dwellings low and high appear as if they have sprouted from these stone steps and appear as if they are rising up in continuity. Though the ghats are a continuous line, different stretches are christened with deferent names and 84 such names can be read and recognized all along this distance of seven kilometers. Several daily, annual and festival rituals and religious ceremonies are associated with these ghats. Some of the most important ghats are DasashwamedhGhat, Harishchandra Ghat, PanchagangaGhat, AssiGhat, and one of the most famous, ManikarnikaGhat, where hindus are burnt after death, in order to get salvation.

Varanasi is a city of temple and Shiva-lingas. There are about 2000 temples spread through-out the city and most of the important temples are located along the ghats of the Ganga river. Of course, the most important temple of Kashi is that of God Vishwanath. The other important temples are Sankat-Mochan Temple, Tulsi-Manas-Mandir, Durga-Mandir, Kalabhairava Temple and Maha-Mrityunjay Mandir.

The sacred space of Varanasi is dotted with sacred kunds (tanks/ponds) mostly within the temple complexes or just away from the Ganga bank. These kunds, connected with religious rituals, have tremendous historical and religious significance. Many kunds, which existed till about 1822, the time when James Prinsep made a map of them, have disappeared due to encroachment. Some of the important kunds are LoharKund, Durga Kund and PitruKund.

Varanasi have five sacred territories or Khandas, and each Khanda has a sacred circumambulatory (yatra) path associated with it. These sacred yatra circuits are: Chaurasikosi yatra, Panchkoshi yatra, Nagar Pradakshina, Avimukta Yatra and Antargraha Yatra.

Varanasi is a great seat of learning. The past glory of education and erudition of Varanasi is being kept alive by Banaras Hindu University founded by Mahamana Pt. Madan Mohan Malaviyaji. Other

universities and educational institutions of eminence keeping up the lights of learning in Varanasi are Mahatma Gandhi Kashi Vidyapeeth, Sampurnanand Sanskrit University, Central Institute of Higher Tibetan Studies, the Parshvanath Jain Institute and Darullam University.

There are two other important places to visit around Varanasi. They are Sarnath and Ramnagar. Sarnath, located about 10km from the city of Varanasi center, is an important Buddhist holy place. It is one of the four holiest places of Buddhist pilgrimage in India. A museum at Sarnath housing a great collection of archaeological remains of Buddhist Monastery (built by King Ashoka) is worth visiting. The magnificent Lion Capital, which today is the official symbol of our country, is a center piece of attraction in the museum. The 17th century Fort at Ramnagar on the other side of Ganga, which is still in use by the Maharaja of Banaras, houses a museum displaying many items from Royal collection.

Welcome to Varanasi, the city of light, learning and salvation.

Mahamana and Banaras Hindu University

A. P. Mishra

Professor, Department of Geography, Banaras Hindu University, Varanasi

Mahamana Pandit Madan Mohan Malaviya and Banaras Hindu University are like Juno's swans-inseparable. In the past, present and future, there is no Banaras Hindu University without Mahamana. Though many great people have joined their hands with Mahamana in setting up this great university, it is the result of initiation, resolve and efforts of a single man, the Mahamana.

Banaras Hindu University is a result of a long thought-out process that started after the aftermath of defeat in our first war of Independence from the yoke of British rule. Here is a brief background that ultimately led to the establishment of this great seat of nationalist thought and learning. The year 1857 was the turning point in the modern history of India. It was the time when the people of India - from kings to commoners, 'raja se rank tak' - untidily fought against the rule of British Imperialism. This was also a time of great communal integration and mass upsurge in Indian sub-continent. During colonial rule and exploitation, peasants were deprived and compelled to live in harsh conditions of poverty and hunger. Under such conditions the first Independence war of India was waged and, it may be noted here that, a new social political and economic consciousness has dawned upon the country and its masses. In such a historical time, just four years after 1857, Mahamana Pandit Madan Mohan Malaviyaji was born on 25th December 1861 at Prayag in a family of modest means. He grew up in a social milieu largely influenced by the Independence. In his student days itself, Malaviyaji had come into contact with the emerging 'intellectual discourse' on the nation building processes. In 1878, Malaviyaji had come into contact with the emerging intellectual discourse' on the nation, Pandit Aditya Ram Bhattacharya, Professor of Sanskrit, and an eminent scholar of ancient Indian in 'institutions', who ultimately became his Mentor. The young Malaviyaji has had his education in an era when the people of India were facing challenges posed by British rule in the aftermath of defeat of the first war of Independence, and it was time when a thought process 'vicharmanthan' on nation building had started in the minds of men of learning. In fact, way back in 1835 itself, British rulers wanted to create a class of persons, Indian in blood and color, but English in taste, in opinion, in moral and in intellect. British rulers achieved this objective. Macaulay model of education, started making efforts to develop alternative educational institutions. Such attempts have led to the establishment of social reforms organization by Pandit Aditya Ram Bhattacharya and naturally, Pandit Malaviyaji, who was just an undergraduate at that time, become a member of it. Further,

At the same time, however, Swami Dayanand Saraswati had established Arya Samaj in the year 1875 in order to spread nationalist spirit among the countrymen. Such social movements and organizations have had a great influence on young Malaviyaji's personality and thought process. During those days a national renaissance was taking place in social, educational, cultural, religious and political spheres of lives in India. Malaviyaji very well understood the path of his future and delivered lectures expounding his ideas at various public places. Raja Rampal Singh was very much impressed by Malaviyaji and pressed him to accept the editorial of 'Hindustan' the leading daily newspaper at that time. Malviyaji carried forward 'Hindustan' so ably for the period of three year that it established his fame as a great thinker. In 1910, Malviyaji, on the bank of Triveni, firmly resolved to dedicate his life for the cause of service to motherland by establishing educational institutions to counter the British education system. He created a strong movement for indigenous education in India and got wider support from every strata of society. His firm resolution and efforts resulted in this grand edifice that is Banaras Hindu University.

To realize his dream, Malaviyaji started a campaign for fund collection. His campaign turned into a big movement for revival of the great Indian Nation and restoration of its pristine glory through an education system for the purpose of developing national spirit which was the foremost and pressing need of the country at that time, for placing at the service of the nation's efficient young men of high moral character, filled with patriotism and qualified to promote Indian industries, for reorganizing society and to promote righteousness and love for the motherland. Being a prominent congress leader by that time, Malviyaji proposed the idea of 'Hindu University' before the Congress Session, which was held in Banaras in 1905. The proposed concept of university was discussed in the meeting in a very detailed way by prominent leaders in the Town Hall of Banaras on the last day of 1905. The prospectus of proposed university said, "promotion of scientific, technical and artistic education, combined with religious institution and classical culture". It is pertinent to mention here that. in 1909, when Malaviyaji was elected as Congress President at Lahore, Gandhiji sent a message from Transwal, Africa which reads, "it (the proposed university) is the only weapon suited to the genius of our people and our land, which is the nursery of the most ancient religions and has very little to learn from the modern civilization."

In the context of need for modern education and economic development of our country, it is necessary to point out the observation of Raja Rampal Singh, as Chairman of the Committee of Education Conference, held in Lucknow on 18 January 1916, who mentioned "it was necessary for the country to embrace British education, in technical, industrial and agricultural education, we are still in our infancy. No economic development can take place without these lucrative branches of learning. There was a time when knowledge was sought for its own sake at the hands of Rishis of antiquity, but those day are no longer existing. In these days, when economic struggle is going on world over amongst its nations for supremacy, no education can be thought important in its effectiveness which has not a commercial value." Malviyaji himself was very much convinced and wanted to devote full time for the cause a modern national university and used his energies to bring around the people into a discourse on suitable model of education and construction of Banaras Hindu University. He involved a cross-section of people of India in the establishment of this great university. The Royalties, Principalities, Zamindaris and even commoners from all corners of India, contributed in cash and kind, in erecting this great edifice of education. Just after a few days after the observation of Raja Rampal Singh, on 4 February 1916, the foundation stone for Banaras Hindu University was laid and it started functioning from 1st October 1917 with the Central Hindu College, founded by Annie Beasant as its first constituent college. The University's objectives were laid thus (i) To promote the study of the Hindu Shastras and of Sanskrit literature as means of preserving and popularizing the best thought and culture of the Hindus and all that was good and great, (ii) To promote "learning and research in arts and science in all branches, (iii) To advance and diffuse such scientific, technical and professional knowledge as is best calculated to help in promoting indigenous industries and in developing the material resources of the country and (iv) To promote building up of character in youth, by making religion and ethics an integral part of education.

In true sense the construction of Banaras Hindu University was an effort to develop knowledge as a bridge between the wisdom of east and west. It is pertinent to state the observations of Leah Renold "here jyotish (Astrology), for example, was taught in traditional way but efforts were made to combine the study with that of modern astronomy. Banaras Hindu University was the first to try to integrate the teaching of ayurvedic medicine with principles of modern medicine. Anatomy and physiology were taught according to western models". Before the coming up of Banaras Hindu University, there were only a few institutions in the country, where students received instruction in the Hindu religion. The government institutions followed a policy of neutrality in matters religion and did not consider it their duty to inculcate love of India and of service to motherland in the minds of youth of the country. So, the first and foremost urge towards the

foundation of Banaras Hindu University was laid with a feeling and sense of Dharma and Deshbhakti (Religion and Patriotism). Revolutionary changes have take place in the world during the early time of the functioning of Banaras Hindu University. The evolution of Soviet Union worked as a catalyst for national liberation movements in third world countries under colonial rule and Banaras Hindu University became not only a symbol of third world nations, but also a symbol of national pride and always tried to incorporate the modern and rational thoughts necessary for national integration and advancement. It generated and spread the idea of hope of freedom from colonial rule especially for the countries of Asia and Africa.

The Banaras Hindu University came into existence through an Act by the Parliament on 1st April 1916. Sir Sunder Lal, an eminent jurist and Secretary of Hindu University Society, was appointed as First Vice-Chancellor. A land of about 1300 acres was acquired through the mighty magnificence of Maharaja of Banaras, His Highness Shri PrabhuNarain Singh, and a unique layout plan was prepared. The construction of road and building began in 1919. The Central Hindu College became the first constituent college of Banaras Hindu University - on 1st October 1917, followed by several colleges in the campus-College of Oriental Learning and Theology (July 1918), the Teachers Training College (August 1918), and Engineering College (August 1919). Later the construction of building of Arts College, the Physics Laboratory, the Chemical Laboratory, the Power House, several workshops of Engineering College, Ruiya, Birla and Broacha Hostel and some residential quarters were completed by 1921. These additions were formally opened by the Prince of Wales in December 1921. In a short period, course in Geology, Mining, Metallurgy and Industrial Chemistry were started. The Law College was established in 1923, Ayurvedic College in 1924, and the Women's College (MahilaMahavidhyalay) in 1928. Within a very short period of 16 years, the University had established well-equipped 32 departments. In 1935, a separate College of Science was constituted with internationally reputed departments of Physics, Chemistry, Botany, Zoology, Pharmaceutical and Industrial Chemistry and Ceramics. A new department of Glass Technology was added to it 1937 and a separate degree course in Pharmacy was started in 1938.

Malaviyaji took over the reins of the university as Vice Chancellor in year 1919 after Dr. P. S. ShivaswamiAiyer. During his tenure, many eminent personalities were invited to teach in the university and most of them taught with love and passion and took only subsistence salaries much below their marked value. Later Dr. Sarvapalli Radhakrishna, succeeded Malaviyaji as Vice Chancellor in 1939. It served not only as centre of learning, but also served as epicenter of national movement, which gave ideological support to freedom struggle. Many eminent persons have run this university as Vice Chancellors since its beginning. Scientific and technological education in this university contributed skilled human resource for economic development of our country. Many prominent leaders, journalists, literary figures, scientists, technocrats, etc., produced by this university, played a profound role in different spheres of national development especially after independence.

The name of Banaras Engineering College (BENCO) became a prestigious name among the policy makers of India. Banaras Hindu University contributed man-power to the countries power sector, oil sector, industrial sector and most of public sector institutions of India. The premium institutions like ONGC, CSIR, ICAR, BARC, BHEL, etc., have been strengthened by trained people from this university. Prior to BHU's BENCO, there was only one engineering college at Roorkee in this region of the country, where only Civil Engineering was taught to fulfill the requirements of civil engineers of colonial powers to build infrastructure to facilitate quick exploitation and movement of resources, but, BENCO offered a variety of courses and the engineers coming out of BENCO have contributed a lot in almost all the industries, especially, steel, coal, minerals, energy, railways, hydro-electric power, etc. and in the development of technological, scientific, medical agricultural institutions. It is pertinent to quote a few names of stalwarts of

people, who have been products of this great university. They are: A. K. Dasgupta, Ashok Mitra, D. D. Kosambi, A. S. Alteka, Vasudev Sharan Agrawal, Mukut Bihari Lal, G. P. Unniyal, Chandradhar Sharma Guleri, Acharya Ram Chandra Shukla, Hazari Prasad Dwivedi, Shiv Mangal Singh Suman, Namwar Singh, Acharya J. B. Kriplani, SuchetaKriplani, Raj Narain, B. P. Koirala, Rajeswar Rao, Raja Shekhar Redy, Nagabhushan Patnaik, D. K. Barua, Jagjivan Ram, Chandrajit Yadav, Ram Dhan, Govindaharya, Rustom Satin, Jagdish Shukla, V. S. Gaur, Guru Golwalker, C. N. R. Rao, U. R. Rao, V. Narlikar, Jayant Narlikar, and the list continues.

During recent developments, Banaras Hindu University has developed a land of about 2,800 acres at Barkachcha Kalan, situated about 8 km. southeast of Mirzapur town (about 80 km from Varanasi). Professor Punjab Singh, Vice Chancellor of Banaras Hindu University during 2005-08, has revitalized the activities there with the starting of South Campus of Banaras Hindu University, which is named after Rajeev Gandhi, the Late Prime Minister of our country. It is now known as Rajeev Gandhi South Campus. The persevering efforts of Prof. Punjab Singh are really laudable in starting this campus. Taking a leaf out of the life of Malaviyaji, he roped in the local people, alumni, several industrialists, the Ministry of Human Resource Development and UGC, to start this campus and the area, which was a desolate place till about 2006 is now bustling with academic activities. The south campus is now running a number of courses, including computer science, environmental science, agriculture science, veterenary science, to name a few.

Though their sincere and dedicated efforts, following Vice-Chancellors of Banaras Hindu University, has brought grants to establish many more institutions, and upgraded others. New inclusion include the Institute of Environment and Sustainable Development (IESD), and upgration has been in favour of Institute of Science, and Institute of Management Science. IESD is working in the field of global change and atmospheric pollution, natural resource management, sustainable agriculture, alternate energy resources and socio-economic and legal dimension of sustainable development. During the subsequent years, administration of Banaras Hindu University has taken initiatives to make the campus more eco-friendly, to harvest roof top water, to safe disposal of campus waste, to establish a UNESCO Chair of Peace Education, to start a PG course on 'Peace and Development' and to start an Advanced Centre of Ayurveda, Yoga and Meditation, apart from exponential development in medical care of the society, in the form of Trauma Center, Multispeciality Hospital, Cancer Hospital, Regional Institute of Ophthalmology, and upgradation of existing medical institute into an institute of eminence, at par with AIIMS. During this phase, however, the original BENCO, which turned into Institute of Technology-Banaras Hindu University during late sixtees, become autonomous body and turned into Indian Institute of Technology (IIT-BHU).

There are many more accolades are here planned in near future, to make Banaras Hindu University as one of the most desired destination for education and learning.

Department of Geophysics: An introduction

N. P. Singh

Professor and Head, Department of Geophysics, Banaras Hindu University, Varanasi

Banaras Hindu University, the Kaasi Hindu Viswavidyalaya, is a wider version of Central Hindu College, founded by the legendary Mahamana Pandit Madan Mohan Malaviya Ji in 1916, in Varanasi, with close cooperation of Dr. Annie Besant, and others, who viewed this university as the University of India. The University has been a center of activities during independence movement on the country, and developed into the greatest center of learning. Many freedom fighters, scholars, artists, scientists, technologists and builders of modern India have their close interaction with the University, and contributed to the progress of the nation.

Mahamana Pandit Madan Mohan Malviya, an Indian independence activist, and a great visionary of education and knowledge of the country, has conceptualized that the primary means for achieving a national awakening and nation building is education of the mass. At the 21st Conference of the Indian National Congress in Benares in December 1905, Bharat Ratna Pandit Madan Mohan Malviya publicly announced his intent to establish a university in Varanasi. At that time the focus of his arguments was on the prevailing poverty in India and the decline in income of Indians compared to Europeans. His vision was, “The millions mired in poverty here can only get rid of it, when science is used in their interest& application of science is only possible when scientific knowledge is available to Indians in their own country. He continued to develop his vision for the university with inputs from other Indian nationalists and educationists. He soon left his legal practice to focus exclusively on developing the university and his independence activities. On 22 November 1911, he registered the Hindu University Society to gather support and raise funds for building the university. He spent the next 4 years gathering support and raising funds for the university. His dream mission received early support from the Kashi NareshPrabhu Narayan Singh and Maharaja Sir Rameshwar Singh Bahadur of Raj Darbhanga. In October 1915, the Banaras Hindu University Bill was passed by the Imperial Legislative Council.

With the prevalent environment, it was decided that English would be the medium of instruction, and gradually Hindi and other Indian languages were introduced. A distinguishing characteristic of Malviya’s vision was the preference for a residential university as all other Indian universities of the period, like Bombay, Calcutta, Madras, etc., were non residential affiliating universities which only conducted examinations and awarded degrees to students of their affiliated college.

On auspicious day of Vasant Panchami, 4th February 1916 the foundation stone of BHU was laid by Lord Hardinge, the then Viceroy of India. To promote the university’s expansion, eminent guest speakers such as Mahatma Gandhi, Sir Jagadish Chandra Bose, Prof C. V. Raman, Prafulla Chandra Roy, Prof Sam Higginbottom, Sir Patrick Geddes, and Besant were invited to deliver a series of what are now called The University Extension Lectures between 5–8 February 1916. Gandhi’s lecture on the occasion was his first public address in India.

Sir Sunder Lal was appointed the first Vice Chancellor, and the university began its academic session the same month with classes initially held at the Central Hindu School in the Kamachha area, while the campus was being built on over 1,300 acres (5.3 km²) of land donated by the Kashi Naresh on the outskirts of the city. It has well maintained roads, extensive greenery, a temple, an air strip and buildings which are an architectural delight. The Air Field of the campus was started for military training for flying during the Second World War.

The university comprises 5 institutes including IIT-BHU, 14 faculties, more than 140 departments, 4 interdisciplinary centers, a constituent college for women and 3 constituents schools, spanning a vast range of subjects pertaining to all branches of humanities, social science, technology, medicine, science, fine arts and performing arts. Amongst these basic facilities, BHU has 6 centers of advanced studies, 10 Departments under special assistance program and a large number of specialized research centers. Furthermore, 4 degree-colleges of the city are affiliated to the University. Bharat Kala Bhavan, the reputed museum of the university, is a treasure trove of rare collections. The hospital of the University is equipped with more than 900 beds along with all the modern amenities. The university provides a wide range of facilities for sport and hobbies. It possess large playgrounds, a big auditorium, a flying club and many auxiliary services and units like printing press, publication cell, fruit preservation center, subsidized canteens, employment and information bureau, security etc. The University family consists of more than 15000 students belonging to all streams of life, castes, religions and races, about 1700 teachers, and nearly 8000 non-teaching staff. A large number of students from foreign countries like the USA, the countries of Europe, Asia, Middle East, Africa, etc., come to study here. The university has taken a leadership role in promoting new ideas, the spirit of integration of the world, and cultivation of intellect and culture. Banaras Hindu University is small virtually the universe in microcosm.

Department of Geophysics

On the request of Government of India, the department of Geophysics was started in 1949 by the then Vice-chancellor, Pt. Govind Malviya Ji with only one staff member, (Prof.) Jagdeo Singh Ji, who subsequently got his Ph.D. degree and training from Imperial College, London. Initially, the department functioned with cooperation from the Department of Geology, Physics, Mathematics and College of Mining and Metallurgy Engineering (subsequently became part of IIT-BHU). The Department of Geophysics is one of the pioneer centers of Geophysical education in the country. Prof. Rajnath was its first Head of the department. When the department of Geophysics got an independent space at its present location in 1964, Prof. H. S. Rathore became the Head of the department. Initially, two year M. Sc. degree course in Geophysics was started. But when UGC made the countrywide amendment of the Master Degree course of Geophysics to be of three year course, the Department of Geophysics, BHU adopted the same degree course since 1976, leading to M. Sc. (Tech.) Geophysics with specialization in Exploration Geophysics and Meteorology. The Department is actively engaged in teaching of updated courses in Geophysics-Meteorology to postgraduate students, in carrying out field investigations and collaborative work with different government/ quasi-government organizations and in offering consultancy services to the interested agencies. The first Ph.D. degree from the department was awarded in 1965. However, the department has produced more than 110 Ph. Ds. and about 1000 research papers have been published in the national and international journals of repute. During last three decades, 27 research projects funded by various agencies like DST, ONGC, CGWB, UGC, CSIR, DRDO and ISRO have been completed. Many faculty members have been visited a number of foreign countries like USA., England, Germany, Australia, Netherlands, Japan, Canada, Italy, Korea, Thailand, Singapore, Switzerland, Nepal on various academic assignments and a few have been elected fellows of AEG and IGU. The department has got modern equipments and is being supplemented one regular basis. The department is also collaborating with India Meteorological Department, Govt. of India in maintaining a Weather Observatory, a Seismological Observatory and an Ozone Unit.

In recent year, the total intake has been exceeded to about 50 students, including seats for foreign nationals. Admission to the department for studies is being done on the basis of nation-wide examination, conducted by the university.

Indian Meteorological Society – A Journey

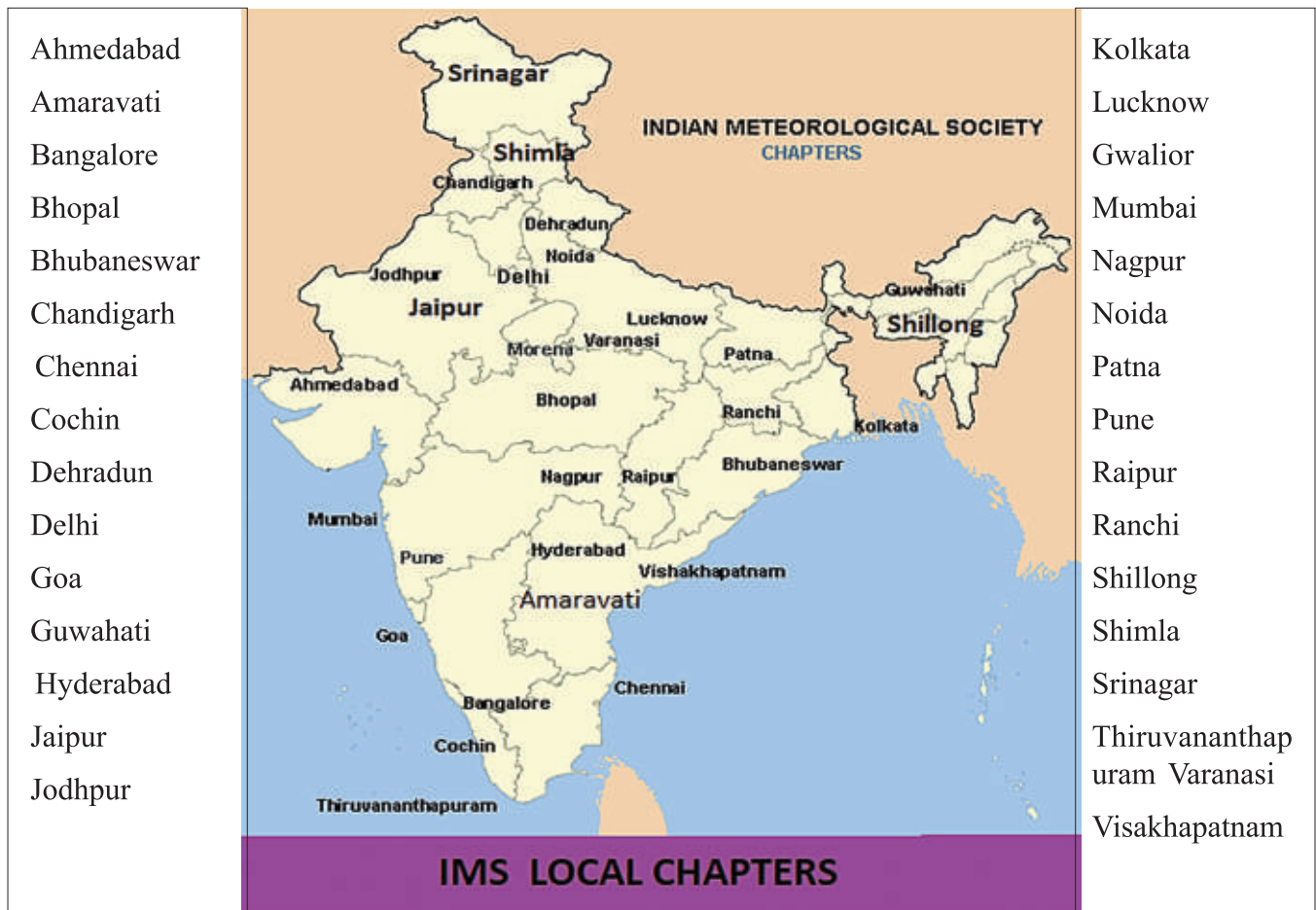
D. R. Pattanaik

Secretary, Indian Meteorological Society, New Delhi

Email* : drpattanaik@gmail.com

1. Establishment of IMS

The Indian Meteorological Society (IMS) established in 1956 during the Session of the Indian Science Congress, has more than 3000 members at present. It was registered as a Society under the Societies Registration Act in 1972 in New Delhi. The society has its head Quarter in Delhi with 31 chapters spread across the country. The society is a non-profit organization and none of its income or assets shall accrue to the benefit of its members. A well discussed constitution is its major assets of IMS. The constitution is available at IMS website at the following URL: <http://www.imd.gov.in/ims/>



2. The main objectives of the society are :

- Advancement of Meteorological and allied sciences in all their aspects.
- Dissemination of the knowledge of such sciences both among the scientific workers and among the public.

- Application of Meteorology and allied sciences to various constructive human activities, such as, agriculture and land uses, irrigation and power development, navigation of sea and air, engineering and technology, medicine and public health etc.

3. Membership of IMS

Any person who is interested in the aims and objectives of the Society is eligible to become a Member. He shall apply for membership in the prescribed form available in the website and shall be notified on acceptance by the Council.

- Life Member (LM)

A Member who pays all his dues in a lump sum as prescribed by the General Body shall be a Life Member. The society has about 3000 life members.

- Annual Member (AM)

A Member who pays all his dues in a lump sum as prescribed by the General Body shall be a Life Member. The society has about 3000 life members.

- Student Members (SM)

In order to encourage students to become IMS member, IMS recently introduced student membership where a student can become IMS student member by paying Rs. 1000/- along with the forwarded application from head of the institution where he/she is working. The membership will be valid till the time he/she becomes 30 years of age or get some employment in any place whichever is early. He/she can become a regular life member of IMS by paying the balance amount.

- Institutional Members (Annual)

Any institution which is interested in the aims and objectives of the Society is eligible to become an Institutional Member on payment of an annual subscription. The institution shall apply for Membership and shall be notified on acceptance by the Council. The Institutional Member may nominate its representative to exercise the Membership privileges.

- Patron

A person or an institution who is interested in the aims and objectives of the Society and makes a donation of substantial sum to the Society will, at the discretion of the Council, be admitted as Patron.

SUBSCRIPTION

Annual Member	Indian : Rs.300
Life Member	Indian : Rs. 3000; Foreign : US\$ 150
Entrance Fee	Indian : Rs. 00; Foreign : US\$ 10
Student Member	Indian : Rs. 1000
Institutional Member	Indian : Rs. 10000 (annual); : US\$ 250
Patron	Indian : Rs. 100000 ; Foreign : US\$ 2500
Institutional Patron	Indian : Rs. 1000000 ; Foreign : US\$ 25000

4. National Council of IMS

The National Council (NC) of IMS are elected every two years.. The office bearers of IMS NC include : President, Vice Presidents (Two), Secretary, Joint Secretary, Treasurer, Council members (eight) and Immediate Past President. The Local Chapters also elect office bearers for their Executive Councils every two years. The present NC of IMS took over the charge on 1st May, 2018.



IMS GB Meeting held on 1st May 2018, where new NC took over the charge.

**NATIONAL COUNCIL
(2018-2020)**

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Immediate Past President	AVM Dr. Ajit Tyagi Tel.: 9818163666 (M); E-mail: ajit.tyagi@gmail.com
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Jt. Secretary:	Dr. S. I. Laskar Tel.: 9013179961 (M) ; Email: drsebul@gmail.com
Treasurer:	Sh. Ashok Kumar Baxla Tel.: 9818429165 (M) ; Email: baxla.asc@gmail.com
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	Sh. R. K. Giri Tel.: 9868901535 (M)
	Prof. R. Bhatla Tel.: 9415290782 (M)
	Sh. Sikandar M. Jamadar Tel.: 9922753294 (M)
	Ms. Samanti Sarkar Tel.: 9868493443 (M)
	Dr. D. Ram Rajak Tel.: 9428499221 (M)
	Sh. Manas Kumar De Tel.: 9810790779 (M)

5. IMS Fellows

Honorary Fellow and Fellow

- Persons of acknowledged eminence in Meteorology and allied fields of Science and Technology or in their furtherance may be elected as honorary fellows by the General Body on proposal from the Council.
- Life members, who have made outstanding contribution of Meteorology and allied fields of Science and Technology, may be elected as Fellows by the General Body on proposal from the council. The following outstanding members of the society have been elected as Fellows/Honorary.
- IMS has also given Life Time Achievement Awards to three eminent scientists.

- **IMS LIFE TIME ACHIEVEMENT AWARDS**

S.No.	Name
1	Prof. P. V. Joseph
2.	Shri Soundararajan Raghavan
3.	Shri Dev Raj Sikka

- **List of IMS Honorary Fellows**

S.No.	Name
1	Late Dr. A. P. J. Abdul Kalam
2	Late Dr. J. S. Fein
3	Dr. P. S. Goel
4	Late Prof. V. R. Gowariker
5	Prof. Murli Manohar Joshi
6	Dr. Ramesh Kakar
7	Dr. K. Kasturirangan
8	Late Prof. T. N. Krishnamurti
9	Prof. G. O. P. Obasi
10	Dr. Kamal Puri
11	Prof. V. S. Ramamurthy
12	Prof. Veerabhadran Ramanathan
13	Dr. P. Krishna Rao
14	Dr. M. V. K. Siva Kumar
15	Dr. M. S. Swaminathan
16	Dr. Petteri Taalas

- **List of IMS Fellow**

S. No.	Name
1	Late Dr. R Ananthakrishanan
2	Late Dr. G.C. Asnani
3	Dr. Swati Basu
4	Prof. G. S. Bhat
5	Dr. V. K. Dadhwal
6	Late Prof. P. K. Das
7	Late Mr. S. K. Das
8	Prof. S. K. Dash
9	Dr. R.K. Datta
10	Dr. U. S. De
11	Dr. B. L. Deekshatulu
12	Late Dr. O.N. Dhar
13	Prof. S.K. Dube
14	Prof. (Mrs.) Sulochana Gadgil
15	Prof. B. N. Goswami
16	Dr. Akhilesh Gupta
17	Dr. George Joseph
18	Prof. P.V. Joseph
19	Dr. P.C. Joshi
20	Dr. A.K. Kamra
21	Dr. R.R. Kelkar
22	Prof. R. N. Keshavamurthy
23	Late Dr. P. Koteswaram
24	Dr. R. Krishnan
25	Dr. S. M. Kulshrestha
26	Dr. Rupa Kumar Kolli
27	Sh. A. S. Kiran Kumar
28	Dr. Santosh Kr. Mishra
29	Prof. U.C. Mohanty
30	Late Dr. D.A. Mooley
31	Dr. Shailesh Nayak
32	Prof. P.C. Pandey
33	Dr. G.B. Pant
34	Late Prof. P.R. Pisharoty
35	Mr. S. Raghavan

36	Dr. M. Rajeevan
37	Late Dr. Y. Ramanathan
38	Dr. K. J. Ramesh
39	Dr. DV Bhaskar Rao
40	Dr. L. S. Rathore
41	Late Prof K. R. Saha
42	Late Dr. R. P. Sarkar
43	Dr. N. Sen Roy
44	Prof J. Shukla
45	Late Sh. D.R. Sikka
46	Prof. J. Srinivasan
47	Dr. S.K. Srivastav
48	Dr. H. N. Srivastava
49	AVM. Dr. Ajit Tyagi
50	Dr. G. Viswanathan

- **List of IMS Presidents**

S. No.	Name	Period
1	Dr. P. Koteswaram	1971-74
2	Sh. Y. P. Rao	1974-78
3	Dr. P. K. Das	1978-83
4	Sh. S. K. Das	1983-86
5	Dr. R. P. Sarkar	1986-89
6	Dr. S. M. Kulshrestha	1989-91
7	Prof. P.R. Pisharoty	1991-93
8	Dr. N. Sen Roy	1993-95
9	Dr. R.K. Datta	1995-97
10	Dr. R. R. Kelkar	1997-99
11	Dr. S. K. Srivastav	1999-2001
12	Prof. S. K. Dube	2001-2003
13	Dr. S.K. Srivastav	2003-05
14	Dr. G. B. Pant	2005-07
15	Sh. R. C. Bhatia	2007-09
16	Dr. L. S. Rathore	2010-12
17	Dr. Shailesh Nayak	2012-14
18	Dr. Akhilesh Gupta	2014-16
19	AVM Dr. Ajit Tyagi	2016-18
20	Prof. S. K. Dash	2018-20

6. IMS Activities

To achieve the objectives the society stated above involve in carrying out the following work.

- Encourages research activity.
- Organizes lectures, meetings, symposia, discussions etc.
- Arranges to publish suitable pamphlets, books, periodicals, brochures etc.
- Promotes Co-operation in scientific work.
- Encourages the members to foster common interests of the Meteorological professions
- Give awards and fellowship to distinguished scientists.

6.1 Sponsor Scientific Events and Organization of Symposia/Conferences

To Sponsor Scientific Events

- The Society sponsored for the first time a scientific event in April 1970. This was a symposium on Satellite Meteorology held at Pune.
- Later on it sponsored the International Symposium on Monsoons which held in March 1977 at New Delhi.
- It also sponsored the National Symposium on Early Results of Monsoon Experiments held at New Delhi in March 1981.

Organisation of Scientific Symposia

- With a beginning in 1976 the Society has organised the following National Symposia/Seminars so far:
- Seminar on Weather Modification New Delhi February 1976
- Symposium of Local Severe Storms Calcutta February 1982
- Symposium on Tropical Cyclones and Disaster Preparedness Bhubaneswar January 1984

Annual National Symposia Series on Tropical Meteorology (TROPMET) Arranged by IMS Chapters

- Monsoon Variability, Satellite Application and Modelling, Ahmedabad, February 1992
- Meteorology for National Development, New Delhi, February 1993
- Climate Variability, Pune, February 1994
- Advanced Techniques in Meteorology, Hyderabad, February 1995
- Meteorology and Natural Disasters, Visakhapatnam, February 1996
- Symposium on Monsoon, Climate and Agriculture, Bangalore, February 1997
- Meteorology beyond 2000, Chennai, 1999
- Ocean & Atmosphere, Cochin, February 2000

- Meteorology for Sustainable Development, Mumbai, February 2001
- Forecasting & Mitigation of Meteorological Disasters: Cyclones, Floods & Droughts, Bhubaneswar, February 2002
- Role of Meteorology in National Development, Pune, 2006
- Advances in Meteorology and their Applications, Bhopal, 2007
- Meteorology, Atmospheric Science, Weather & Climate and allied services and disaster management, Kolkata 2010
- Meteorology for Socio-economic Development, Hyderabad, 2011
- National Symposium on Frontiers of Meteorology with special reference to the Himalayas. Dehradun 2012
- National Symposium on Weather & Climate Extremes, Chandigarh – 2015
- National Symposium on Tropical Meteorology: Climate Change and Coastal Vulnerability, Bhubaneswar 2016
- National Symposium on Tropical Meteorology: Understanding Weather and Climate Variability: Research for Society, Bhubaneswar 2018

International TROPMET (INTROPMET) Organised by IMS

- International Symposium on Asian Monsoon & Pollution over Monsoon Environment, (INTROPMET-1997) New Delhi, December 2-5, 1997
- International conference on monsoon (ICOM) and WMO Workshop on forecasting monsoons from days to years, New Delhi. March 21-26, 2001
- International conference on Seismic Hazard with particular reference to Bhuj Earthquake of January 26, 2001. New Delhi, 3-5 October, 2001
- International Symposium on Natural hazards (INTROPMET 2004) February 24-27 ,2004, Hyderabad.
- Monex-25, Celebrating 25th Anniversary of Summer Monsoon Experiment-1979 (Monex-25 and its Legacy), New Delhi, 3-7 February, 2005
- International symposium on Challenges & Opportunities in Agro-meteorology (INTROPMET – 2009), New Delhi, 23-25 February 2009.
- International Tropical Meteorology Symposium on Monsoons- Observation, Prediction and Simulation (MOPS) (INTROPMET -2013), Chennai, Originally scheduled in 2013 but was organized during 21-24 February, 2014.
- International Tropical Meteorology Symposium on Advancements in Space-based Earth Observations and Services for Weather and Climate (INTROPMET- 2017), 03-07 November, 2017, Ahmedabad.



On behalf of NSF, Jay Fein accepts a bouquet expressing thanks from the Indian research community for NSF's support of MONEX-1979. Also pictured are (left to right) Late D. R. Sikka, V. S. Ramamurthy (India Department of Science and Technology), S. K. Dube (Indian Institute of Technology), and Peter Webster (Georgia Institute of Technology). IMS function, Delhi 2005.



INAUGURATION OF INTROMET -2017 in Ahmedabad on 3rd November, 2017

6.2 IMS Publications

To popularize Meteorology and Atmospheric Sciences, the Indian Meteorological Society (IMS) brings out the Research journal “Vayu Mandal”, which is the official Bulletin of IMS. This is brought out twice a year since 1971 to encourage research work and provide information on latest developments in the atmospheric sciences.

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The article can be submitted to :

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Mausam Bhavan Complex,
Lodi Road, New Delhi-110 003.
Email: vayumandal.ims@gmail.com



The IMS publication “Vayu mandal” being released at WMO day celebration, 23 March 2018.

7. IMS Awards

7.1 *National Biennial Awards*

The IMS had instituted three biennial research awards from the endowment gifted by the sponsors viz., Dr. B.N. Desai Award, V. Bhavnanayana Award, J. Das Gupta Award, Dr. P. Krishna Rao and Prof. A.D. Vernekar awards. In 2011 IMS re-designed these awards by increasing the prize money by contributing from IMS along with the endowment gifted earlier by the sponsors. These awards are as per the details given below.

- (i) IMS Award for Best Paper Published on Monsoon Research (Formerly B.N. Desai Award) : A Citation and cash prize of Rs.15,000/-.
- (ii) IMS Award for Best Paper Published on Instruments (Formerly J. Das Gupta Award) : A Citation and cash prize of Rs.15,000/-.
- (iii) IMS Award for Best Paper Published on Agrometeorology (Formerly Bhavanarayana Award) : A Citation and cash prize of Rs. 15,000/-
- (iv) IMS Award for Best Paper Published on Satellite Meteorology (Formerly P. Krishna Rao Award) : A Citation and cash prize of Rs. 25,000/-
- (v) IMS Award for Best Paper Published on Modelling Study (Formerly A. D. Vernekar Award) : A Citation and cash prize of Rs. 25,000/-

7.2 **IMS International Award : “Sir Gilbert Walker Gold Medal”**

IMS has instituted “Sir Gilbert Walker Gold Medal” in 2001 to be given biennially to an eminent Indian or foreign scientist of international recognition in the field of monsoon studies. There is no bar on the age and nationality. Now the Prize money for this award is Rs. 100000/- and a gold plated silver medals (100 gm weight) and a Citation. The selection will be made by a judging committee with IMS President and minimum two Fellows of IMS as members. Sir Gilbert Walker, the legendary meteorologist who did pioneering and monumental work on long range forecasting of Indian monsoon, was the Director General of India Meteorological Department for 20 years (1904-1924).

“List of Sir Gilbert Walker Gold Medal Awardees” so far are :

- (1) Prof. J. Shukla, COLA, USA
- (2) Prof. P. K. Das, Former DGM, IMD
- (3) Prof. U. C. Mohanty, IIT Delhi
- (4) Shri. D. R. Sikka, Former Director, IITM, Pune
- (5) Prof. T. N. Krishnamurti, Professor FSU, USA
- (6) Prof. (Mrs) Sulochana Gadgil, IISC, Bangalore

Sir Gilbert Walker Gold Medal Awardees of IMS



Prof. J Shukla is a Distinguished University Professor at George Mason University, USA, where he founded the Department of Atmospheric, Oceanic, and Earth Sciences and Climate Dynamics PhD Program. Prof. Shukla's scientific contributions include studies of: the dynamics of monsoon depressions; the climate variability; the influences of SST on seasonal variability; the intraseasonal and inter-annual variability of monsoons; the predictability and prediction of monsoons, tropical droughts, and ENSO.



Late Prof. P. K. Das, former Director General of Meteorology,

India Meteorological Department (during 1979-1983) passed away on 14 January, 2011 at the age of 84. He had joined the IMD in 1949. Prof. Das made pioneering research and contributions to Meteorology, in particular to the development of Numerical Weather Prediction in India. He worked on cloud physics with Sir John Mason at Imperial College, London. He also worked with Prof. Jule Charney, Prof. Norman Philips and Ed Lorenz of the MIT and Reid Bryson at the University of Wisconsin.



Prof. U. C. Mohanty worked at IIT Delhi before shifting to IIT Bhubaneswar as Visiting Professor, in the School of Earth Ocean and Climate Sciences (SEOCS). He has made outstanding contribution in the field of tropical meteorology, in particular, Asian summer monsoon dynamics, tropical cyclone research, numerical weather prediction in tropics, mesoscale modeling of extreme weather events over Indian monsoonal regime, extended range prediction of Indian summer monsoon and regional climate modeling.



Late Prof. D. R. Sikka, Former Director of IITM (1986-1992) is an international expert on monsoon in particular and on Tropical Meteorology in general. His knowledge and experience of last six decades are considered brilliant. He never retired from the limits of his scientific capability. He was very active even at the age of more than eighty. He was spearheading many important projects/missions of Ministry of Earth Sciences, Department of Science & Technology related to Atmospheric Sciences.



Late Prof. T. N. Krishnamurti, at present is Professor Emeritus in the Department of Meteorology, Florida State University, where prior to his retirement he was the Lawton Distinguished Professor of Meteorology. He has specialized in studies of monsoon, hurricanes and numerical weather prediction and more recently on multi-model super-ensemble forecasts for global weather (including hurricanes) and climate. He has published over 250 papers and two textbooks.



Prof. Sulochana Gadgil: Worked at the Centre for Atmospheric and Oceanic Sciences (CAOS) in Bangalore, India for most of her career. She has studied the how and why of monsoon, including farming strategies to cope with rainfall variability and modeling ecological and evolutionary phenomena. Her research led to the discovery of a basic feature of the sub-seasonal variation in the monsoon cloud bands. She demonstrated monsoon is a manifestation of the seasonal migration of a planetary scale system. e



Prof. Sulochana Gadgil, receiving the Gilbert Walker Award, during INTROMET in Ahmedabad on 3rd November, 2018

7.3 IMS Honorary Fellowship and Fellowship proposed to be given in 2018



*INDIAN METEOROLOGICAL SOCIETY
HONORARY FELLOWSHIP
Er. Avinash Chand Tyagi*

Er. Avinash Chand Tyagi was born on 28th February 1952, earned his Bachelor of Engineering degree in the year 1973 from the Indian Institute of Technology (IIT), Roorkee, Master of Technology in Geo-Technical Engineering in the year 1981 from the IIT, Delhi and a P G Diploma in Computational Hydraulics in the year 1986 from the International Institute of Hydraulics and Environment, Delft, The Netherlands.

Er. Tyagi has 44 years of long experience in dealing with various facets of water resources management at several levels. He was the Director in Climate and Water Department, WMO, Geneva from February 2003 to December 2017. In his long career at Central Water Commission, he has been closely associated with Indian Meteorological Department since 1979, interacting with flood management issues and, later while in WMO, helped in establishing Regional Climate Centre.

A strategist by nature, Er Tyagi has helped the organizations that he served or managed, in articulating and adopting long-term visions as in - Roadmap for International Commission on Irrigation & Drainage (ICID) Vision 2030, World Climate Conference-3, Global Framework for Climate Services for provision of climate services for water & agriculture sectors, the India Water Vision on Water for the 21st Century and National Water Policy of India 2002.

Er Avinash Tyagi is well known in the water and climate circles internationally and has developed professional network, working closely with various UN agencies. He chaired UN-Water Thematic Priority Area on Water and Climate Change; Alternate Governor in the Board of Governors (BoG) of World Water Council representing ICID; Governing Board of UNESCO-IHE, Delft; Governing Board of ICHARM; and Chair of International Flood Network IFNet.

In recognition of his outstanding technical leadership in the field of Water Resources Management and for his long contribution in dealing with various facets of water resources management at several levels starting from hydrologic observation to contributing to the national and international policy making, the Indian Meteorological Society is privileged to confer upon Er. Avinash Chand Tyagi – the Honorary Fellowship of the Indian Meteorological Society on this day of 24th October, 2018.



**INDIAN METEOROLOGICAL SOCIETY
HONORARY FELLOWSHIP
Dr. Upendra Narayan Singh**

Dr. Upendra Narayan Singh earned his B.Sc., Physics (Honors) degree from L. N. Mithila University, Darbhanga, India in 1975, M. Sc., Applied Physics (Quantum Electronics), Birla Institute of Technology, Ranchi, India in 1979, M. Phil., Physics (Quantum Electronics), Indian Institute of Technology, Kanpur, India, 1980, Diplôme d'Etude Approfondis (DEA), Optics and Signal Processing, University of Franchè-Compté, Besançon, France in 1982 and Ph.D. Degree in Physics from University of Pierre and Marie Curie, Paris, France in 1985.

Dr. Upendra N. Singh occupied the positions of Technical Fellow for Sensors and Instrumentation at the NASA, Engineering and Safety Center, NASA Langley Research Center. He is an internationally recognized, atmospheric scientist and laser remote sensing expert with 30 years' experience. Dr. Singh served as the Principal Investigator of the \$70 M multi-Center NASA Laser Risk Reduction Program (LRRP), which he envisioned, formulated and implemented during 2002-2010. His LRRP program has led the way to a significant reduction in risk for lasers in space for global remote sensing using lidars. He is currently serving as Principal Investigator of two Earth Science Technology Office funded programs to enable space-based measurements of Carbon Dioxide and 3-D Winds. In the last two decades, Dr. Singh has organized 35 international symposia/conferences and has authored/co-authored over 350 scientific articles in atmospheric sciences and remote sensing area.

Dr. Singh has received numerous awards and honors, including the NASA Outstanding Leadership Medal (2016) for "Outstanding leadership in resolving laser/lidar technical challenges and forging international space agency alliances." Earlier, he was awarded NASA Outstanding Leadership Medal (2001) for "Significant contributions and distinguished, internationally recognized, scientific and technical leadership of NASA programs in the area of active and passive remote sensing of the atmosphere." He has also received NASA Group Achievement Award (1998) for "exceptional research and technology innovations, and team dedication in completing a pioneering two-micrometer transmitter for NASA New Millennium Program's coherent wind lidar instrument" and NASA Group Achievement Award (2010) for "Outstanding contributions of the 2-micron Coherent Doppler Wind Lidar Development Team for enabling technology needed for space based global measurements of winds."

Dr. Singh is known internationally as a technical leader who conceived and successfully led the advancement of laser/lidar technology for NASA's earth science space missions. He has brought together space agency leaders and policy makers to discuss and describe their plans, priorities and challenges for their space missions.

In recognition of his outstanding technical leadership in the advancement of laser/lidar technology for NASA's Earth science space missions and his long contribution to the Earth observation missions for collecting observational data for the societal benefit of all the nations, the Indian Meteorological Society is privileged to confer upon Dr. Upendra Narayan Singh, the Honorary Fellowship of the Indian Meteorological Society on this day of 24th October, 2018.



**INDIAN METEOROLOGICAL SOCIETY
FELLOWSHIP
Prof B Padmanabha Murty**

Prof. B Padmanabha Murty was born on 21 Dec 1934 in Visakhapatnam, Andhra Pradesh. He completed his M.Sc. in Meteorology & Oceanography in First Class in the year 1955, D.Sc. (Micrometeorology - Boundary Layer Meteorology) in the year 1965 from Andhra University, Visakhapatnam.

Prof. Murty joined India Meteorological Department as Assistant Meteorologist in the year 1972 and left the organisation as Director in the year 1985. Besides his tenure in IMD he also worked as Professor, School of Environmental Sciences, Jawaharlal Nehru University, New Delhi during 1985 – 2000 and WMO/UN Expert in Agrometeorology in Jordan.

Prof. Murthy's main research interests are in the area of Air Quality and Urban & Boundary Layer Meteorology. He was trained at many renowned centres across the globe such as (i) Environmental Protection Agency, USA; State Committee for Hydrometeorology & Control of Natural Environment, USSR; Atmospheric Environment Service, Toronto, Canada; University of Tsukuba, Japan; and University of East Anglia, Norwich, UK. Later he had worked in several important research projects related to Air Quality Modelling of Ministry of Environment & Forests, National Thermal Power Corporation and Asian Development Bank/NTPC.

Prof. Murthy has contributed immensely to R&D in the field of Air pollution and guided about a dozen of students for their PhD degree. Further he had also worked as consultant (Meteorology & Environment) with many companies dealing with air quality monitoring during the period from 2000-2015.

Prof. Murthy has many awards and honours to his credit. A few to mention are: Awarded Citation for Outstanding Contributions in the Field of Air Quality Management in India by Indian Air Pollution Control Association; Designed "TAJ TRAPEZIUM" for restricting industrial development around Taj Mahal.

In recognition of his outstanding technical leadership in the field of Environmental Meteorology, specifically on Air Quality and Urban & Boundary Layer Meteorology at National and International levels, the Indian Meteorological Society is privileged to confer upon Prof. B Padmanabha Murty, the Fellowship of the Indian Meteorological Society on this day of 24th October, 2018.



**INDIAN METEOROLOGICAL SOCIETY
FELLOWSHIP
Prof RAVI SHANKAR NANJUNDIAH**

Prof. Ravi Shankar Nanjundiah was born on 16th October, 1961. He obtained his BE (Mechanical Engineering) degree from Rani Durgavati University, Jabalpur in 1984 and ME (Mechanical Engineering) degree from the Indian Institute of Science (IISc), Bengaluru in 1986. He earned his PhD degree in Atmospheric Sciences from IISc, Bengaluru in 1992 on his thesis entitled ‘Study of Intra-seasonal Variations of the Tropical Convergence Zones in a Simple Monsoon Model’.

After completing Post-Doctoral Fellow at the Mathematics and Computer Science Division of Argonne National Laboratory, USA, Prof. Ravi joined the Centre for Atmospheric and Oceanic Sciences (CAOS) at IISc, Bengaluru as an Assistant Professor in July 1995. He became Associate Professor in July 2001; Professor in July 2007 and the Chairman of CAOS in December 2013. Subsequently, he took over the charge of Director of the premier research institute Indian Institute of Tropical Meteorology (IITM), Pune on 2nd March 2017.

Study of Monsoon and its variability using climate models, application of High Performance Computing/Grid Computing for climate and weather-related studies, and use of Machine Learning Techniques for Monsoon prediction and downscaling studies are his key areas of interest. He has worked extensively on different aspects of the Indian Summer Monsoon. He was involved in a project sponsored by Intel Inc. titled “ Intel Parallel Computing Centre for Modelling Monsoons and Tropical Climate (IPCC-MMTC)” for using computational accelerators such as Xeon-Phi for climate modelling. This research was conducted in collaboration with National Centre for Atmospheric Research (NCAR) of USA.

Prof. Nanjundiah has many awards and honours to his credit. A few to mention are: Nvidia Innovation Award 2013; Adjunct Faculty, ICTS-TIFR 2011-2014; Associate Editor, Journal of Earth System Sciences (published jointly by the Indian Academy of Sciences, Bangalore and Springer), 2008-2014; and Sir CV Raman Young Scientist Award for the year 2000 in the field of Earth Sciences. He is also a Member of the Editorial Advisory Board of Dynamics and Statistics of the Climate System (a new journal recently launched by Oxford University Press).

Prof. Ravi has been active in human resource development and so far he has guided 11 PhD, 04 M.Sc. (Engg.) and 09M.Tech. students. Currently, he is guiding 04 PhD students. He has 70+ peer-reviewed publications in national and international journals. He has also presented papers at several conferences.

In recognition of his outstanding contribution to teaching and research in Monsoon and its Variability using Climate Models and extensive work on different aspects of Indian Summer Monsoon prediction, the Indian Meteorological Society is privileged to confer upon Prof. RAVI SHANKAR NANJUNDIAH, the Fellowship of the Indian Meteorological Society on this day of 24th October, 2018.

7.4 National Annual Award

During 2012 IMS has also instituted a young Scientist award (Below 45 years) to be given annually for the Best Paper Published in Tropical Meteorology as per the details given below.

(i) **IMS Young Scientist Award** : A Citation and cash prize of Rs. 50,000/-

List of “IMS Young Scientist Awardees” so far are :

- (1) Dr. Hemant Chaudhary, IITM, Pune (year 2012)
- (2) Dr. Randhir Singh, SAC, Ahmedabad (Year 2013)
- (3) Dr. D. R. Pattanaik, IMD, New Delhi (Yea 2014)
- (4) Dr. Roxy Mathew, IITM, Pune (Year 2015)
- (5) Dr. (Ms.) P Rohini, IITM, Pune (Year 2016)
- (6) Dr. (Ms) Gayatri Kulkarni, IITM, Pune (Year 2017)



Dr. Hemantkumar Chaudhari
IITM, Pune (year 2012)



Dr. Randhir Singh Hooda
SAC, Ahmedabad (Year 2013)



Dr. D. R. Pattanaik
IMD, New Delhi (Year 2014)



Dr. Roxy Mathew Koll
IITM, Pune (Year 2015)



Dr. (Ms) P. Rohini
IITM, Pune (Year 2016)



Dr. (Ms) Gayatri Kulkarni
IITM, Pune (Year 2017)

IMS Young Scientist Award (2017)

IMS Young Scientist Award (2017) for the best research paper published on Tropical Meteorology.

Paper by: K. Gayatri, S. Patade and T. V. Prabha entitled, *“Aerosol–Cloud Interaction in Deep Convective Clouds over the Indian Peninsula Using Spectral (Bin) Microphysics”* published in *Journal of the Atmospheric Sciences (2017), Vol No 74, Page No 3145-3166.*

The study “The Weather Research and Forecasting (WRF) Model coupled with a spectral bin microphysics (SBM) scheme is used to investigate aerosol effects on cloud microphysics and precipitation over the Indian peninsular region. The main emphasis of the study is in comparing simulated cloud microphysical structure with in situ aircraft observations from the The paper has shown that the size distributions as well as other microphysical characteristics obtained from simulations such as liquid water content, cloud droplet effective radius, cloud droplet number concentration, and thermodynamic parameters are in good agreement with the observations. It is seen that in clouds with high cloud condensation nuclei (CCN) concentrations, snow and graupel size distribution spectra were broader compared to clouds with low concentrations of CCN, mainly because of enhanced riming in the presence of a large number of droplets with a diameter of 10–30mm. The Hallett–Mossop ice multiplication process is illustrated to have an impact on snow and graupel mass. The changes in CCN concentrations have a strong effect on cloud properties over the domain, amounts of cloud water, and the glaciation of the clouds, but the effects on surface precipitation are small when averaged over a large area. Overall enhancement of cold-phase cloud processes in the high CCN case contributed to slight enhancement (5%) in domain-averaged surface precipitation.

Brief Biodata of Dr K. Gayatri (First author)

Dr K. Gayatri has done M.Sc. in Physics from Pune University in 2009. She started working as project fellow after completion of M.Sc. at Indian Institute of Tropical Meteorology (IITM) and in 2012 joined as a Research Fellow at IITM, Pune. She worked under the guidance of Dr. Thara Prabhakaran at IITM and just recently was awarded the Ph.D. degree from the University of Pune. Currently, she is working as a Project Scientist–C in CAIPEEX group at IITM, Pune.

8. TROPMET – 2018;

National Symposium on “Understanding Weather and Climate Variability: Research for Society” during 24 to 27 October, 2018 at Banaras Hindu University, Varanasi, Uttar Pradesh

Each year, IMS organizes the National Symposium, commonly known as the symposium on Tropical Meteorology (TROPMET). This year, TROPMET is going to be held in the Holy City of Varanasi. TROPMET-2018 focuses on weather, climate, climate change and variability which includes the extreme weather events and their long term impact on climate. Today, floods, droughts, heat waves, dust storms, heavy precipitation are becoming more frequent as a result of climate change. Such extreme weather events are considered as most destructive both economically and socially accounting for about 90% of people affected by natural disasters. These weather events need constant monitoring so as to reduce their potential impacts on society. Since observation stations are not available at every spatial point of interest, modelling efforts are required to help assess the situation. Also, process studies are essential to understand the phenomena to a greater depth. Keeping these facts in mind, TROPMET-2018 will make efforts to bring together climate change scientists, local government bodies, academics and early warning services to discuss and share information for the benefit of the society. Detailed programme for this important is being prepared.

The event is expected to provide an excellent interactive platform to more than 300 professionals from various disciplines such as earth observation, ocean-atmosphere interface, meteorology, earth sciences, physics, computer sciences, and user sectors etc;

The symposium will focus on the following sub-themes :

- Observations in Climate Variability and Changes.
- Weather/Climate Modelling at Regional & Global Scales.
- Impact of Climate Variability/Change on Agriculture, Water, Energy and Health sectors.
- Weather and Climatic Extreme Events.
- Weather forecasting Services at Different Time Scales.
- Aerosols, Atmospheric Chemistry and Weather/Climate.
- Seismological Research for Society.
- Socio-Economic Impacts of Climate Variability and Change.

Shri Ashwaghosh Ganju, Director, SASE Chandigarh
 Dr. V.M. Tiwari, Director, NGR, Hyderabad
 Dr. Sunil Singh, Director, NIO, Goa
 Dr. M. Ravichandran, Director, NCAOR, Goa
 Dr. E. N. Rajagopal, Head, NCMRWF
 Prof. T. N. Singh, Vice Chancellor, MGKVVP, Varanasi

Coordinator

Dr. D. R. Pattanaik, Secretary, IMS NC

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Email - tropmet2018@gmail.com



TROPMET-2018

**National Symposium
 on
 Understanding Weather and
 Climate Variability : Research for
 Society**

**24 to 27 October, 2018
 Banaras Hindu University, Varanasi,
 Uttar Pradesh**

Jointly Hosted by

**Indian Meteorological Society
 Varanasi Chapter
 and
 Department of Geophysics
 Banaras Hindu University, Varanasi**

**Organised by
 INDIAN METEOROLOGICAL
 SOCIETY
 New Delhi, India**

Background

The Indian Meteorological Society (IMS) is a non profit organization that promotes the advancement, dissemination of knowledge, and the application of meteorology and related sciences. It has more than 3,000 Life Members from 100 or more research institutes, universities, user agencies, NGOs, industries and students.

The objectives of the IMS are:

- Advancement of Meteorological & allied sciences in all aspects.
- Dissemination of the knowledge of such sciences both among the scientific workers and among the public.
- Application of Meteorology and allied sciences to various constructive human activities, such as, agriculture and land uses, irrigation and power development, navigation of sea and air, engineering and technology, medicine and public health etc.

To achieve the above objectives the society takes the following concrete steps:

- Encourages research activity.
- Organizes lectures, meetings, symposia, discussions etc.
- Arranges to publish suitable pamphlets, books, brochures etc.
- Promotes Co-operation in scientific work.
- Encourages the members to foster common interests of the Meteorological professions, Popularisation of Meteorology and Atmospheric Sciences.

Each year, IMS organizes the National Conference TROPMET. This year, TROPMET is going to be held in the Holy City of Varanasi. TROPMET-2018 focuses on weather, climate, climate change and variability which includes the extreme weather events and their long term impact on climate. Today, floods, droughts, heat waves, dust storms, heavy precipitation are becoming more frequent as a result of climate change. Such extreme weather events are considered as most destructive both economically and socially accounting for about 90% of people affected by natural disasters. These weather events need constant monitoring so as to reduce their potential impacts on society. Since observation stations are not available at every spatial point of interest, modelling efforts are required to help assess the situation. Also, process studies are essential to understand the phenomena to a greater depth. Keeping these facts in mind, TROPMET-2018 will make efforts to bring together climate change scientists, local government bodies, academics and early warning services to discuss and share information for the benefit of the society. Detailed programme for this important is being prepared.

Venue

Department of Geophysics, Banaras Hindu University, Institute of Science, Varanasi, 221005, U.P., India.

Themes of the Symposium

- Observations in Climate Variability and Changes.
- Weather/Climate Modelling at Regional & Global Scales.
- Impact of Climate Variability/Change on Agriculture, Water, Energy and Health sectors.
- Weather and Climatic Extreme Events.
- Weather Forecasting Services at Different Time Scales.
- Aerosols, Atmospheric Chemistry and Weather/Climate.
- Seismological Research for Society.
- Socio-Economic Impacts of Climate Variability and Change.

Submission of Papers

Papers are invited on the above themes. A softcopy of the abstract of paper indicating the theme (not exceeding 500 words) may preferably be uploaded on the website, <http://imetsociety.org/tropmet-2018/> (under preparation) or may be emailed to tropmet2018@gmail.com in MS Word format (MS-Office 2003 or higher).

Important Dates

Abstract Submission	5 th Aug, 2018
Intimation on Acceptance of Abstracts	30 th Aug, 2018
Confirmation of Participation	30 th Sep, 2018
Early Bird Registration	10 th Oct, 2018
Inauguration	24 th Oct, 2018

Associated Events

Research Scholar's Competitive and Scientific Presentation and Poster Campaign	24 th Oct, 2018
Poster Presentation and Exhibition	24-27 th Oct, 2018
Interaction Meet of Experts with Stake Holders, Media and NGO's	24 th Oct, 2018
Local Tour on Payment Basis.	28 th Oct, 2018

Registration Fees

Category	By 10 th Oct, 2018	On Spot
IMS Members	Rs.3000	Rs.4000
Non-IMS Members	Rs.4000	Rs.5000
Scholars/Students	Rs.1000	Rs.1500
Foreign National	US\$150	US\$200
Industry	Rs.5000	Rs.6000
Associated Persons	Rs.3000	Rs.4000

Registration fee may be paid online (details will be provided shortly) and also through Demand Draft in favour of 'IMS Varanasi Chapter', payable at Varanasi along with filled in registration form. There is no registration fee for Honorary Fellows and Fellows of the Society.

Industry Presentation & Exhibition

Special sessions are planned to provide a platform for industry/entrepreneur. A presentation slot of 15 to 20 minutes duration will be allowed for select industry/entrepreneurs. Provision is also made for vendors to exhibit their products and services as well.

Accommodation and Transport

Accommodation will be arranged at the hotels and guest houses as per the entitlement and choice of the delegates on payment basis. Travel support to 3- AC train fare of IMS fellows and retired IMS members with no institutional attachments. It being a peak tourist season for Varanasi, requests for accommodation needs to be communicated at the earliest. Accommodation will be arranged on first-come-first served basis.

About Varanasi

Varanasi, one of the world's oldest living cities is also known as Banaras or Benaras. This holy city is located in the south eastern part of the state of Uttar Pradesh in northern India. It is situated on the left bank of the holy river Ganga (Ganges). The former name of the city "Kashi" signifies Varanasi as "site of spiritual luminance". This is the place where Buddhism is said to have given his lecture on the first turning of the Wheel of Dharma in 528 BCE in nearby Saranath. Varanasi is also a great centre of learning and known for its heritage in music, literature, art, and craft. The gentle waters of the Ganges, the boat ride at sunrise, the high banks of the ancient Ghats, the array of shrines, the meandering narrow serpentine alleys of the city, the myriad temple spires, the chanting of mantras, the fragrance of incense, the devotional hymn; all offer a kind of mystifying experience that is unique to the city of lord Shiva. It is also the place of one of the biggest universities, The Banaras Hindu University.

Patrons

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9. Popularisation of Meteorology and Atmospheric Sciences

The various Chapters of the Society Organise the following Programmes :

- Scientific lectures on important topics Weather Quiz for students Publication of Illustrative Weather Calendar-cum-book/Chart etc.
- Publication of articles in newspapers Production of educative video programmes.
- IMS Pune (IMSP) chapter organises Annual Monsoon Review of southwest monsoon each year regularly.
- Some special events like WMO Day, Earth Day, National Science Day, etc are being arranged by different chapters.

10. EVENTS and PHOTO GALARY

(i) PHOTO GALARY OF IMS EVENT (INTROMET, 2017), Ahmedabad



Award of IMS Honorary Fellowship Dr. Ramesh Kakar, NASA



IMS Honorary Fellowship to Dr. Petteri Taalas, SG WMO in Geneva as he could not come Ahmedabad



Award of IMS Fellowship Dr. V. K. Dadhwal, ISRO



Award of IMS Fellowship Prof. G. S. Bhat, IISc



Award of IMS Fellowship Dr. K. J. Ramesh, IMD



Award of IMS Fellowship Dr. R. Krishnan, IITM

(ii) World Meteorological Day, 23 March 2018 (New Delhi)



World Meteorological Day 2018

23rd March 2018



Mahika Hall, Prithvi Bhawan

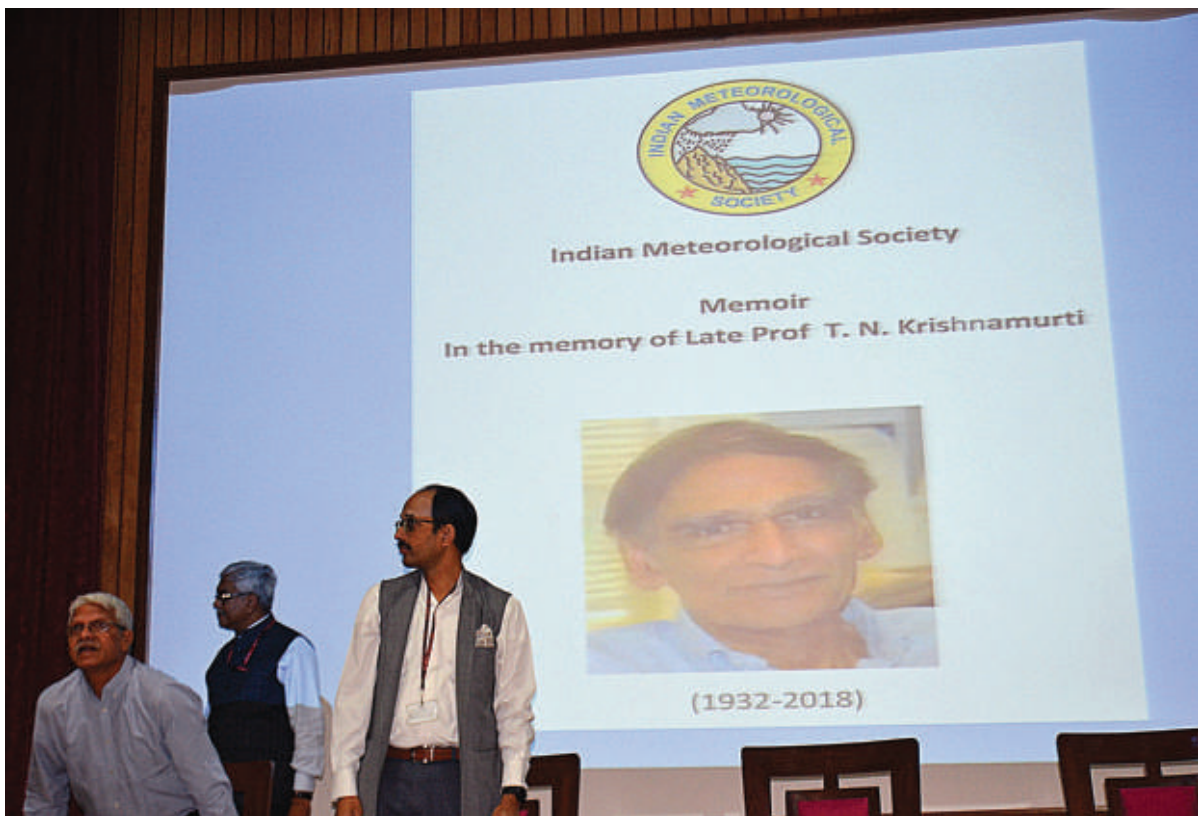
Lodi Road, New Delhi 110003



Bottom : Dr. Akhilesh Gupta, moderator of the Panel discussion addressing the members and the audience. Bottom – Panel members from left to right : Dr. S. D. Attri, Dr. Shibendu Ray, Dr. Avinash Tyagi, Shri Kamal Kishore, Dr. S. K. Singh and Dr. R. C. Dhiman.



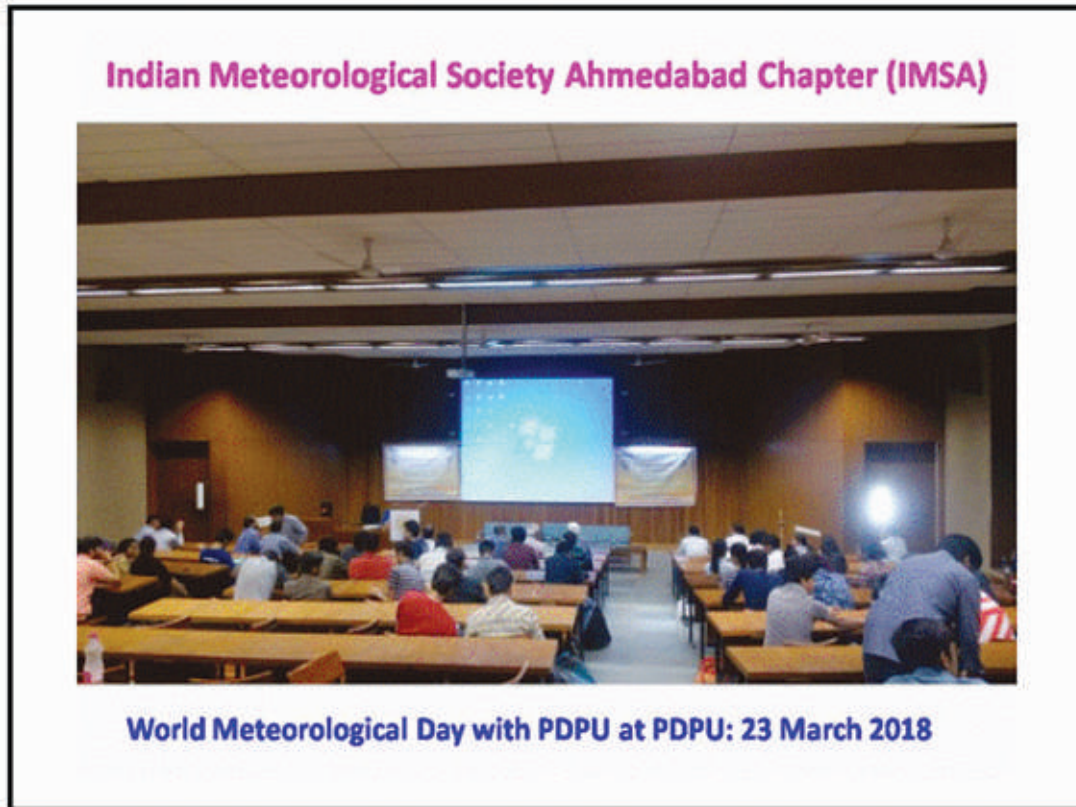
(Prof. T. N. Krishnamurti, 1932-2018)



(Tribute to Prof. T N Krishnamurti)

- (ii) 2 days Environment Educational Excursion trip (03-04 Feb, 2018), & WM day on 23 March, 2018 in Ahmedabad

IMSA and Indian Society of Geomatics-Ahmedabad Chapter (ISG-AC) jointly organized a 2 days Mundra Port during February 03-04, 2018 for its members and their families.



(iii) Regional Environment and Climate (RECO-2018) during 23-24 March, 2018 and Inauguration of new IMS office complex in Bhubaneswar, 23 March 2018.

The Centre for Environment and Climate (CEC) along with IMS Bhubaneswar chapter organized two days workshop on Regional Environment and Climate (RECO-2018) during 23-24 March, 2018 with the theme “Lighting, Thunderstorm and Heat Wave”.



Dr. P. K. Nanda, (Dean-Research, SOA) addressing the gathering during RECO-2018



IMS Local Chapter Meeting after Inauguration of IMS Bhubaneswar Chapter Office & Seminar Hall at CEC Building of SOA.



During Visit of President IMS, Prof. S. K. Dash to New Secretariat of IMS Bhubaneswar Ch. at SOA on 04th May, from Left-Prof. M. R. Das, Prof. G. K. Panda, Prof. S. K. Dash, Prof. U. C. Mohanty, Dr. Sarat Chandra Sahu and Dr. Nihar Ranjan Das

(iii) World Meteorological Day on 23rd March 2018 by Chandigarh Chapter.

Students from school and medical professionals from PGI, Chandigarh were invited on the occasion of WM day on 23rd March, 2018.



Visit of students to IMD, Chandigarh during WM day on 23rd March, 2018

(i) World Meteorological Day on 23 March 2018 by Guwahati Chapter.



IMS Guwahati and RMC Guwahati jointly celebrated the event.

(v) World Meteorological Day on 23 March 2018 by Patna Chapter.



The event was celebrated jointly by IMS, Patna and MC Patna. The whole programme was supported by a local NGO “Gangya”.

(vi) Activities by IMS, Pune Chapters.

IMS Pune chapters arranged several scientific talks by experts and also organized the Annual Monsoon Workshop, National Science Day, IITM –IMD Foundation and special innovative (vii) programme like “Free Maruti Car Checkup Camp at IMD Pune campus”.



Dr. Nitin Karamalkar, VC, SP University, Pune



Prof. Adam H. Sobel, Columbia University



Dr. Prof. Christian Jacob, Monash University, Aus



Dr. Snita Sinukumar, Jehangir Hospital, Pune



Prof. Elena Surovyatkina, PICIR, Germany



Dr. Avinash Bhondawe, Ex President, IMA, Pune



Annual Monsoon Workshop -2017 arranged by IMS Pune

- (vii) Awareness programme for teachers and stake holders on “preparedness of heat wave and lightning” On 24th May 2018, Nagpur



Dr. D. R. Pattanaik, IMD, New Delhi



Dr Gunjan Singh Dalal, MD DNB Internal medicine, Nagpur

(viii) PHOTO GALARY OF IMS EVENT of 06 October, 2018 in Raipur



Awareness programme for teachers and Ozone day celebration by IMS Raipur.

(v) PHOTO GALARY OF IMS EVENT (30 August-01 September, 2018, Pune)

“Teachers’ Training Workshop on Meteorology”, held during 30th, 31st August & 1st September 2018 at IITM, Pune.





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SGS Weather
Best Wishes to
Indian Meteorological Society
Varanasi Chapter
for Hosting

TROPMET 2018

National Symposium



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