

## WORLD METEOROLOGICAL DAY



World Meteorological Day Special Lecture at RMC Chennai

World Meteorological Day 2013 was celebrated on 23rd March, 2013 at all offices of IMD. The theme for WMO day -2013 was "Watching the weather to protect life and property" - Celebrating 50 years of World Weather Watch. Exhibitions were organized in various offices, sub-offices of IMD. Observatories were kept open for general public & school children.



Students at M. C. Ahmedabad

On this occasion, tele-talk, live program and interviews were given to various electronic and print media at H. Q., New Delhi and Regional Meteorological Centres/Meteorological Centre in different states. At RMC Chennai a special lecture was arranged on the theme of the WMO day-2013 by Dr. (Mrs) V. Geethalakshmi, Professor, Agroclimate Research Centre, Tamil Nadu Agriculture University, Coimbatore.

M. C. Ahmedabad organized an exhibition of meteorological instruments and a film show on 'Global Warming' for students, public and media during WM Day. Students/Media personnel visited Meteorological Centre, Ahmedabad on this occasion Dr. Medha Khole, DDGM (WF) delivered a talk on "Watching the weather to protect life and property" on the occasion of WMO Day at All India Radio Pune. The news of celebration of WMO day at RMC Gauhwati was telecast on Doordarshan News (NE) and also published in the newspapers - The Sentinel and Assam Times.

## NATIONAL SCIENCE DAY



Students visited ADGM(R) Pune on Science Day

National Science Day is celebrated in India on 28<sup>th</sup> February each year to mark the discovery of the Raman effect by Indian physicist Sir Chandrasekhara Venkata Raman on 28<sup>th</sup> February, 1928. For his discovery Raman was awarded the Nobel Prize in Physics in 1930. The first National Science Day was celebrated on 30<sup>th</sup> May, 2000. IMD has celebrated this day at H. Q., New Delhi and other offices of the department situated all over India. On this occasion the exhibitions were arranged in office premises. Many students, scientists, scholars, journalists and general public attended the exhibitions and marked their comments with a great enthusiasm.

## EXHIBITION

PAC Kolkata took part in Science Exhibition with the Centre's exhibit in the MoES pavilion which was organized on the occasion of 100<sup>th</sup> Indian Science Congress during 3-7 January, 2013.

"AGRO-VISION – 2013" Workshops, a National Expo & conference as exhibitor from MoES during 24-27 January, 2013, at Reshimbagh Ground, Nagpur (Maharashtra). Shri J. P. Sable, S. A, Agrimet Division participated & explained the benefits of Agromet Advisory Services to farmers, researchers & students.



# मौसम विज्ञान विभाग समाचार

# IMD NEWS

INDIA METEOROLOGICAL DEPARTMENT  
(Ministry of Earth Sciences)

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Lighting of lamp by Hon'ble Minister, Secretary MoES and DG IMD

## IMD FOUNDATION DAY CELEBRATION

The 138<sup>th</sup> Foundation day of India Meteorological Department was celebrated on 15<sup>th</sup> January, 2013 in the IMD H. Q., New Delhi. This day is celebrated with a view to highlight the achievements of the department and to promote awareness about new initiatives taken and also to focus on the future plans for improving the weather and climate services of the department.

Shri S. Jaipal Reddy, Hon'ble Minister for Earth Sciences was the Chief Guest. The function was presided over by Dr. Shailesh Nayak, Secretary, Ministry of Earth Sciences. A new feather in IMD's cap was added with the launch of 'Weather on mobile service' by Hon'ble Minister. He said although department has progressed in different fields of atmospheric science but the increased needs of the society for timely, authentic and directly usable information on weather and climate have thrown up new challenges.

Dr. Shailesh Nayak, Chairman ESSO and Secretary, Ministry of Earth Sciences appreciated the new initiative of the department in the development of an application called "Indian-Weather" for smart phones and TABS based on android. This will ensure availability of location specific weather forecast to the public at the touch of an icon. This will prove a major milestone in Public Weather Services provided by IMD.

Dr. L. S. Rathore, Director General of Meteorology highlighted various achievements of the department. The 5-day district-wise quantitative forecast of rainfall, temperature, wind, cloud amount and humidity included in district-wise agro-meteorological advisories will be very beneficial for the farming communities. IMD has taken up new initiatives for massive modernization and up-gradation of equipment, observatories, computing facilities, technology, services and human resource development. Significant improvement in accuracy of weather forecast has been achieved by using latest technology.

Shri S. Jaipal Reddy the Hon'ble Minister for Science and Technology and Earth Sciences also felicitated and presented memento to Eminent Scientist and former DG of IMD, Dr. R. R. Kelkar. On this occasion three departmental publications were released. Various competitions were organized to create awareness and spread the knowledge of meteorology among school children. The Hon'ble minister, MoES encouraged the winning students by giving them citations and prizes. An exhibition highlighting IMD's history and development was also arranged for visitors.



Hon'ble Minister presenting memento to former DGM Dr. R. R. Kelkar

## Quarterly Newsletter

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## BEST RMC AWARD



RMC, New Delhi has been adjudged the best RMC for the year 2013. Dr. O. P. Singh, Sc. 'F' & DDGM received the award from Hon'ble Minister for Science and Technology and Earth Sciences during the IMD Foundation day celebration on 15<sup>th</sup> January, 2013.

## ALL INDIA IMD SPORTS MEET



Dr. L. S. Rathore, DG, IMD, Dr. L.R. Meena Chairman NOC along with Shri Ishwar Das Lohani, Hon'ble Speaker, Vidhan Sabha M.P. and other distinguished guests during inauguration

The 12<sup>th</sup> All India IMD Sports Meet 2012-13 was organized under the chairmanship of Dr. L. R. Meena, Sc. 'F' & President, IMD Recreation Club, New Delhi to promote the spirit of competition, harmony and brotherhood among the participants. It was hosted by M. C., Bhopal at Sports Authority of India Campus, Bhopal during 7<sup>th</sup> to 10<sup>th</sup> March, 2013. The officers and staff of IMD and other Earth System Science Organization presented their skills in various Sports events, i.e., Cricket, Volley Ball/Shooting Ball, Carrom, Chess, Table Tennis, etc. Dr. L. S. Rathore, DG, IMD inaugurated the Sports Meet on 7<sup>th</sup> March, 2013 in the presence of Chief Guest Shri Ishwar Das Lohani, Hon'ble Speaker, Vidhan Sabha, Madhya Pradesh and Special Guest Shri R. K. Naidu, Regional Director, SAI, Bhopal. The vote of thanks to all the guests was given by Shri Arvind Kumar Singh, Honorary Secretary, NOC. Dr. L. R. Meena, Sc. 'F' & Chairman, NOC presented the prizes to the winners & runners-up of different sports events including Team Trophies during closing ceremony held at SAI campus.

## INAUGURATION OF FMC AT KANYAKUMARI OBSERVATORY



DG, IMD, DDGM, RMC Chennai & Shri S. Nagarajan, I.A.S., during inauguration of FMC Building

This new building for Field Maintenance Centre at Kanyakumari Observatory was inaugurated on 8<sup>th</sup> February, 2013 by Dr. L. S. Rathore, DGM in the presence of Dr. Y. E. A. Raj, DDGM, Dr. R. Asokan, Sc. 'E', RMC Chennai Shri Nagarajan, I.A.S., District Collector, Nagercoil, E. E., CPWD, Shri K. K. Peshin and dignitaries from various other Institutions participated.

## ACHIEVEMENTS



Hon'ble President of India Shri Pranab Mukerjee during convocation

Dr. R. S. Dattatrayam, Sc. 'F' and Head (Center for Seismology) has been awarded the Ph.D degree in Geology by University of Delhi in its 90<sup>th</sup> Annual Convocation held on 19<sup>th</sup> March, 2013 in the presence of Shri Pranab Mukerjee, the Hon'ble President of India as chief guest.

Shri Anand Sharma, Sc. 'E' was awarded first prize for best presentation at the National Workshop in Hindi organized by Ministry of Earth Sciences at New Delhi on 22<sup>nd</sup> March, 2013.

M. C. Jaipur was adjudged and awarded the best Meteorological Centre on the occasion of 138<sup>th</sup> IMD Foundation day celebration at H.Q. on 15 January 2013.

## NATIONAL DROUGHT POLICY MEETING AT WMO



Dr. L. S. Rathore, DGM and other experts at Geneva

Due to concerns with climate change, projected increases in the frequency, intensity, and duration of droughts and resulting impacts on many sectors, in particular food, water, and energy, there is cause of concern regarding the lack of drought preparedness and appropriate drought management policies for virtually all nations. In order to address the issue of national drought policy, the World Meteorological Organization (WMO) has organized a "High Level Meeting on National Drought Policy (HMNDP)" during 11 - 15, March 2013 at Geneva. Dr. L. S. Rathore, DGM represented India in National Drought Policy at WMO Geneva (Switzerland) during 11-15 March, 2013 which was attended by heads of State and Government, Ministers, Heads of Delegations and Experts.

It was recommended that all Governments around the world develop and implement National Drought Management Policies, consistent with their national development laws, conditions, capabilities and objectives. The national drought policy also require periodic evaluation and revision in order to incorporate new technologies, lessons learned from recent drought events, changes in vulnerability and so forth.

Dr. R. S. Dattatrayam, Sc. 'F' participated in video-conferencing meeting for finalizing the syllabus for 'Integrated Basic Meteorological Training Course (IBMTC)', held under the chairmanship of Dr. L. S. Rathore, DG, IMD on 2<sup>nd</sup> and 9<sup>th</sup> January, 2013.

Dr. L. S. Rathore, DGM, Shri B. K. Bandyopadhyay, DDGM (S), and Dr. M. Mohapatra, Sc. 'E' participated in the meeting on National Facility of Airborne Research (NFAR) organized by IITM, Pune at MoES, New Delhi on 16<sup>th</sup> January, 2013.

Dr. M. Mohapatra, Sc. 'E' participated in a meeting in INCOIS, Hyderabad in connection with operationalisation of Storm Surge and Coastal Inundation model developed by INCOIS, Hyderabad on 18<sup>th</sup> January, 2013. He made presentation on current status and future plan of storm surge prediction in India.

## AMR, ACR &amp; ATR MEETINGS



AMR, ACR & ATR Meetings at Goa

The Annual Monsoon Review (AMR), Annual Cyclone Review (ACR) and Annual Technical Review (ATR) meetings were held at Meteorological Centre, Goa during 23 – 25 January, 2013. The meetings reviewed the activities of the department pertaining to cyclones, monsoons and administrative aspect during the past year and future plans to improve the weather services provided to various users.

## ANNUAL REVIEW MEETING ON FASAL SCHEME

Agrimet Division in co-ordination with Acharya N.G. Ranga Agricultural University (ANGRAU) has organized 6th Annual Review Meeting (ARM) of Forecasting of Agricultural output using Space, Agro meteorology and Land based observations (FASAL) scheme during 18-20 March, 2013 at ANGRAU, Rajendranagar, Hyderabad. The main objectives of the meeting were to review and evaluate the performance of FASAL scheme in terms of crop yield forecasting generated at district and State levels and make strategies for improvement of the models. Principal Nodal Officers (PNO) and Nodal officers (NO) from various Agromet Field Units (AMFUs) located in the State Agricultural Universities, Indian Council of Agricultural Research (ICAR) Institutes and Indian Institute of Technology (IITs) and Officers-in-Charge from Agromet Advisory Service (AAS) Units of IMD from various states have attended the meeting. All the above mentioned issues were addressed at various levels during the meeting. In addition, technical discussions were carried out in depth on the issues like use of advanced statistical techniques like non-linear regression and use of crop growth stimulation models to increase the accuracy of crop yield forecast.

## संसदीय राजभाषा समिति द्वारा निरीक्षण

माननीय संसदीय राजभाषा समिति द्वारा दिनांक 17 जनवरी, 2013 को प्रादेशिक मौसम केन्द्र, मुम्बई का निरीक्षण किया गया जिसमें महानिदेशक महोदय डॉ. एल. एस. राठौर ने भाग लिया। इस निरीक्षण कार्यक्रम में श्री यू. पी. सिंह, निदेशक, सुश्री रेवा शर्मा वरिष्ठ हिन्दी अधिकारी तथा हिन्दी कार्मिक भी उपस्थित रहे।

## WORKSHOP ON "Fog Monitoring ..."



One day users interactive Workshop on "Fog Monitoring, forecasting and Dissemination system of 2012-13" was organized by MWO Palam on 11<sup>th</sup> January, 2013 at Conference Hall, Udan Bhavan, IGI airport. Dr. L. S. Rathore DGM was the chief guest in the introductory session of the workshop. Dr. O. P. Singh, DDGM, RMC New Delhi, Dr. R. K. Jenamani, Sc. 'E', Shri S. B. Sharma, GM, Mr. P. Rao, CEO & Mr. Narayan Rao, Vice-Chairman, DIAL also addressed the participants. Besides IMD the participants from Airports Authority of India, Indian Air force, Airlines, DIAL also participated.

## REVIEW OF SW MONSOON 2012



Brainstorming workshop in progress

National Weather Forecasting Centre organized the Brainstorming Workshop "Review of Southwest Monsoon 2012" on 26<sup>th</sup> March, 2013 at Arnav Hall Prithvi Bhawan, Lodi Road, New Delhi. The workshop was designed to assess the performance of various aspects of statistical & NWP models for monsoon rainfall 2012 in different ranges and to formulate the strategy for prediction of monsoon 2013. The workshop was inaugurated by Dr. Shailesh Nayak, Chairman ESSO and Secretary MoES. Dr. L. S. Rathore, DG, IMD presided over the function. It was attended by scientists from MoES and other institutions like IIT Delhi, IITM Pune, CMMACS Bengaluru, SAC Ahmedabad, NCMRWF, C-DAC Bengaluru, NAL Bengaluru, INCOIS Hyderabad, IISc Bengaluru, Indian Air Force and Indian Navy. A special session was arranged to get feedback & assess future requirements of user organizations, i.e., CWC, Ministry of Agriculture and Ministry of Home Affairs.

## WORKSHOP ON "STORM SURGE AND COASTAL INUNDATION"



Delegates from IMD and other organisations during the workshop

A national workshop on "Storm surge and Coastal Inundation modelling and Forecasting" over North Indian Ocean region was held on 11<sup>th</sup> February, 2013 at IMD, New Delhi. The workshop was inaugurated by Dr. Shailesh Nayak, Secretary, MoES and Chairman, Earth System Science Organisation (ESSO). Around 30 delegates from IMD, NCMRWF, TERI, ICMAM, IAF, Indian Navy participated in this workshop. Dr. M. Mohapatra, Sc. 'E' delivered a presentation on the 'Current status and future plans of IMD for Storm Surge and Coastal Inundations Modelling and Forecasting over North Indian Ocean Region.

**Dr. N. Chattopadhyay**, Sc. 'F' attended a conference on "Climate variability and cash crops of Maharashtra" organized by The Energy Research Institute at Niyojan Bhavan, Thane, Maharashtra on 18th January, 2013.

**Shri B. Puttanna**, Sc. 'E' attended one day workshop on Karnataka Geographical Information System (K-GIS) inaugurated by Dr. Shailesh Nayak, Secretary MoES at Bangalore on 23 January, 2013.

**Dr. S. C. Sahu**, Sc. 'E', M. C. Bhubaneswar attended the inception workshop on 'climate risk management in urban areas through Disaster Preparedness and Mitigation' project in Bhubaneswar held on 30th January, 2013 organised by Housing and Urban Development Department, Govt. of Odisha.

**Dr. Y. E. A. Raj**, DDGM, RMC Chennai attended the National Training Programme on 'Weather based management of Livestock and Poultry' on 4th March, 2013 conducted by Tamilnadu Veterinary and Animal Sciences University, Chennai and gave inaugural address.

## USER WORKSHOP ON DWR

A User workshop on "Utilisation of DWR products in Nowcasting of Severe Weather Phenomena" was conducted at DWR, Kolkata on 18 - 19 February, 2013 for the forecasters from various MCs and RMCs all over India.

## OPERATIONAL AGROMET TRAINING

Agricultural Meteorology Division, India Meteorological Department (IMD), Ministry of Earth Sciences, Government of India in collaboration with the World Meteorological Organization (WMO) organized training programme from 28<sup>th</sup> January to 9<sup>th</sup> February, 2013 on "Operational Agrometeorology for serving end users requirement" for capacity building in the agriculture sector of the Global Framework for Climate Services (GFCS). The training was specially designed for the professionals in East African (Burundi, Ethiopia, Kenya, Rwanda, Tanzania) and Asian participants (Bangladesh, Myanmar, Sri Lanka, and Thailand). The training was conducted at Meteorological Training Institute, India Meteorological Department, Pashan, Pune, Maharashtra, India. Ideally the training was drawn upon those scientists working in operational Agro-Meteorological Advisory Services and those who provide climate/weather information products and services.

## Trainees from Asia Pacific Region

Fourteen participants from 8 countries in Asia-Pacific region, undergoing training in "Satellite Meteorology and Global Climate" of SATMET-8 course at Space Applications Centre [ISRO], Ahmedabad visited DWR Chennai, along with two staff members, as part of their south India study tour on 27<sup>th</sup> February, 2013 and were explained about the functions of DWR and utility of its products.

## Trainees from AFAC, Coimbatore

Smt. Suman Goyal, Sc. 'E', Shri Virender Singh, Sc. 'E', Shri R. K. Giri, Sc. 'D', Shri A. K. Mitra, Sc. 'C' imparted training on Satellite Meteorology entitled "Interpretation of satellite imageries including recent development & Satellite Data Processing" to a group of 5 trainees from AFAC, Coimbatore on 4<sup>th</sup> March, 2013.

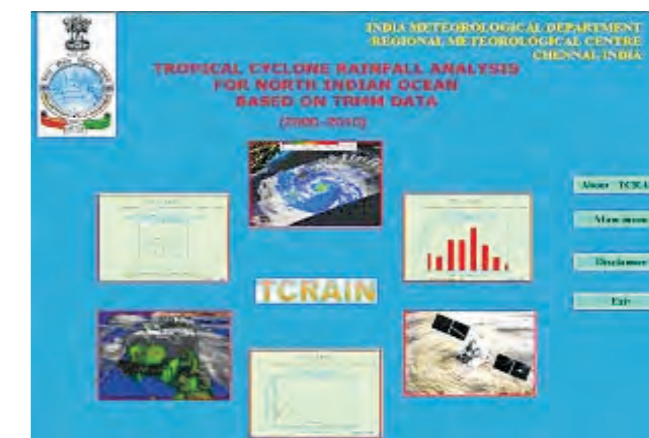
## LIVESTOCK PRODUCTION AND MANAGEMENT TRAINING

Agricultural Meteorology Division organized training programme on "Weather based Agromet Advisories for livestock production and management" from 18<sup>th</sup> to 23<sup>rd</sup> February, 2013. Twenty three participants from Agromet Field Units located in different parts of the country attended the training programme. Eminent Scientists from, IMD, Indian Veterinary Research Institute, Mahatma Phule Krishi Vidyapeeth, Rahuri, Central Institute of Fisheries Education, Mumbai, State Veterinary University, Veterinary College, Animal Husbandry Department acted as faculties and delivered lectures. The course covered the topics related to weather and livestock management. Field trip was also arranged at Gowardhan dairy farm, Parag milk Ltd. Manchar, Pune. Participants interacted with the scientists at the Institute and understood various processes involved in milking and allied activities.

## MICROWAVE SATELLITE DATA TRAINING

Satmet Division, has conducted a training program on "Microwave Satellite data and its applications" under Advance Professional Knowledge Course for Air Force trainees during 4<sup>th</sup>-5<sup>th</sup> March, 2013.

## INFRASTRUCTURE DEVELOPMENT



- CWRC, RMC Chennai designed, developed and executed an in-house project – TCRAIN an analytical tool that provides rainfall characteristics of Tropical Cyclones over North Indian Ocean for various intensity stages of 43 cyclones that occurred during the period 2000-2010 using TRMM based rainfall data. The tool provides three products, viz., (i) Frequency distribution of rain rates within 500 km from the TC centre (ii) Azimuthally averaged radial profiles of mean rain rates within 500 km from the TC centre and (iii) Quadrant-wise mean rain rates within 200 km from the TC centre for each intensity stage of a cyclone in graphical form through a menu-driven user interface. TCRAIN CD was released by the DG, IMD on 21<sup>st</sup> January, 2013 at Goa, during ATR Meeting.
- Hardware for the Data Center for archival of data from Seismic & GPS stations operated by various national agencies has been established.
- Dissemination of Oceansat-II Scatterometer wind data in BUFR format over GTS has been started at SATMET in the month of March, 2013 operationally.
- A Field Maintenance Centre at Gadag was constructed which was inaugurated on 15<sup>th</sup> March, 2013 by Dr. Y. E. A. Raj, DDGM, RMC Chennai.

## PROJECT EVALUATION

Thirty four Coal Mining, 39 Thermal Power and 116 Industrial Projects were evaluated for environmental clearance.

## PUBLICATIONS

Seventeen (17) Research Papers have been published in Special Issue of MAUSAM on "Proceedings of National Conference on Bay of Bengal Tropical Cyclone Experiment (BOBTEX 2011), Vol. 64, No. 1 (January, 2013). A quantitative analysis of KALPANA-1 derived water vapor winds and its impact on WP model by A.K MITRA published in Meteorology and Atmospheric Physics (Springer).

**Dr. R. S. Dattatrayam**, Sc. 'F' and Head, Center for Seismology and Dr. Rajesh Prakash, Sc. 'E' attended the Indo-Taiwan Workshop on "Earthquake Early Warning System", held during 16 -19 January, 2013 at Prithvi Bhawan, New Delhi and IIT, Roorkee. Dr. Dattatrayam also made a presentation on 'National Seismological Network and Real Time Earthquake Monitoring in India'.

**Shri B. K. Bandyopadhyay**, Sc. 'F' visited Colombo, Sri Lanka to participate in the 40<sup>th</sup> Session of WMO/ESCAP Panel on Tropical Cyclones from 25<sup>th</sup> February to 1<sup>st</sup> March, 2013.

**Dr. A. Kashyapi**, Sc. 'E' has been on deputation to Dhaka, Bangladesh for workshop on "Impact pathways for Climate Change, Agriculture and Food Security programme in South Asia" from 26 to 28 February, 2013 and presented paper entitled "Climate change scenario in India-Impact on Agriculture and Food Security".

**Dr. Prakash Khare**, Sc. 'D' visited Bogor, Indonesia to participate in the WMO Regional Training Seminar for National Trainers of RA-II and RA-V from 26<sup>th</sup> February to 7<sup>th</sup> March, 2013.

**Dr. S. D. Attri**, DDGM (O) visited Geneva, Switzerland from 18 to 20 March, 2013 to participate in the Symposium on Global Atmosphere Watch, GAW 2013. He presented his paper on "Environmental Monitoring Activities in India".



Dr. S. D. Attri delivering lecture at WMO

#### DISTINGUISHED VISITORS

**Dr. C. Chattopadhyay**, Director, National Centre for Integrated Pest Management (NCIPM) visited and interacted with the officers of Agrimet Division on the proposed collaboration between IMD and NCIPM on the use of weather data and weather forecasting for pest and disease forewarning on 13<sup>th</sup> February, 2013 at Agrimet Division, Pune

**Dr. P. K. Aggarwal**, Regional Programme Leader, South Asia, Climate Change, Agriculture and Food Security (CCAFS), International Water Management Institute (IWMI), New Delhi visited Agrimet Division and discussed on the aspects and collaboration with IMD on "Climate Smart Village" on 14<sup>th</sup> February, 2013.

**Dr. Mike Bonell**, Professor, Univ. of Dundee and Dr. Ravi Bhalla, Sr. Research Fellow Foundation for Ecological Research, Advocacy and Learning (FERAL) visited RMC Chennai and had a meeting with Dr. Y. E. A. Raj, DDGM, RMC Chennai on 11<sup>th</sup> February, 2013 in connection with his Changing Water Cycle Research Programme.



Dr. Mike Bonell and his colleagues discussing with Dr. Y. E. A. Raj

**Prof. Mark Howden**, Chief Research Scientist, Commonwealth Scientific and Industrial Organization (CSIRO), Australia, Dr. Uday visited RMC Chennai along with Dr. A. Arivudai Nambi and three officials from M. S. Swaminathan Research Foundation, Chennai visited RMC Chennai on 20<sup>th</sup> March, 2013. DDGM convened an interactive session with senior officers and officers-in-charge at RMC Chennai during the visit to discuss on climate project of CSIRO, Australia.



Discussion of climate project at RMC, Chennai

#### Visitors from African Countries

Delegation from Africa visited the IMD, H. Q., New Delhi on 14<sup>th</sup> January, 2013. The DGM welcomed the delegation in the conference Hall. Dr. M. Mohapatra, Sc. 'E' gave a lecture-cum-presentation on "Cyclone: Its Overview and Mitigation measures at IMD". The trainees also visited various divisions at H. Q., like, NWFC, ISSD, NWP, Satmet, etc.

**Shri B. Puttanna**, Director-In-Charge, delivered talk on Early warning System in Disaster Management at District Training Institute, Banashankari Bangalore on 3<sup>rd</sup> January, 2013.

**Shri S. Sen**, Sc. 'E' delivered lectures on Astronomy at BIET, SURI, Birbhum in Inspire Science and Astronomy camp sponsored by DST and organised by Bengal Engineering and Science University during 7<sup>th</sup> and 8<sup>th</sup> January, 2013.

**Dr. R. Suresh**, Sc. 'E', AMO Chennai delivered guest lectures on "Weather radars and their applications" on 8-9, January 2013 to Academicians and PG students, in the first SERB Training School on Fundamentals of Radars for Atmospheric Research (FOFAR).

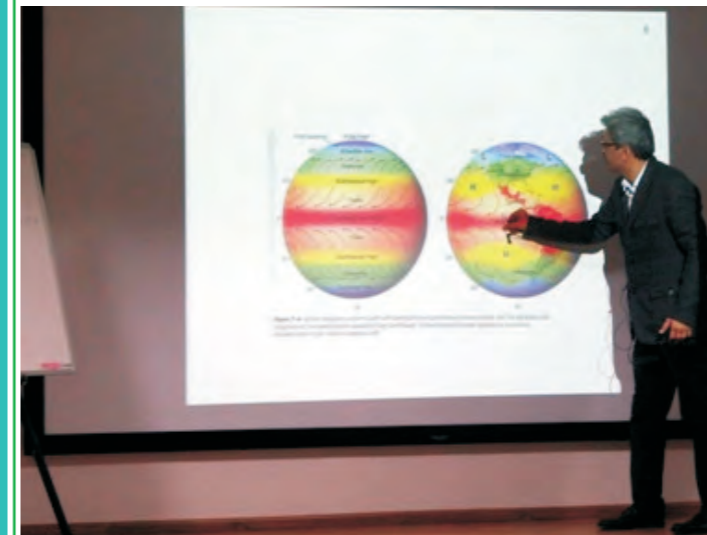
**Dr. R. K. Jenamani**, Sc. 'E' MWO Palam, delivered an invited lecture on 'Making Airports across Indo-Gangetic Plains Fog and Smog proof for safe and timely flight operation : IGI Airport, Delhi a role Model' on 11<sup>th</sup> January, 2013 at India International Centre, Lodhi Road, New Delhi.

**Dr. Medha Khole**, DDGM (WF) delivered a lecture on the topic 'Principles of Weather Forecasting' at 'GEOFEST' organized by Department of Geography, S. P. College on 18<sup>th</sup> January, 2013.

**Shri A. K. Mitra**, Sc. 'C' Satmet Division, has delivered the lecture on the WMO training program on "Operational Agrometeorology for serving end users requirement" for Foreign Trainees at Pune During 4-5 February, 2013.

**Dr. A. K. Shukla**, Sc. 'F' was on tour to Patna during 6-8 February, 2013 to deliver a lecture on "Engineering Seismology and Earthquake Hazard Evaluation" in a Training Course for Training of Trainers (ToT) organized by Bihar State Disaster Management Authority (BSDMA), Government of Bihar through BMTPC.

**Dr. Y. E. A. Raj**, DDGM, RMC Chennai participated in the inaugural function of "JETMATRIX 13" National level symposium organised by Mamallan College of Technology, Sriperumbudur and delivered lecture on Global Warming and Climate Change on 26<sup>th</sup> February, 2013.



Shri Anand Sharma delivering lecture

**Anand Sharma**, Sc. 'E' and Head, Meteorological Centre, Dehra Dun delivered Guest lecture on Application of Physics to meteorology at the Unison World School on National Science Day, i.e., 28<sup>th</sup> February, 2013.

**Dr. S. D. Attri**, DDGM (O) delivered lead talk on "CLIMATE CHANGE & EXTREMES" in International Geographical Union (IGU) Conference on Geoinformatics for Biodiversity and Climate Change on 14 March, 2013 at MDU Rohtak (Haryana).

**Shri A. K. Sharma**, Sc. 'F' delivered an invited talk on "Utilization of Satellite product in Weather Forecasting" in the symposium organized by Indian Society of Remote Sensing held at Bengaluru during 16-17 March, 2013.

**Shri B. Mukhopadhyay**, DDGM (C) delivered an invited talk entitled, "Watching the Weather to protect Life and Property" on 22<sup>nd</sup> March, 2013 at IITM, Pune.

#### Best Poster Presentation



Dr. B. N. Goswami, Director IITM giving award to Ms. Barnali Das

**Ms. Barnali Das** was awarded for Best Poster Presentation for the paper "Weather based yield forecast of kharif rice for districts of Jharkhand" at IMSP Annual Workshop during 19-20 February, 2013.

**Six research papers** related to Seismic Hazard evaluation presented in 2nd International Symposium on "Advances in earthquake sciences (AES 2013)", held on 1-2 February, 2013 at Institute of Seismological Research, Gandhi Nagar, Gujarat.

**Shri S. V. Kadam** and Smt. B. A. Roy from ADGM (R), Pune participated in the IMS Annual Monsoon 2012 workshop on 19-20 February, 2013 held at IITM, Pune and presented 3 papers as poster presentation.

**A paper** "Deterministic seismic Hazard assessment along SONATA and surroundings" by H. S. Mandal, P. K. Khan and A. K. Shukla was presented during 14-16 February, 2013 at Indian School of Mines, Dhanbad, Jharkhand. The full paper has been published in the proceedings of the National Conference in the Recent Advances in Mathematics and its Applications, RAMA-2013.