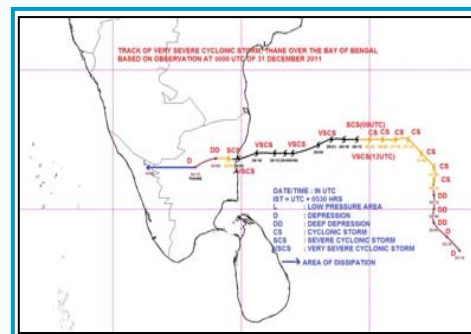
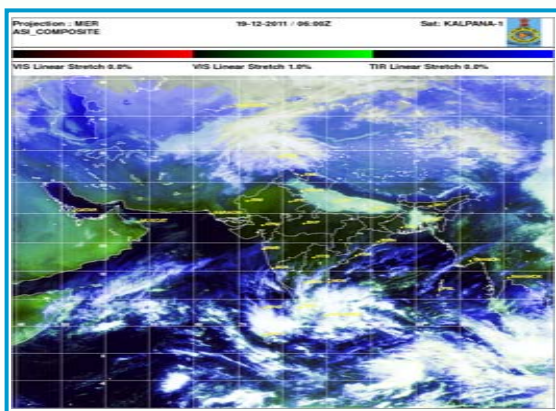


CYCLONIC DISTURBANCE OVER THE NORTH INDIAN OCEAN

There were five cyclonic disturbance over north Indian ocean during October to December 2011. There were three cyclonic disturbance, viz. a cyclonic storm "KEILA" and two deep depression during October-December 2011 over the Arabian sea. The Bay of Bengal experienced one deep depression and a very severe cyclonic storm, "THANE" during same period. Out of these disturbances only the cyclone, THANE crossed Indian coast. The very severe cyclonic storm, THANE developed over the Bay of Bengal during last week of Dec. It crossed north Tamil Nadu and Puducherry coast between Puducherry and Cuddalore between 0630-0730 hrs IST of 30th December, 2011 with a wind speed of 120-140 kmph.



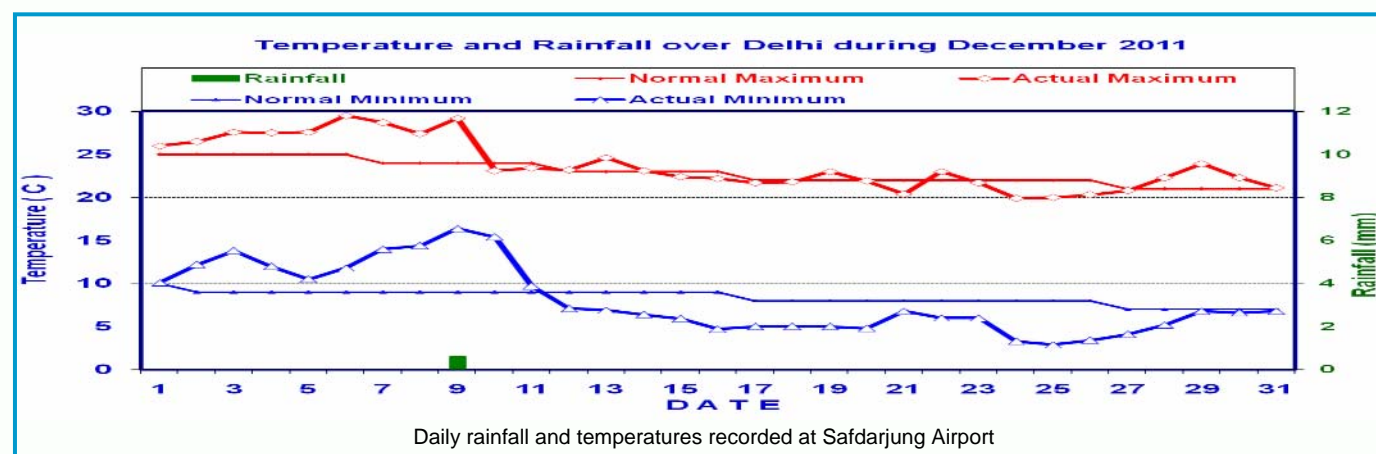
WEATHER OVER DELHI DURING DECEMBER 2011



The month of December started with near normal temperatures. The temperature became above normal by 3 December. The maximum temperature recorded on 5th December was 29.5 degree C which is the new all time record for the month of December, the previous record being 29.3 degree C recorded on 3 December 1987. The minimum temperatures also remained above normal to appreciably above normal till 10 December. A western disturbance moved across western Himalayas during 6-9 December. The passage of WD resulted in cold northwest to northerlies set in over the area from 10 December. The maximum temperatures came down near to their normal values, the minimum temperatures fell to appreciably below normal and remained so till 29th of the month. The minimum temperature was normal to appreciably below normal till end of the month. There were four days of cold wave

conditions during the month. The lowest minimum temperature of 02.9° C was recorded on 25 December 2011. The all time record of lowest minimum temperature during the month is 1.1° C recorded on 26 December 1945. Both the minimum and maximum temperatures increased towards end of the month as another WD approached the region. The mean maximum and minimum temperatures for the month of December 2011 were 23.7°C and 08.0°C, which were close to the long period averages of 23.0° C and 8.2° C, respectively.

Extensive dense fog conditions were experienced over plains of north and northwest India during 06-23 December 2011. Another spell of dense fog was observed over Delhi and neighbourhood during 27-31 Dec 2011. In total, the IGI airport experienced dense fog on 7 days during 19-20, 22-23 and 27-31 December with a total duration of around 51 hours.



Editorial Team

S/Shri U.P. Singh, S.C. Sharma, Subhash Khurana, Dinesh Khanna, Gopi Chand, Raj Kumar Verma, Dhan Singh, Brij Bihari

Published by

India Meteorological Department, Mausam Bhawan, Lodi Road, New Delhi - 110 003 and Printed at ADGM(R), Pune

Tel. : 24651287; Telefax : 91-11-24699216 & 91-11- 24623220

Email : newsletter_imd@yahoo.com



मौसम विज्ञान विभाग समाचार

IMD NEWS

INDIA METEOROLOGICAL DEPARTMENT
(Ministry of Earth Sciences)

Quarterly Newsletter

Volume 4

Number 4

OCT-DEC 2011

मौसम विज्ञान के महानिदेशक द्वारा नव वर्ष का संदेश



नव वर्ष के आगमन के सुअवसर पर मैं आपको तथा आपके परिवार के लिए विगत वर्षों की भौति इस वर्ष भी सुख, समृद्धि व खुशियों से परिपूर्ण जीवन की मंगल कामना करता हूँ। वर्ष 2011 हमारे लिए अनेक उपलब्धियों का वर्ष रहा है। डॉप्लर मौसम राडार एवं स्वचालित मौसम स्टेशनों को स्थापित करने के अपने लक्ष्य को प्राप्त करने में हम सफल रहे हैं। डॉप्लर मौसम राडार द्वारा बहु-उपयोगी सूचनाएँ एवं उपग्रह से प्राप्त उच्च गुणवत्ता वाले मौसम संबंधी विभिन्न उत्पादों के प्रयोग द्वारा मौसम के पूर्वानुमान में आशातीत सुधार हुआ है। सटीक चक्रवात चेतावनी से देश के तटीय क्षेत्रों में चक्रवातों से होने वाली जान-माल की हानि में काफी कमी हुई है। विमान परिचालन के लिए विभिन्न अंतर्राष्ट्रीय हवाई अड्डे को अद्यतन तकनीकी उपकरणों के द्वारा विमान संचालन में अपेक्षित सुधार हुआ है। संख्यात्मक मौसम पूर्वानुमान के मॉडलों के प्रयोग से मौसम का तात्कालिक पूर्वानुमान सफलतापूर्वक दिया जा रहा है। केन्द्रीय सूचना एवं संसाधन प्रणाली का विभिन्न प्रकार के मौसम ऑकड़ों, एन. डब्ल्यू. पी. उत्पादों, उपग्रह उत्पादों तथा डॉप्लर राडार चित्रों के भंडारण तथा प्रबंधन में अभूतपूर्व योगदान है। उत्तर पूर्वी भारत में भूकंप के आँकलन के लिए आधुनिक टैलीमीट्री संजाल की स्थापना की गई है। किसानों को मौसम संबंधी पूर्वानुमान जिला स्तर पर उपलब्ध कराना हमारी अनुपम उपलब्धि रही है।

आप सभी के अमूल्य योगदान एवं सहयोग द्वारा हमने अपनी बहुत सी महत्वाकांक्षी परियोजनाओं को जिम्मेदारी के साथ क्रियान्वित करते हुए पूरा किया। निःसंदेह विगत वर्ष हम सभी के लिए अगणित उपलब्धियों का वर्ष रहा है। हमें पूर्ण विश्वास है कि विगत वर्ष की तरह इस वर्ष भी हम अपने कर्तव्यों को पूरी निष्ठा एवं ईमानदारी से निर्वह करते हुए अपने विभाग को नई बुलन्दियों तक ले जाने में सफल होंगे।

सादर
डॉ अजित त्यागी

INTERNATIONAL COOPERATION

ECTT-GFCS- 2011

The first meeting of the Executive Council Task Team on the Global Framework for Climate Services (ECTT-GFCS) was opened on 13 October 2011 at WMO Headquarters in Geneva and was addressed by Mr. Michel Jarraud, Secretary-General of the WMO. In his opening remarks, the Secretary-General of WMO, pointed out that the GFCS was established by WMO in the 60s. There is need to engage and collaborate with the UN family and partners, including key stakeholders. AVM (Dr.) Ajit Tyagi who is Member of Executive Council Task Team on the Global Framework for Climate Services and Permanent Representative of India with WM presented India during 13-15 October 2011.



In this issue

नव वर्ष का संदेश	P1
INTERNATIONAL COOPERATION	P1
ACHIEVEMENTS	P2
ART AND QUIZ CONTEST	P2
CROPPING SYSTEM MODELS	P3
VISIT ABROAD	P4
WORKSHOP ON SEISMIC HAZARD MICROZONATION	P5
NATIONAL CONFERENCE (BOBTEX-2011)	P6
DISTINGUISHED VISITORS	P7
SEMINAR ON POLAR METEOROLOGY	P8
NATIONAL CONFERENCE ON SATELLITE METEOROLOGY	P10
OBITUARY	P11
WEATHER HIGHLIGHTS	P12

CAPACITY BUILDING WORKSHOP

A workshop capacity development requirement for GFCS was held at Geneva, Switzerland from 10-12 October 2011. The focus of this first meeting was further exploring the capacity development requirements for NMHSs to play a key role in the GFCS. It recognized that some NMHSs are already delivering climate services on a range of temporal scales whilst others are struggling to even collect quality control and archive observations. The majority of the participants for this first workshop were from the Climate Services Information System (CSIS) community. The outcome of the workshop was a better definition of the capacity development requirements of NMHSs in least developed, developing countries or Small Islands Developing States (SIDS) to allow them to fulfill their role in GFCS and provide options on how to present their requirements as part of the overall GFCS implementation plan.

ACHIEVEMENTS

RMC Mumbai was presented “Best Work in official language award” by “Nagar Rajbhasha Karyanvayin Samiti”, Mumbai on 28 Oct 2011.

Dr. A. K. Shukla, Head, EREC, has been nominated by State of Bihar as member of Technical Committee of Seismological Network to be setup at Bihar and attended first meeting held on 13 Dec. 2011 at Bihar State Disaster Management Authority (BSDMA), Patna.



Dr. Medha Khole receiving “Vocational Excellence Award”

Dr. Medha Khole, DDGM(WF) was conferred upon “Vocational Excellence Award” by Rotary Club of Pune from Dr. Budhijarao Malik, Eminent Agriculturist on 23rd December 2011.

Shri Anand Kumar Sharma, Scientist-E, Meteorological Centre, Dehra Dun was awarded Bharat Jyoti Award and Certificate of Excellence by India International Friendship Society.

VIGILANCE AWARENESS WEEK

The Vigilance Awareness Week was observed by IMD, from 31 Oct to 5 Nov, 2011. The observance of the Vigilance Awareness Week was commenced with the pledge on 31 Oct, 2011. This year the theme of observing Vigilance Awareness Week was "Participative Vigilance". DG, IMD administered oath at Office premises. Vigilance Awareness Week is celebrated in memory of Sardar Vallabh Bhai Patel. As we are well aware, there is an increasing concern about corruption eroding the basic values of life. It has not only a negative effect in social dynamics but also erodes the value system established in the country. It is important that the younger generation who has to play a pivotal role in the development of the country needs to be educated on the urgency to fight against such unethical practices.

EXHIBITION

M. C. Bhopal has participated in the exhibition organized by National Science and Technology Expo. (CCRD N. Delhi) during 11-13 Dec. 2011 held at Shyamla Hills, Bhopal and was adjudged the best stall in the Science category.

PROJECT EVALUATION

EMRC evaluated sixty one (61) Thermal Power, one hundred eighteen (118) Industrial and forty four (44) Coal Mine projects referred to this Department by the Ministry of Environment & Forests, New Delhi.

LIVE PROGRAM

- **Shri B. Puttanna**, Director participated in a live program regarding activities of M. C. Bangalore at AIR station, Bangalore and replied weather enquiries on 3rd Nov 2011.
- **Dr. Y. E. A. Raj**, DDGM participated in the programme organised by Doordharshan Kendra, Chennai on Monsoon and Cyclones on 21st November 2011.
- **Shri Anand Kumar Sharma**, Scientist-E, M.C., Dehra Dun participated on Hello D.D. programme of Doordarshan for interview with question – answer session on 16th December 2011.
- **Shri Sonam Lotus** gave a “Live Phone in Programme” on Weather Services of IMD in J&K on Doordarshan, Kashmir.

INTER-MINISTRY BRIDGE TOURNAMENT



IMD Bridge Team won the winners trophy of team Championship and also won the winners trophy of open pair in Inter-Ministry Bridge tournament 2011-2012 conducted by Central Civil Services Cultural and Sports Board (CCSCSB), New Delhi during 17-18 October 2011.

ART COMPETITION AND QUIZ CONTEST



Art competition and Quiz contest was organized on 20 & 21 Dec-2011 among school children of Delhi & NCR by Instrument Training Centre, Office of DDGM(UI) to mark the occasion of IMD foundation day 2012. First and second prize was won by Mother Teresa School, Preet Vihar and DPS Vidyut Nagar respectively in Quiz contest. In Art competition, 1st prize was won by student of Mother International School, 2nd prize by Modern School, Vasant Vihar, 3rd prize by Mother Teresa Public School, Preet Vihar and two consolation prizes by Air Force Bal Bharti School, Lodi Road and Hans Raj Model School, New Delhi.

ECLIPSE OF THE MOON

A total eclipse of the Moon occurred on December 10, 2011 from 18:15 hrs IST to 21:48 hrs IST. The eclipse was visible from North America except the eastern part, the northern half of Mexico, the Hawaiian Islands, Australia, Asia, eastern Africa, Iceland and most of Europe. The complete umbral phase was visible from central and eastern Asia, Australia and north-west North America. The beginning of the umbral phase i.e. eclipse during moonset was visible from parts of Mexico, parts of the U.S.A and parts of Canada. The ending of the umbral phase i.e. eclipse during moonrise was visible from parts of Europe and parts of Africa. The eclipse was also visible throughout India. The Eclipse began at 18:15 hrs IST and ended at 21:48 hrs IST i.e. duration of the eclipse was 3h 33 m.

PUBLIC WEATHER SERVICES

Public Weather Service (PWS) is one of the most vital components of National Weather Forecasting services of IMD. It has the capability to auto-generate weather forecast & warnings in the form of easily usable products (Digital, text and graphical format) for auto dissemination to various specialized users and General public.

PUBLICATIONS

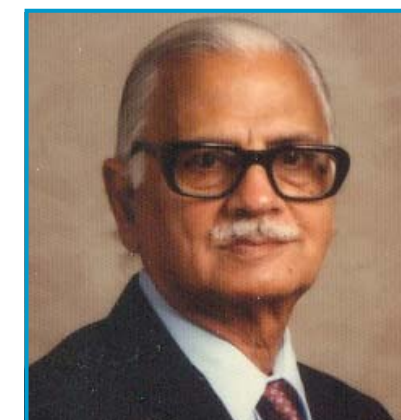
- A research paper entitled, “Moment magnitude-local magnitude relationship for the earthquakes of the Shillong-Mikir plateau, Northeastern India Region: A new perspective” by Shri J. L. Gautam, et al. has been published in Geomatics, Natural Hazards and Risk, 2011, pp.1-11.
- A paper entitled “Assessing Drought Scenario Over India during Monsoon 2009, an approach based on SPI”, Authored by Jayanta Sarkar, Satyajit Datre, Ganesh Thorat, S.D.Gore and Ajit Tyagi has been published in Asian Journal of Water, Environment and Pollution (AJWEP).
- An article entitled ‘Doppler Radar for weather Surveillance in Signatures’ by Dr. R. Suresh, Sc-E, AMO Chennai has been published in a newsletter of Indian Society of Remote Sensing, Ahmedabad.
- A Book on “Challenges and Opportunities in Agrometeorology” by S.D. Attri, L.S. Rathore, M. Sivakumar and S.K. Das (Eds) has been published by Springer.
- Climate of Rajasthan and Publication entitled, “Disastrous Weather events – 2007 and 2008” were brought out.

Multi-hazard warning system

- Systematic Warning Map for high impact weather events
- Threshold Criteria
- Colour system
- 3 level warning organisation
- Warning production and dissemination
- Relation between IMD and Disaster management
- Relation between IMD and other stake holders
- Crisis Management Room

OBITUARY

Dr. Amar Nath Tandon (10 April 1912 – 05 November 2011) played a pivotal role in the promotion and development of the field of Seismology in India. He joined the India Meteorological Department in 1942 and carried out pioneering work in various facets of Seismology. His areas of research contributions in Seismology include: Surface wave dispersion studies, Crust and Mantle structure of the earth, detailed investigations of significant earthquakes including the great Assam earthquake of 1950 and Koyna earthquake of 1967, design and indigenous development of electromagnetic and Wood-Anderson seismographs, micro earthquake field investigations, microseisms associated with weather phenomena, focal mechanism solutions and earthquake source parameters, etc. Dr. Tandon had served as a member on several expert committees in India and abroad including UNESCO. He was one of the few persons to have worked in USA with Dr. C.F. Richter – the person known for the famous Richter’s magnitude scale. He was an elected fellow of the National Academy of Sciences.



Dr. A. N. Tandon (1912-2011)

Dr. Tandon had the distinction of being the first Director of a new Directorate of Seismology created in IMD in the year 1961. Dr. Tandon superannuated in the year 1970 as Deputy Director General of Meteorology, India Meteorological Department. The entire IMD community pays its’ deep respects and homage to the great departed soul and convey its’ condolences to the members of his family.

WEATHER AND CLIMATE SERVICES IN HARYANA AND PUNJAB



Releasing of Climate of Chandigarh booklet during Conference

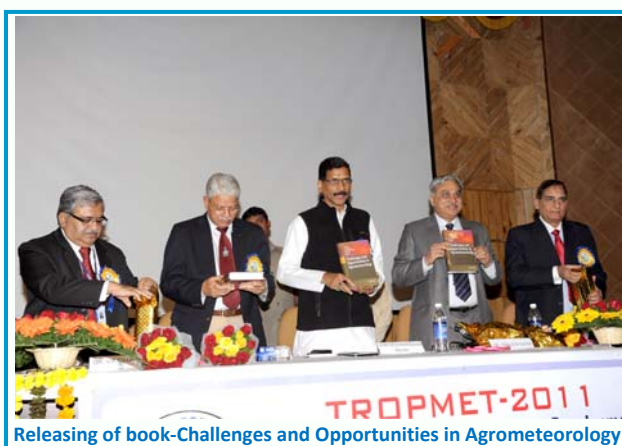
User Conference on “Weather and Climate Services in Haryana and Punjab “Emerging Issues and Challenges was organized by Met Centre Chandigarh on 14th November 2011. AVM (Dr) Ajit Tyagi was the chief guest of the function. More than 150 delegates from different user agencies both Central/ State deptt. attended the conference. About 10 presentations on the topic were made by different organization. A booklet on Climate of Chandigarh prepared jointly by Met. Centre Chandigarh and RMC New Delhi was released by DGM and website prepared by this office was also launched by DGM in the conference.

NATIONAL CONFERENCE ON SATELLITE METEOROLOGY

National Satellite Meteorological Centre of IMD organized National Seminar on Satellite Meteorology (NCSM-I) on 26-27th December 2011 at New Delhi. The theme of the conference was utilization of MODIS/NOAA/METOP satellite data and products in weather analysis and forecasting. The conference was inaugurated by Secretary, Ministry of Earth Sciences. During the inaugural speech Secretary emphasized the validation, inter-calibration, sensitivity analysis and quality checks of the satellite data. Director General of Meteorology, AVM (Dr.) Ajit Tyagi highlighted the importance of satellite data in various spheres of meteorology, especially assimilation in Numerical Weather Prediction (NWP) models. The judicious utilization of the satellite data can help in nowcasting and forecasting the various scale phenomena and their complex interaction with Land and Ocean. About 35 research papers were presented by scientists/research scholars from various Departments/Institutes like: IMD, ISRO, JNU, University of Kolkata, INCOIS, IITM etc.



TROPMET 2011



Releasing of book-Challenges and Opportunities in Agrometeorology

TROPMET 2011, a National Conference on “Meteorology for Socio-economic Development was organized by Hyderabad Chapter of the Indian Meteorological Society at Hyderabad during 14-16 December 2011. About 300 delegates including senior scientists and young scholars from all over the country participated in the conference. The Conference was inaugurated by Shri M. Shashidhar Reddy, Vice-Chairman, (NDMA). Dr. Shailesh Nayak, Secretary, MoES, AVM (Dr.) Ajit Tyagi, DGM, Dr. R. K. Datta, Vice President IMS delivered Guest of Honour, Key Note and Presidential Address, respectively. Welcome address, Award Ceremony and Vote of Thanks were conducted by Dr. V. K. Dadhwal, Chairman, IMS Hyderabad, Dr. S. D. Attri, Vice-President IMS and Shri Y. K. Reddy, Organising Secretary, respectively.

Prof. S. K. Dash was conferred upon Fellowship of IMS. A Book on “Challenges and Opportunities in Agrometeorology” by Dr. S. D. Attri, L. S. Rathore, M.V.K. Sivakumar and S. K. Dash published through Springer was also released.

TRAINING

DoPT course on Evaluation of Training (EoT) organized by Ministry of Earth Sciences, Govt. of India and IMD was held at Central Training Institute (C.T.I.), Pune during 17-21 Oct. 2011 with 11 number of candidates from different offices of IMD and one candidate from Police Dept, Mumbai.



Mid level update course for Naval Met officers in General Meteorology was conducted during 14-19 Nov 2011. AVM (Dr.) Ajit Tyagi, DGM attended the valedictory function of the course and also contributed as a resource person.

Basic Hydromet Observers course under Hydrology Project II was conducted at C.T.I., Pashan, Pune from 12-30 Dec 2011.

Shri H. S. Manadal, Met-I, Dr. H. S Sisodia, S.A.; and Ms. Sarita Tiwari attended training Course on “Codal practice on Earthquake Resistance Design on Structures” jointly organized by BMTPC, New Delhi and IIT, Roorkee held from 28-30 December 2011 at India Habitat Centre (IHC), New Delhi.



Officers of Agromet Course

Basic Agromet Course of three weeks for 10 departmental officials among Scientific Assistants to Assistant Meteorologist Gr. I level was conducted from 14 November to 2 December 2011. The course covered various components of Agrometeorology particularly on Basic Agricultural Meteorology, Operational Agricultural Meteorology and General Agricultural Meteorology.

'MENTORING SKILLS COURSES'



A training programme on 'Mentoring Skills Course', jointly organised by MoES and IMD, Sponsored by DoPT was held during 7 to 9 December, 2011 in PAC Kolkata. PAC Kolkata acted as local organiser of the course.



Mentoring skills course training conducted jointly by DoPT & DGM Head Quarters New Delhi at M.C. Ahmedabad from 12-14 October 2011 and Twelve officers of the station attended the course.

CROPPING SYSTEM MODELS-APPLICATIONS IN LAND RESOURCE MANAGEMENT



Shri Anand Kumar Sharma, Sci-E along with Dr. William Dar, Director General, ICRISAT and other participants

Shri Anand Kumar Sharma Scientist-E, M.C. Dehra Dun and Dr. Jayanta Sarkar, Scientist 'E' attended a short course on “Cropping system models-Applications in land resource management” at International Crop Research Institute for Semi Arid Tropics (ICRISAT), Patancheru, Hyderabad from 4-9 Dec 2011. The course was jointly organized by University of Florida, USA and (ICRISAT). The impressions and remarks on behalf of participants were presented by Shri Anand Kumar Sharma which was highly appreciated by the Director General of ICRISAT.

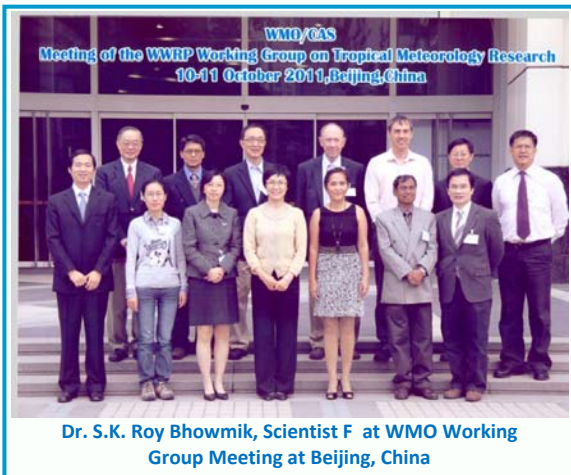
Shri G. Suresh, Scientist "E", **Shri H. P. Shukla**, Director, Seismology Ridge IMD, **Shri Ajay Verma**, S.A., were on tour to attend the software training on "TESCO" (Vector digitizer of analog Seismograms) at Istituto Nazionale di Geofisica e Vulcanologia (INGV) Rome, Italy during the period from 3-11 October 2011.



Scientists of IMD and SATA along with scientists of INGV, Rome, Italy

Dr. V. Rajeswara Rao, Scientist 'E' was deputed on tour to attend the 39 CGMS Meeting at St. Petersburg Russian Federation during the period from 3-7 October 2011.

Dr. D. S. Pai, Scientist 'E' was on deputation to BMKG Training Centre in Cietko, Bagor, Indonesia from 3rd to 7th Oct. He has participated and acted as resource person in the Training Workshop on Operational Climate Prediction for Southeast Asia.



Dr. S.K. Roy Bhowmik, Scientist F at WMO Working Group Meeting at Beijing, China

Dr. S. K. Roy Bhowmik, Scientist "F" was deputed to attend WMO Working Group Meeting on Tropical Meteorology Research during 10-11 October 2011 at Beijing, China.

Dr. D. P. Dubey Sc. "E" has participated in the WMO conference on Monsoon Heavy Rainfall Workshop, at Beijing (China) during 12-14 October and presented his paper on "Intense Precipitation over Central India."

Dr. S. D. Attri, Scientist "E" was deputed on tour to Auezon city, Philippines to attend the workshop on Human Resources Development for NMHSs in Asia (RA-II) and South West Pacific (RA-V) countries" during the period 17-21 October 2011.

Shri Charan Singh, Director was deputed on tour to Xiamen, China to attend the WMO / WRVRP "International Workshop on Rapid changes in the Tropical Cyclone Intensity and movement from 18-20 October 2011.

Dr. Jayanta Sarkar Scientist 'E' attended the International Symposium on Integrated Drought Information System (ISIDIS) in Casablanca, Morocco, from 9th to 11th November 2011 and presented a paper.

Dr. D. R. Pattanaik, Scientist-D attended the WMO meeting held in Spain during 21 to 25 November, 2011. He was the Co-Chair of the WMO Task Team on Definitions of Extreme Weather and Climate Events (TT-DEWCE) constituted by WMO. The purpose of the meeting was to establish a common definition for the extreme weather and climate events like heat wave, cold wave, drought and heavy rainfall.



Dr. D. R. Pattanaik attended WMO Task Team meeting

Dr. N. Chattopadhyay, DDGM (Agrimet.) participated in the Severe Weather Forecasting Demonstration Project (SWFDP)-Eastern Africa Regional Training Workshop on Severe Weather Forecasting and Warning Services as an Expert Lecturer and Resource Person held in Arusha, Tanzania from 28th November to 2nd December 2011.

S/Shri A. K. Sharma, M. K. Bhatnagar, N. K. Pangasa, Scientist "F" and **Manish Ranalkar**, Met. Gr. I were on tour to Seoul Korea to attend the Meeting of RA II working group on WMO Integrated observing system and WMO information system during the period from 30 Nov to 7 Dec 2011.

Dr. O. P. Singh, Scientist "F" was on tour to attend the HYCOS Project Regional Steering Committee Meeting organized by ICIMOD in Kathmandu, Nepal during 1 to 2 December 2011.

Shri U. R. Joshi, Director was on deputation to WMO Geneva from 5-7 Dec 2011 to attend a meeting on 'Data Rescue Scheme'.

राजभाषा कार्यान्वयन समिति की बैठक

मुख्यालय की राजभाषा कार्यान्वयन समिति की 116 वीं बैठक दिनांक 24.10.2011 एवं 117 वीं बैठक दिनांक 08.12.2011 को महानिदेशक महोदय की अध्यक्षता में आयोजित की गई। दोनों बैठकों के कार्यवृत्त जारी किए गए।

दिनांक 23.12.2011 को पृथ्वी विज्ञान मंत्रालय की राजभाषा कार्यान्वयन समिति की चौथी बैठक में श्री उदय प्रताप सिंह, निदेशक (प्रकाशन/हिंदी) एवं सुश्री रेवा शर्मा, वरिष्ठ हिंदी अधिकारी ने भाग लिया।

Dr. Y. E. A. Raj, DDGM participated in the valedictory function of a seminar on Disaster Management held at Dr. Ambedkar Law University, Chennai and gave special address on 14 October 2011.

Shri Anand Kumar Sharma Scientist-E, Meteorological Centre, Dehra Dun delivered lecture on "Innovation, Technology and Services for Rural Empowerment" to the scientists of various central governmental scientific organizations at the Lal Bahadur Shastri National Academy of Administration (LBSNAA) Mussoorie on 31 October 2011.

Dr. Medha Khole, Scientist 'E', was invited to be Guest Speaker at a two day Conference organised by MAEER's MIT, Pune on "Agribusiness and Food Industry : Opportunities and Challenges". She delivered a lecture on the topic 'Climate Change' during the said conference on 11 November 2011.

Shri D. Pradhan, Sc. E visited Central Training Institute, Pune during 15-16 Nov 2011 to deliver lectures on "Applications of DWR in nowcasting" to "Mid level training course for Naval officers".

Dr. P.C.S. Rao, Director delivered lectures on Short and Medium Range Weather Forecasting for Basic Agromet Course in Agricultural Meteorology on 21 and 22 November 2011.

Shri Sonam Lotus, Met-II & **Shri Y. S. Jadon**, AM-I gave presentation to Army officers of 14th & 15th Corps on weather in Western Himalaya on 23 and 24 Nov. 2011 at Mountain Met Center (SASE) Srinagar during Annual Continuing Education Programme of SASE.

Mrs. Sunitha Devi, Sc. 'D' delivered a talk on 'National Disasters and Organisational Structure of IMD for Disaster Warning' to the Officers from Revenue Department, Zilla Parishad, Police & Public Work Departments from all Districts in Maharashtra, who were undergoing a program titled 'Cyclone Disaster Management' organised by YASHADA (Yashwantrao Chavan Academy of Development Administration).

Dr. Rajesh Prakash, Scientist-E delivered a lecture on the topic "Earthquake and its Parameters" on 14th December, 2011 in the training course on "Capacity Building of Engineers on Seismic Assessment, Retrofitting & Rehabilitation of Building" at CPWD Ghaziabad organized by CPWD training Institute, Ghaziabad.

Dr. S. D. Attri, SE (EMRC) presented plenary talk on 'National Framework for Climate Services' in TROPMET 2011, National Symposium on "Meteorology for Socio-Economic Development" held during 14-16 Dec, 2011 at Hyderabad.

Dr. S. Balachandran, Scientist-E, RMC Chennai delivered lecture on the topic "Cyclone Disaster Management" and field visit of RMC Chennai was arranged on 20 December 2011 for the trainees (about 25 participants) of Anna Institute of Management, Chennai as part of the Training Programme on "Fundamental Course on "Disaster Management for Revenue Department".

Shri G. Suresh, Scientist-E, National Seismological Network (NSN) delivered lectures in Seismology to the trainees of Advance Met. Training Course at Central Training Institute (CTI), IMD, Pune on 20 and 21 December 2011.

Dr. R. Suresh Scientist - E, AMO Chennai delivered five invited lectures in Aviation meteorology in the Advanced Forecasters training course held at CTI, Pune during 21-22 December 2011.

Dr. A. K. Srivastava, Scientist 'E' delivered lectures in the one day Annual Monsoon Workshop-2011 at NCL Auditorium, Pashan, Pune on 21 December 2011 organized by Indian Meteorological Society-Pune Chapter.

SEMINAR ON POLAR METEOROLOGY



A National Seminar on Polar Meteorology has been organized on 8th November 2011 at India International Centre, New Delhi. Dr. Shailesh Nayak, Hon'ble Secretary MoES, graced the occasion as Chief Guest and delivered the inaugural address. Shri Rasik Ravindra, Director (NCAOR), Goa gave key note address to delegates on "Polar Meteorology: Present Endeavors & Future Strategy". AVM(Dr.) Ajit Tyagi, DGM IMD addressed the delegates. Prof. P. C. Pandey, IIT Bhubneswar delivered the welcome address. Scientists from various other institutes/organizations like MoES, IMD, NPL, SAC Ahmedabad, IIG, IIT Kharagpur & Asia Risk Centre presented their research paper during the three sessions on topics related to Polar Sciences, Satellite Observations over Polar Region and its Analysis & Meteorological/Environment Monitoring & Sharing of Experiences in Antarctica. Three books viz., Compendium of Antarctic Research Papers, Proceeding of Brain Storming Session-2010 & Special issue of MAUSAM on Polar Sciences were released during the National Seminar.

NATIONAL SEMINAR ON DRAWS 2011

National Seminar on Doppler Radar and Weather Surveillance (DRAWS 2011) was held at Balakrishna Hall, NGRI, Uppal, Hyderabad on 17th November and 18th November 2011 it was inaugurated by Shri Pankaj Dwivedi, Chief Secretary, Government of Andhra Pradesh, Dr. T. Radha, I.A.S., Relief Commissioner, Dr. Satheesh C. Shenoy, Director, INCOIS, Government of Andhra Pradesh in presence of Dr. Ajit Tyagi, New Delhi, Dr. S. K. Kundu, DDGM (UI), New Delhi and Dr. Y. E. A. Raj, DDGM RMC Chennai. Shri D. Pradhan, Sc.'E' attended DRAWS - 2011 at M. C. Hyderabad and presented two papers on DWR applications during the seminar.

INDIVIDUAL PARTICIPATIONS

Shri R. S. Dattatrayam, Scientist-F & Head (Seismology) and **Shri G. Suresh**, Scientist-E (NSN) attended a workshop on 14 October, 2011 organized by Ministry of Earth Sciences (MoES) on "Current scenario of Seismic Microzonation".

Dr. Y. E. A. Raj, DDGM participated in the inaugural function of International conference on "Impact of Climate Change on coastal Ecosystem" organised by Sathyabama University and delivered an invited talk on 10 November 2011.

Shri H. S. Mandal, Met-I, participated in 17th Convocation IGC-2011 and International Conference on "New Paradigms of Exploration and Sustainable Mineral Development: Vision 2050" held on 10-12 November 2011 and made a presentation on "Frequency Dependent Spatial Variation of Shear Wave Quality Factor (Qs) of Central India Tectonic Zone (CITZ)".

Shri Y. K. Reddy, Scientist 'E' attended National Seminar on Advances in floods and Cyclones forecasting on 10 November 2011 at APSDMS.

INSTALLATION OF INSTRUMENTS

- IMD in collaboration with NAL, Bangalore has been successful in installation and commissioning of two new RVR at beginning RWY 29 and end RWY 11 of IGI Airport Delhi during Dec 2011. Both have been working smoothly by providing RVR values at 24X7 to ATC and airlines. With this, IGI Airport is now the only airport in the world to have Ten RVR located at three RWYs, commissioned by IMD to provide Fog and visibility data to ATC and airlines round the clock.
- 550 AWS and 1350 ARG have been procured. Out of these, 541 AWS and 557 ARG have been installed at field sites till the end of this quarter. Data transmitted by AWS & ARG are available at GTS and IMD Websites of Pune and Delhi.
- Indigeneous Transmissometers (2 Nos.), Dhristi were installed by IMD at RWY 29 and RWY 11 of IGI Airport, Delhi during 2nd Week of December 2011.



Transmissometers

- 10 sets of UV Surface Ozone Analyzers was installed at New Delhi, Pune, Varanasi, Kodaikanal, Thiruvananthapuram, Ranichauri, Nagpur, Antarctica (Maitri), Portblair, Guwahati IMD observatories for continues monitoring and recording of ozone levels on surface.
- Installation of 13 Sky radiometers at selected stations is completed.

WORKSHOP FOR AERONAUTICAL METEOROLOGICAL PERSONNEL



India Meteorological Department and World Meteorological Organization has jointly organized workshop on Competency Standards for Aeronautical Meteorological Personnel in New Delhi from 31st Oct to 4th Nov 2011 at India Islamic Cultural Centre, Lodi Road, New Delhi. Participants from IMD, IAF, Indian Navy and members from other countries participated in the workshop along with four instructors from WMO. The main aim of this workshop was to convey general guidelines about, how to apply tools to conduct the Competency Standard for Aeronautical Meteorological Personnel in the region. The Competency and qualification Standards for Aeronautical Meteorological Personnel are applicable to individuals providing services to international air navigation.

WORKSHOP ON SEISMIC HAZARD MICROZONATION



An interactive workshop was organized by Earthquake Risk Evaluation Centre, IMD, on 21st Nov 2011, at India International Centre New Delhi to discuss seismic Microzonation products and assess further requirement by user agencies before finalization of products and maps. The workshop was inaugurated by Prof. A. S. Arya, Member of Bihar State Disaster Management Authority. About fifty Scientists, Engineers involved in design of buildings and City Planners from various scientific institutions and Department such as CPWD, DDA, and PWD participated in the workshop. The Seismic Hazard Microzonation study of half of NCT Delhi (North of NCT Delhi), covering an area of about 700 sq. km has been completed and several thematic maps have been generated. In this workshop preliminary results of Seismic Microzonation on 1:10000 scale of north Delhi, were presented.

WORKSHOP ON FLOOD METEOROLOGY



Two days workshop on Flood Meteorology was held during 27-28 December 2011 at New Delhi for interaction with Flood Meteorological Forecast officers and user agencies. In this workshop beside Flood Met. officers and Officers from DVC unit of IMD, Head Quarters, IMD and Central Water Commission also participated and made their presentations on Flood related topics and issues. Dr. L. R. Meena, Scientist "F" inaugurated the workshop and emphasized the greater role of FMO Officers in giving accurate forecast to user agencies.

TRAINING WORKSHOP

Two days training workshop was organized by DWR Kolkata during 20-21 Oct 2011 for IMD forecasters from RMC Kolkata on "Utilization of DWR products in Nowcasting of severe weather phenomena". Nine forecasters attended the training workshop.

FOG WORKSHOP



AVM (Dr.) Ajit Tyagi DG IMD addressing the participants

A national Fog Forecaster-Users interactive Workshop on "IMD's Fog Monitoring, Forecasting and Dissemination Services 2011-2012" was organized by MWO Palam, on 30 Dec, 2011 at DIAL Conference Hall, New Udan Bhavan, IGI Airport, New Delhi. Dr. R. K. Jenamani, Sc-E was the convenor. AVM (Dr.) Ajit Tyagi DG, IMD was the chief guest at the Introductory Session of the workshop. Dr O. P. Singh, DDGM RMC Delhi, Mr. S. B. Sharma, Deputy GM ATC and Mr. N. Rao, Vice-Chairman DIAL, Mr. Marcel, CEO Air side operation, DIAL also addressed the participants.

STATE LEVEL REVIEW MEETING ON AGROMET ADVISORY SERVICE (AAS)



A State Level Review Meeting on Agromet Advisory Service was held at RMC, Chennai on 12 October 2011. Dr. Y. E. A Raj, DDGM RMC Chennai presided the meeting. Shri Sandeep Saxena, IAS Commissioner of Agriculture, Govt. of Tamil Nadu delivered inaugural address and inaugurated the meeting. About 50 delegates from various institutions like Tamil Nadu Agricultural University, MS Swaminathan Research Foundation, Agromet Field Units, State Department of Agriculture, All India Radio, Doordarshan, IFFCO Kisan Ltd., Nokia Tools, Krishi Vigyan Kendras etc., participated in the meeting. 17 invited talks were delivered and 8 lead farmers from various districts of Tamil Nadu also participated in the meeting and spoke about the uses of Agromet Advisories to them.

NATIONAL CONFERENCE (BOBTEX-2011)



A National Conference (BOBTEX-2011) in the field experiments of Tropical Cyclone over the Bay of Bengal was organised by Cyclone Warning Division of India Meteorological Department during 1-2 November, 2011 at New Delhi. Prof. T. N. Krishnamurti, FSU, USA inaugurated the conference and Prof. J. Shukla, COLA, USA chaired the Panel Discussion and Concluding Session of the conference. About forty five delegates including leading scientists of the country participated in the conference. Scientific papers were presented in the conference including invited talks on various aspects of cyclones by experts on the field. Prof. Krishnamurti delivered a key note address on aircraft observations for cyclone monitoring and prediction. During this occasion

three books Extended abstracts of National Conference, BOBTEX-2011, Forecast Demonstration Project (FDP) for Improving Track, Intensity and Landfall of Bay of Bengal Tropical Cyclones-2010 and a Report Science Plan for 'Forecast Demonstration Project, on Bay of Bengal Tropical Cyclones Experiments (FDP-BOBTEX) were released.

CREATION OF NATIONAL CENTRE FOR ATMOSPHERIC TECHNOLOGY

Brainstorming Meet on "Creation of National Centre for Atmospheric Technology" was held at NIOT, Chennai on 12 December 2011 organised jointly by IMD and NIOT. Around 75 delegates from 40 organizations, industries, academic institutions and research laboratories participated in the meet. Dr. Shailesh Nayak, Secretary, Ministry of Earth Sciences, addressed the delegates of the Brainstorming Meet through telepresence. AVM (Dr.) Ajit Tyagi, DGM, IMD, Dr. Swati Basu, Scientist 'G' & Director, NCMRWF attended the meeting. Dr. Y. E. A. Raj, DDGM and few other officers from RMC Chennai viz. Shri S. B. Thampi, Dr. R. Suresh, Dr. S. R. Ramanan, Dr. S. Balachandran, Sci. "E"s, Ms. B. Amudha and Shri W. B. Gopal, Director participated in the deliberations.



ANNUAL REVIEW MEETING UNDER IAAS

5th Annual review meeting under IAAS held during 18-20th October, 2011 at Lembuchera, Tripura to review the annual progress of all the 130 units under State Agriculture Universities / Two IIT's Roorkee and Kharagpur and ICAR centres in the country. Scientists from most of the RMC's and MC's of IMD participated in the meeting. The Hon'ble Minister of Science & Technology of the state was Chief Guest and DGM was given the honor with State guest.



SOFTWARE DEVELOPMENT

A Colloquium/Brainstorming meet on the topic "In House Software Development" was held at RMC Chennai on 23 Dec. 2011 to discuss the current status, potential areas where such software could be developed along with future plans. The opening address was given by Dr. Y. E. A. Raj, Scientist-F (DDGM) and there were ten presentations by different experts followed by discussion.

VISIT OF INDONESIAN DELEGATION



DG, IMD presenting bouquet to Indonesian Delegation

A Four Member delegation of Indonesian Meteorological Climatological and Geophysical Agency, Jakarta, Indonesia visited India Meteorological Department, New Delhi from 24-25 October 2011. The delegation was welcomed by DG, IMD on 24 October in Conference Hall, IMD New Delhi. They were apprised of functioning of ISSD and weather forecasting of NWP, NWFC and Sat. Met. Divisions.

VISIT OF WMO DELEGATION

WMO Delegation visited IMD from 7 to 8 November, 2011 to discuss the work plan for Regional Integrated Multi-Hazard Early Warning System for project countries with India taking leading role in the 'Capacity building for generation of local specific warning information products' for development of Severe Weather Warning Forecasting Demonstration Project (SWFDP) for RSMC, New Delhi. The delegation also visited the NCMRWF, Noida.

VISIT OF RUSSIAN DELEGATION



Dr. S. K. Roy Bhowmik, Sc. 'F' showing products of various NWP models to WMO Delegation

Two Russian Experts Dr. Evgeniy Nesterov, and Dr. Yuri Resnyanskiy from Hydromet. Centre, Moscow visited IMD, NWP Division from 20 to 26 November, 2011 under Indo-Russian Sub-working Group on Meteorology. Dr. Nesterov was for Theme 1.1 i.e. "Study of conditions of tropical cyclones formation and development based on the result of simulations produced by mesoscale numerical atmospheric models" and Dr. Yuri was for Theme 4.1 i.e. "Development of a global ocean data assimilation system based on a 3D VAR scheme".

DISTINGUISHED VISITORS

Dr. K. Sundara Raman, Senior Scientist & Scientists from Indian Institute of Astro Physics, Kodaikanal visited Chennai and a talk was arranged at Regional Meteorological Centre, Chennai on 11 October 2011 on "Space, Weather - Sun, Earth connections. Under the joint auspices of Indian Meteorological Society, Chennai Chapter.

Shri V. V. Bhat, Member Finance, MoES visited RMC Mumbai on 20th Oct, 2011. He visited Forecasting office (Synergie), Doppler radar, Seismo unit and was briefed about the various activities of RMC Mumbai.

Dr. Arindam Chakraborty, CAOS, Indian Institute of Sciences, Bangalore delivered lecture on 'Validation of ECMWF Forecast over Indian Region' at IMD on 4th November, 2011. The lecture was attended by the Scientists of various divisions of IMD.

Dr. Shailesh Nayak, Secretary MoES & Dr. Swati Basu, Scientist 'G' & Advisor MoES, visited IMD, Pune on 17th November. They had discussions with Heads of Offices & Senior officers regarding activity of IMD, Pune and future work plan.

Shri T. Nanda Kumar, the Honourable member of NDMA visited IMD on 16th December. He was apprised about functioning of different divisions of the department.



DGM welcoming Dr. Arindam of IISc Bangalore



Shri L.R. Meena briefing to Shri T. Nanda Kumar about ISSD