

Science and Training Workshop on Climate Change over the High Mountains of Asia



October 08 - 12, 2018, IITM, Pune, India

Annual Workshop on Science of Climate Change, CCCR-IITM, MoES, 8 October 2018 Science and Training Workshop on Climate Change over the HMA, 9 – 12 October 2018

Day 1: 8 October 2018 Monday

Venue: Meghdoot Auditorium

09:00 – 09:30

Registration

Inaugural session

09:30 - 09:40

Welcome address: Prof. Ravi Nanjundiah, Director, IITM

09:40 - 09:45

Invocation and lighting of lamps

09:45 - 10:00

Background of the Workshop: Prof. S.K. Satheesh, Chairman, Divecha Centre, IISc

10:00 - 10:40

Talk by the Guest of Honor Prof. V. K. Gaur, Honorary Emeritus Scientist
CSIR, Fourth Paradigm Institute, Bengaluru

10:40 – 10:50

Vote of thanks Dr. R. Krishnan, Executive Director, CCCR, IITM, Pune

10:50 – 11:00

Group Photo

11:00 – 11:30

High Tea

Session I: Weather and climate variability in the Himalayan region in a changing climate

11:30 – 11:55 Hemant Borgaonkar: Observed climate change in the Himalayas

11:55 – 12:20 M. Ravichandran: Role and response of the Himalayan cryosphere to climate change

12:20 – 12:45 R. Krishnan: Non-monsoon precipitation response in the western Himalayas to climate change

12:45 – 13:10 S.K. Satheesh: Black carbon measurements over the Himalayas

Lunch 13:10 – 14:00 Hrs

Session II: Understanding changes in the Himalayan snow, glaciers & water resources

14:00-14:25 Anil Kulkarni: Estimation of snow-cover variations in the Himalayan region

14:25–14:50 Arun Shrestha: Climate change in the Himalayan region and its link to downstream water availability

14:50-15:15 Martin Widmann: IUKWC - Development of hydroclimatic services for the Himalayas

15:15–15:50 Ravi Nanjundiah: Monsoon Mission in the Himalayan context

Tea 15:50 – 16:20 Hrs

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Session III: Weather and Climate Modeling for the Himalayan region

16:20-16:45 Chris Lennard: Overview of the WCRP Regional Activity: CORDEX

16:45–17:10 E.N. Rajagopal: Prediction of heavy precipitation in the Himalayan region

17:10–17:20 J. Sanjay: Brief overview of the Science & Training sessions during days 2-5 of the workshop

17:20-18:00 M.Mujumdar: COSMOS soil moisture measurement and site visit in IITM

19:30 – 21:30 Dinner hosted by the Director, IITM

Day 2: 9 October 2018 Tuesday

Training Session 1: Regional climate downscaling and high resolution modeling

9:30–10:10 Martin Widmann: Downscaling methodologies: Suitability of different approaches, validation for high mountain regions

10:10–10:50 J.Sanjay: IITM Coordinated CORDEX South Asia- Downscaled climate change Projections for the Hindu Kush Himalayan region

10:50–11:30 Ashwini Kulkarni: Application of statistical downscaling for the Himalayan region

Tea - Break 11:30 – 11:50

11:50 – 12:30 Arun Shrestha: Outcomes of the HIMAP assessment report

12:30 – 13:10 T.P. Sabin: High resolution global climate modelling for the Himalayan region.

Lunch 13:10 – 14:00 Hrs

Hands-on training: 14:00 – 17:30 Hrs (With tea break 16:00 – 16:30 Hrs)

Resource experts

(1) CORDEX South Asia analysis: Resource persons – Sanjay, Ashwini Kulkarni, Sabin, Bhupendra, Sandip Ingle, Mahesh, Rama Rao – 14:00 – 15:00

(2) Arun Shrestha and Team: Practical demonstrations – Case studies of climate extremes and their linkages to downstream water demand – 15:00 – 16:00

(Tea break 16:00 – 16:30 Hrs)

(3) Chris Lennard – 16:30 – 18:00 Hrs

Exercises

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Day 3: 10 October 2018 Wednesday

Training Session II: Assessing Climate Change Impacts Vulnerabilities in the HMA region

9:30 – 10:10 Chris Lennard: Connecting climate science to decisions

10:10–10:50 Toru Terao: Reliable precipitation measurements for validation of regional climate simulations

10:50–11:30 Ramesh Vellore: Large-scale dynamics and numerical modelling of heavy precipitation events in the Himalayan region

Tea - Break 11:30 – 11:50

11:50 – 12:30 Anil Kulkarni: Estimating mass balance of the Himalayan glaciers

12:30 – 13:10 Vimal Mishra: Climatic uncertainty in the Himalayan water towers

Lunch 13:10 – 14:00 Hrs

Hands-on training: 14:00 – 17:30 Hrs (With tea break 15:45 – 16:15 Hrs)

Resource expert

(1) Anil Kulkarni: 14:00 – 17:30 Hrs - Estimation of snow reflectance using satellite data

Exercises

Day 4: 11 October 2018 Thursday

Training Session III: Applications of downscaled information for the HMA region

9:30–10:10: Toru Terao: Post MAHASRI Initiative – Understanding of the Asian land precipitation over diverse hydroclimatological conditions for better prediction, disaster reduction and sustainable development.

10:10–10:50 Prakash Tiwari: Climate change adaptation in water, agriculture, and livelihood sectors for the mountainous Himalayas

10:50–11:30 A.L. Ramanathan: Regional modelling studies of the Himalayan glacier mass balance

Tea - Break 11:30 – 11:50

11:50–12:30 Subimal Ghosh: Understanding the cascade of GCM and downscaling uncertainties in hydroclimatic projections over India.

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12:30 – 13:10 Emily Nilson: PREP data: India case study for the Uttarakhand

Lunch 13:10 – 14:00 Hrs

Hands-on training: 14:00 – 17:45 Hrs (With tea break 15:45 – 16:15 Hrs)

Resource experts

- (1) Emily Nilson (14:00 – 15:45 Hrs)
- (2) Shasashidhara & Team, IISER, Pune: Trans-disciplinary research for integrating climate studies in education - 40 minute slot (16:15 – 16:55 Hrs)
- (3) Toru Terao (16:55 – 17:45 Hrs): Statistical analysis of TRMM satellite derived precipitation dataset

Exercises

Day 5: 12 October 2018 Friday

Training Session IV: Presentation by participants

Group-wise presentation: (10 groups – approximately 5-6 participants in each group) – to be completed before 13:00 Hrs

Lunch 13:00 – 14:00 Hrs

Concluding session - Feedback