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### Registration

- (i) Selected abstracts will be treated as confirmed registrations.
- (ii) Only one abstract per presenting author.
- (iii) No Registration fees.
- (iv) No mandatory Registration process for IMSP members & Life members.

### Important Dates

Registration cum Abstract Submission Starts: 26<sup>th</sup> October 2020  
Deadline for Abstract Submission: 15<sup>th</sup> November 2020  
Communication of Acceptance of Abstracts: 10<sup>th</sup> December 2020

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## Annual Monsoon E-Workshop (AMW 2019 & 2020) and National E-Symposium on “Cloud and Precipitation Processes”

To be Jointly Organized by: Indian Meteorological Society,  
Pune Chapter (IMSP)

And

Savitribai Phule Pune University (SPPU), Pune  
(In association with IITM Pune & IMD Pune)

**Dates: 21<sup>st</sup> – 23<sup>rd</sup> December 2020 (Monday - Wednesday)**

### E-Venue

CISCO WEBEX PLATFORM



Dr. M. Rajeevan, Secretary, MoES, Govt. of India  
Prof. Nitin R. Karmalkar, Vice Chancellor, S.P.Pune University  
Dr. M. Mohapatra, DGM, IMD, New Delhi  
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### Sponsored / Hosted by:

- Ministry of Earth Sciences (MoES), Government of India, New Delhi
- Indian Institute of Tropical Meteorology (IITM), Pune
- India Meteorological Department (IMD), Pune /Delhi
- Savitribai Phule Pune University (SPPU), Pune
- Department of Science & Technology (DST), Government of India, New Delhi
- Science and Engineering Research Board (SERB), DST, Govt. of India, New Delhi
- Indian Meteorological Society, National Council (NC) HQ, New Delhi
- Indian Space Research Organisation (ISRO): SAC, NRSC
- Centre for Development of Advance Computing (C-DAC), Pune
- National Atmospheric Research Laboratory (NARL), Department of Space, ISRO

### ❖ About IMSP and Annual Monsoon E-Workshop (AMW 2019-20):

The Indian Meteorological Society, Pune Chapter (IMSP), a Chapter under Indian Meteorological Society, is one of the largest and active chapters in the country. About 600 members are actively associated with India Meteorological Department (IMD), Indian Institute of Tropical Meteorology (IITM), various departments of Savitribai Phule Pune University, CDAC, IISER and other institutions. IMSP is one of the most important platforms for the meteorological stalwarts, for forwarding their experience and science to the next generation, even after their retirement. In order to keep a pace with time-to-time developments in the field of Meteorology, this Chapter organizes a sizable number of popular lectures by eminent meteorologists from India and abroad and more thematic programs focusing on popularization of Meteorology among the general public and basic academic institutions like schools, colleges, etc. As a regular activity, IMSP conducts 'Monsoon Workshop' every year. This year, due to the outbreak of COVID-19, AMW-2019 could not be conducted in the stipulated time frame. However, AMW 2019 & 2020 is to be organised this year with SPPU joining hands with IMSP. The behaviour and unique features of the monsoon season are discussed thoroughly during the Annual Monsoon workshop. The workshop provides meteorologists working in the operational services and research, an opportunity to present various features of the monsoon in their varied point of view. In addition, weather scientists share their views & knowledge on the changing trends in the monsoon activity and its implications on various issues related to climate change. Behaviour & unique features of SW and NE monsoons of 2019 and SW monsoon 2020 will be discussed thoroughly in AMW 2019 & 2020.

### ❖ About the National Symposium on "Cloud and precipitation processes":

Although the term 'monsoon' refers to the consistent seasonal reversal in the wind direction over a region, the most significant feature of direct influence to us are the clouds and precipitation. It is well-established that monsoon rainfalls undergoes intra-seasonal oscillations on the order of days to several weeks, as well as inter-annual variations. In addition, the precipitation also occurs from transient convective and meso-scale systems in highly localized pattern, with influence from the topography/ orography of the region. This further adds to the spatio-temporal variability of clouds and precipitation. The precipitation systems are observed to have large diurnal variations as well as variations in the frequency of occurrences, cloud base heights and durations. The processes involved and the controls on the formation of convective and stratiform systems, their organization and precipitation/ decay in the monsoon regime are highly complex. Improving the understanding on the role of atmospheric dynamics, dynamical and microphysical processes in monsoon clouds and correctly representing them in the numerical models are crucial for improving the monsoon forecast.

Long-term rainfall records over India indicate that Indian summer monsoon has become more extreme in the recent years. Intense short period rainfall causing floods and excessive dry spells leading to droughts have risen markedly. Some of the extreme precipitation events in this decade have caused very devastating floods and landslides, which terribly affected human life, agricultural operations, infrastructure and transportation. Notable among them are the Uttarakhand floods in 2013, Kerala floods in 2018 and Maharashtra floods in 2019. In the year 2019, floods were experienced by Maharashtra, Madhya Pradesh, Bihar, Uttar Pradesh, Uttarakhand, Meghalaya, Assam, West Bengal, Kerala, Gujarat, Karnataka and many other states of the country (even in Rajasthan). Severe flood situation prevailed in Maharashtra, especially over Sangli, Kolhapur area (for the period 4-10 August 2019), Mumbai, Pune, etc. Mumbai has experienced floods in 2005, 2017, 2019 & 2020. Monsoons of 2019 & 2020 produced a large number of extreme rainfall events, making the seasonal total much higher than expected and also extending in time at various spatial scales within the country.

Analyses have revealed that monsoon variability has amplified in the recent decades, with weakening of the moderate rainfall and a simultaneous rise in the magnitude and frequency of extreme rainfall events. Climate models predict that there is an increasing tendency in the frequency of extreme events (dry & wet) over India in the warming world.

Some of the important questions to answer are: How will the frequency of extreme events change in the future? Where and when they will occur? How far the global warming is responsible for the extremes? etc.

Better understanding of the Cloud and precipitation processes, especially studies on controls and processes involved, and correctly parameterizing them in

numerical models are crucial to improve the predictability of monsoon in general, as well as that of the occurrence of extreme rainfall events. Substantial research activities have taken place in the recent decades on these aspects, in terms of both observational and numerical modelling efforts. Nevertheless, the problems are getting more complicated in the warming world, with every monsoon season offering new challenges. The national symposium will provide an ideal platform to present and discuss recent findings on the monsoon clouds and extreme precipitation from observational as well as numerical modelling studies, especially flooding events in different parts of the country during recent years.

### ❖ Invited Talks will be delivered by keynote speakers and experts in the following themes

- Observing monsoon clouds: high altitude, air craft, radar and remote sensing.
- Ice nuclei and its role in cloud microphysics.
- Numerical modelling aspects of monsoon clouds.
- Historical perspective on extreme rainfall events over India from observations.
- Floods over various states of our country in 2019 & 2020
- Why extreme events, and what we know/ don't know on the extreme events of the decade.
- Forecasting extreme weather events.

**A special session on 'Cloud Microphysics: Observational and Numerical Modelling aspects' will be held as part of the National Symposium in the honor of Prof. P. Pradeep Kumar, a renowned cloud physicist who superannuated from Savitribai Phule Pune University in November, 2019.**

### Theme-1: Clouds and its characteristics:

- Characteristics of the monsoon clouds and rain-formation mechanisms.
- Microphysical characteristics of monsoon clouds.
- Aerosol-Cloud interaction and their impacts on monsoon.
- CCN and Ice Nuclei observations and parameterizations in numerical models.
- Cloud and precipitation parameterization for monsoon simulations.
- In Situ and remote sensing observations of monsoon clouds and precipitation.
- Observations of Orographic and other cloud.

### Theme-2: Extreme weather events:

- Observational evidence for trends and changes in extreme events.
- Floods over various states of our country: Findings on severe flood situations over Sangli, Kolhapur, Mumbai & Pune of Maharashtra, over Uttarakhand, Kerala & other states and other extreme precipitation events.
- Predictability of extreme weather events, especially extreme rainfall events.
- Investigations on mitigation and adaptation measures related to extreme rainfall events.

### Theme-3: Ocean-atmosphere coupling & extreme events

- The role of oceans in extreme events
- The role of atmosphere in extreme events
- Study of extreme events through ocean-atmosphere coupled models

### Theme-4: Climate change impacts

- Historical changes in monsoon rainfall characteristics.
- Global warming and extreme weather events.

**Participants are requested to submit their abstracts (of Maximum 350 words) as .doc/.docx file only by sending email to pune\_ims@rediffmail.com and with carbon copies (CCs) to sahadat.cat@tropmet.res.in and smitha1206@gmail.com with the subject line "Submission for AMW2019&2020". They should also include the following details, Names of authors, affiliation, e-mail address, contact number, the theme under which their abstracts to be considered, preference for Oral/Poster, whether presenting author is below 35 years old (presenting author must be the 1<sup>st</sup> author for such cases/awards).**

### ❖ Call for contributions & participation

Students/ Young researchers/ Scientists are encouraged to submit their original contributions (abstracts) on the following themes (latest by 15<sup>th</sup> November 2020). Interested researchers/scholars should register online by 15<sup>th</sup> November 2020, for attending AMW 2019 & 2020 and the national E-symposium. Alternatively, people can register for attending only the National E-symposium, Registration procedure remains the same.

### ❖ Prizes:

- **Cash prizes for the best three papers under each theme will be awarded for oral as well as poster presentations.**
- **Participation certificate only for those whose abstracts are accepted and also attend the symposium.**

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