



Ministry of
Earth Sciences

**Earth Systems Science Organization
(ESSO)
Ministry of Earth Sciences (MoES)
Government of India
Indian Institute of Tropical Meteorology
(IITM)**



Call for Research Proposals under “Monsoon Mission-II”

Earth System Sciences Organization (ESSO) of Ministry of Earth Sciences (MoES), Government of India, launched the “National Monsoon Mission” (NMM), a mission mode project with a vision to develop a state of the art dynamical prediction system for monsoon rainfall on all different time scales in 2012. It has successfully completed its first phase by setting up high resolution coupled dynamical prediction system with reasonable prediction skill for seasonal and extended range time scales and very high resolution atmospheric model for weather prediction. MoES has approved continuation of the Monsoon Mission program, as “**Monsoon Mission-II (MM-II)**”, for next 3 years (2017-2020) with emphasis on predicting extremes and development of application based on the forecasts generated. Indian Institute of Tropical Meteorology (IITM) has been given the responsibility of overall execution of the monsoon mission by MoES. Other MoES institutes partnering in this mission are National Centre for Medium Range Weather Forecast (NCMRWF), Indian National Center for Ocean Information Services (INCOIS) and India Meteorological Department (IMD). NCMRWF will use UKMO modelling system, IITM will use modified NCEP CFS (a.k.a Monsoon Mission Model) to achieve the objective of the MM-II. INCOIS will be working on improving ocean data assimilation system based on GODAS and make further improvements to Ocean model component of CFS. For the mission, IITM, NCMRWF, IMD and INCOIS are collaborating with NCEP (USA), Met Office (UK) and various academic institutions/organizations in India and abroad to improve prediction skill of extreme events and develop weather/climate applications for different sectors (Agriculture, Hydrology and Power). Immediate focus will be on developing applications for Agriculture.

With this background, research proposals are invited on the following broad areas:

Model Development:

- Dynamical Core and numerical algorithms
- Clouds in models, radiation
- Land Surface Processes and PBL processes
- Data Assimilation and initialization methods: Ocean, Land, Atmosphere, Coupled
- Ocean Modelling
- Understanding and Predicting extremes at interannual scale (with EQUINOO, ENSO, IOD etc..)
- Prediction of extreme events on short & Medium scales

It is preferable that the model development activities be carried out using one of the models adopted by IITM NCMRWF, INCOIS for the monsoon mission.

Climate applications for Agriculture management:

- Validation and impact assessment of agromet advisories and identification of strategies to further improvement of agromet advisories.
- Pests and diseases incidence by weather and climate events and Application of bio-climate niche models for disease spread.
- Strategies for enhancing yield of the crops Pigeon Pea, Soyabean, Wheat, Rice, using climate variability information and forecasts by models .

Climate applications for Water resources management:

- Snow melt runoff predictions
- Reservoir management strategies
- Irrigation management strategies
- Development of flood prediction systems for Indian river basins

Climate Applications for Power/Energy sector

- Forecasting and wind power production

Support from/through IITM/NCMRWF will be available to suitably configure the modelling system for planned research study. Computing facility of IITM/NCMRWF HPC will be made available to execute the components of research proposal by researchers from India.

Project proposals are invited from national and international organizations/Universities/Institutes. Format for national and International proposals and other information are available at IITM website at the link http://www.tropmet.res.in/monsoon/index_2.php and also at NCMRWF and MoES websites.

It is proposed that interested PIs who wish to participate in Monsoon Mission Phase-II should first submit concept notes (about two pages indicating the title, names and organizations of the PIs, objectives and work plan of the proposed project, along with pertinent references which establish the expertise in the area of the project) by email: to monsoon_mission@tropmet.res.in. These concept notes will be reviewed and based on the review, proposals will be shortlisted for submission of full proposals. This will be communicated to the successful PIs with a request to submit the full proposal in the appropriate format, initially by e-mail. . Final Proposals along with all essential endorsement and certificates in the prescribed format may be forwarded through proper channel and should be sent to **The Director**, Indian Institute of Tropical Meteorology (I.I.T.M.), Dr. Homi Bhabha Road, Pashan, Pune – 411008, **INDIA**. The envelope should be clearly superscripted “MM-II PROPOSAL”.

It may be noted that **date has been kept OPEN for submission of the proposals to Monsoon Mission-II**. However, it is advisable to send the proposals at the earliest. The proposals, for which the concept notes are received by December, 30th 2017, will be considered in the first round. The successful PIs will be requested by the first week of January to submit the full proposal. by 30 January,2018. The decisions regarding the first round of proposals are expected to be made by the first week of March, 2018.