

## **Background**

Numerical modeling and data assimilation techniques have become the backbone of modern weather forecasting services. This is also applicable in the efforts to understand and predict the future climate. Government of India had the vision to recognize this and hence established the National Centre for Medium Range Weather Forecasting (NCMRWF) in 1988. NCMRWF produces medium range weather forecast since 1994 on an operational basis using state of the art end-to-end global NWP system. Over the years NCMRWF has developed expertise in the field of numerical modeling for weather and climate.

Fifty years back, in India, a simple barotropic model that was run with the help of a calculator marked the beginning of NWP in the country. But the effort remained on low key for quite some time. Considerable progress in NWP has been achieved in India in the last few decades, especially after the establishment of NCMRWF. However the tropical regions in general and the Indian monsoon region in particular, pose considerable challenges in terms of forecast skill.

To celebrate Twenty Years of NCMRWF and Fifty years of NWP in India, the NCMRWF is holding this international conference. The India meteorological department is co-organizer of the conference. All the presentations at the conference will be delivered by experts in the field. The aim is to promote discussion of the present state of understanding of the NWP and climate modeling in tropics, particularly with regard to the Indian and the Asian Monsoon system. The conference will also discuss on open questions and new challenges arising in the global and regional weather/climate modelling scenario. Leading experts in weather/climate modelling, data assimilation, parameterization of physical processes, tropical weather/climate variability, ocean modelling/assimilation are likely to participate. We hope that the presentations and discussions will suggest new approaches to understand tropical dynamics and physics and improved modelling techniques for tropics and Indian monsoon region. This will lead to more effective weather and climate services.

NCMRWF was created with tremendous support from leading global NWP centres and scientists. During its existence it has been benefiting from active collaboration with the international community. This international conference highlight our striving for achieving the highest level of forecast capability for the tropics and Asian monsoon region in active collaboration with the international community.