## **Synopsis of Presentation**

## Challenges in Predicting Severe Weather over the Himalayas Someshwar Das Email: somesh03@gmail.com

Severe weather over the Himalayas has calamitous effect, due to complex terrain, poor development, and a fragile economy, and warrants intensified disaster mitigation through increased observations from radars and satellites and further application of mesoscale models.

The Hindu-Kush Himalayan region are particularly prone to vagaries of severe weather, which claims casualties every year. This region is influenced by extratropical disturbances that propagate from the west to the Himalayan region during winter, bringing rainfall and chilly weather. These systems severely influence life in the Himalayas by inducing widespread rainfall and, at times, very heavy snowfall associated with squall winds, hail, and severe cold waves. Gale winds and heavy rain/ snowfall result in avalanches and landslides. Cloudbursts, windstorms, hailstorms, and lightning have high impact on human life and the economy. These events, occurring on a smaller spatiotemporal scale, invite application of regional models with fine-grid resolution. Real-time forecasting of severe weather, including westem disturbances over the mountains, remains a challenging task, especially with sparse data and difficult communications.

In this presentation, starting with the fundamentals on how to represent the Himalayas in numerical models, challenges in collecting observations over the mountains, their quality control, convective scale data assimilation, ensemble forecasting and challenges in modelling & prediction of severe weather events will be discussed. Discussions will also be held on an Integrated Himalayan Meteorology Programme, the Himalayan Experiment (HIMEX) and a conceptual Cloudburst and Mountain Meteorology Research Testbed.