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Understanding meteorology for pollution transport over Bhutan

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The country of Bhutan spans over complex terrain in the Eastern Himalayan region. Several studies in the past have reported about transport of air pollution into the Himalayas from Indo-Gangetic plains. However, there is a lack of studies focusing over eastern Himalaya and particularly over Bhutan. Understanding air pollutant flows over this region requires good understanding of weather and atmospheric circulation pattern. We have used decadal data from ground based meteorological stations made available from the Department of Hydro-Meteorological Service (DHMS), Government of Bhutan to study rainfall and temperature patterns over different elevation. We also present preliminary results from few automatic weather stations that are analyzed for diurnal and seasonal variability. Weather Research and Forecast (WRF) model was run to understand meteorological flows over the region. Preliminary results from WRF model will also be presented.

Keywords: Bhutan, Meteorology, Air Pollution, Eastern Himalayas.