

International Conference on **GLOBAL WASTE MANAGEMENT**

September 05, 2022 | Webinar

**Spatio-temporal variability of summer monsoon surface air temperature over India and its regions using Regional Climate Model****Ms. Shruti Verma***Department of Geophysics, Institute of Science, Banaras Hindu University, Varanasi, India.*

The sensitivity experiments in selecting the best convective parameterized schemes have been performed in simulating the surface air temperature during the summer monsoon season (June-September) over India and its five sub-regions such as Northwest India, Northcentral India, West Peninsular India, Eastern Peninsular India, and Southern Peninsular India. The spatial and temporal variability of mean surface air temperature has been analyzed with reference to the India Meteorological Department (IMD) analysis data using various statistical scores. The model results show the tendency of overestimation of surface air temperature mainly in four cumulus parameterization schemes (CPSs) i.e. Tiedtke, Emanuel, Mix98, and Mix99 of RegCM4.3 during the JJAS, where Grell and Kuo CPSs show better agreement with the IMD data. The model simulated results have also been investigated further using modified Nash Sutcliffe efficiency and modified Willmott's degree of index. These analyses confirm the potentiality of the Grell CPS followed by the Kuo CPS in simulating interannual variability of the surface air temperature over Indian and its five sub-regions. The inter-scheme difference in simulating surface air temperature is linked with the generation of low cloud convection and warming-induced atmospheric moisture advection in the schemes. Therefore, Emanuel, Tiedtke, and Mix98 CPSs have shown a persistent nature of overestimation in surface air temperature variability during summer monsoon.

**Biography**

Ms. Shruti Verma is a research scholar under supervision of Prof. R. Bhatla in the Deptt. of Geophysics, Banaras Hindu University, India. Her research work motivated by the study of climate change to understand the potential impacts and associated vulnerabilities of global climate change. Towards this goal, her aim is to understand the regional environmental change and its impact using various observational, global and regional climate models to study the impacts of past and future climate variability and climate extremes. she has been working expertise in regional climate model evaluation, validation and projection of climate change scenario.