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**Dust Quantization and Effects on Agriculture Over Uttar Pradesh, India** PAVEL MUNSHI, SHUBHANSH TIWARI, Amity University Haryana — Dust plays a very important role in the atmosphere and the biosphere. In this communication, the effect of atmospheric dust on the yields of certain crops grown in Uttar Pradesh, India is assessed. Coherent physical and thermodynamic fingerprints of dust parameters such as from Satellite data- KALPANA-1, MODIS, OMI, CALIPSO; Model data- DREAM, HYSPLIT, ECMWF; have been considered to run the APSIM model to derive the impacts. This paper assesses dust as a physical atmospheric phenomenon including its Long Range Transport (LRT) and dispersion along with considerable variations of Aerosol Optical Depths (AODs) over the subcontinent of India. While AODs significantly increase by more dust concentration, the local dispersion of pollutants is a major concern with deposition of atmospheric dust such as sulphates and other chemical constituents that affect agricultural land. An approach in atmospheric physics is also taken to parameterize the model outputs. This communication indicates dust to be a positive factor for the cultivation of certain crops such as wheat, maize in the experimental location. Initial results suggest that LRT dust is a viable counterpart to decrease the concentration of soil acidity and related parameters thus enhancing the vitality of crops.

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