Advancing and Retreat of Himalayan Glaciers in View of the Increasing Anthropogenic Activities

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The towering Himalaya lies north of the Indo-Gangetic basin. In the last three decades, the anthropogenic activities have increased throughout the basin. The dynamics of atmospheric aerosols in the basin depends on the meteorological conditions. Sometime during the pre-monsoon season, the concentrations of the atmospheric aerosols associated with the dusts storms originated from Arabia peninsula and Thar desert increase over the Himalayan region. The inter-annual variability of pre-monsoon aerosols properties near the foothills of the Himalayan region clearly show the influence of dusts on the meteorological parameters. The Himalayan range is one of the largest mountain chains with variable snow cover, small and large glaciers. Due to the varying topography of the Himalaya range, a contrast variation in the physical and climatic conditions is found from west to east of the Himalaya region from the detailed analysis of multi satellite sensor and ground (MODIS, AIRS, OMI AURA, AMSR-E, NCEP reanalysis) data during 2001-2009. The advancing and retreat of glaciers along the Himalayan range will be presented in the light of observed surface, air and meteorological conditions.