

LONG TERM TEMPORAL TRENDS AND SPATIAL DISTRIBUTION OF TOTAL OZONE OVER PAKISTAN

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Abstract

Considering the potential importance of the concentration of ozone in the atmosphere and threat to its depletion in Pakistan's environment, AQUA-AIRS Level-3 Daily Global satellite data is used to monitor the Total Column Ozone (TCO) over the entire country. Inter-annual analysis of TCO over the region (62°-76°E and 23°-37°N) during 2003-2011 with spatial resolution of 1°x 1°lat/long grid, exhibited that overall average distribution of TCO variations are latitude dependent and altered from 275-278 DU in the Sindh and Baluchistan province areas, 297-300 DU in the northern and KPK province areas. Seasonal variations have shown that in the region 23°-29°N, maximum occurs in summer season (JJA) and minimum in winter season (DJF) with mixed trend in both spring (MAM) and autumn (SON) seasons while in the region between 30°-37°N, maximum is in winter (DJF) and spring (MAM) seasons with minimum in summer (JJA) and autumn (SON) seasons respectively. Statistical analysis revealed that linear relationship exists between year to year TCO and solar activity.