

Spatio-temporal Changes of Ozone Profiles above Beijing using Odin-OSIRIS data

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Since 2001, the Odin satellite has collected chemistry components data by an onboard sensor called combined optical spectrograph and infrared imager system (OSIRIS). The ozone profiles data from Odin-OSIRIS are analyzed in this study to detect their spatio-temporal changes from 2001 to 2005 above Beijing. The ozone waves are seasonal variable with higher values in Spring and Autumn from 2002 to 2005. The mean ozone concentrations in March and September are higher in 2002 than that in 2003 and 2004, and the mean ozone concentrations in April in 2003 are higher than in 2002 and 2004 too. From 20 km to 30 km, there are higher ozone concentrations, and their vertical changes are strong. Below the 20km, the ozone fluctuations are rather weak since June. Specifically, the anomaly of ozone concentration is detected around May 20, 2002, which is obviously higher between 32 km and 40 km than that during the other altitude ranges and around the same day of other years, and lower between 18 km and 30 km. Therefore, more attentions should be paid to study what causes the anomaly.