



Tropospheric ozone pool over Arabian sea during pre-monsoon

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This study focuses on the remarkable and stable phenomenon-enhancement of the tropospheric ozone over Arabian Sea (AS) during the pre-monsoon season. Satellite data (SCIAMACHY LNM, OMI/MLS and TES) showed a strong and clear ozone seasonality over AS with ~ 42 DU maxima in pre-monsoon season. With the help of MACC reanalysis data, our results showed that $3/4$ of the enhanced ozone during this season is contributed at 0-8 km height. The main source of the ozone enhancement is believed to be a long range transport, together with a suitable meteorological condition for pollution accumulation. Local chemistry plays different roles over different altitudes. However we believe the contribution to the tropospheric ozone enhancement from the chemistry is low. The contribution of the STE is unclear.

In addition, the interannual variation of the pre-monsoon tropospheric ozone enhancement over AS is discussed. The anomalies in 2005 and 2010 could be due to the dynamical variation of ozone caused by the El Niño events.