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High-resolution lidar measurements of ozone profiles in the equatorial tropopause region

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Stratosphere-troposphere exchange is important for the budget of ozone in the lower stratosphere as well as in the troposphere. Upward transport occurs in the tropical region, but the exact mechanism controlling the transport is not clear. We found the top height of the stratospheric aerosol layer descend with time, synchronized with the QBO in the zonal wind. The QBO signals of the aerosol layer are noticed in the altitude range from 30 to 40 km (Abo et al., 2006). In addition, the tropospheric aerosol amount observed around the tropopause over Kototabang (100.3E, 0.2S), Indonesia is much more than at mid-latitudes. They suspect that this is an evidence of active material exchange between the troposphere and the stratosphere over the equatorial region. We are preparing DIAL (differential absorption lidar) system for high-resolution measurements of vertical ozone profiles in the equatorial tropopause region over Kototabang, Indonesia.

Keywords: ozone, lidar, equatorial region, trpopause