

Aerosol and gas profile observation by MAX-DOAS on a research vessel

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Aerosol and gas profile observation by Multi-Axis-Differential Optical Absorption Spectroscopy (MAX-DOAS) on a research vessel, *Kaiyo* of Japan Agency for Marine-Earth Science and Technology (JAMSTEC), was conducted during a cruise from Yura, Wakayama to Yokosuka, Kanagawa on July 14-18, 2008. Our MAX-DOAS instrument was installed on an active gimbal to be kept horizontally on the vessel, and we successfully obtained spectral data for aerosol and gas retrieval. Comparison with another MAX-DOAS observation at Yokosuka (139.65E, 35.32N) shows good agreement during the last half of the cruise around Yokosuka area in both aerosol at 476 nm and NO₂. Though the primarily source of air mass during the first half of the cruise was ocean from meteorological analysis data for both air masses measured from *Kaiyo* and the Yokosuka site, the measurement on *Kaiyo* shows cleaner air with NO₂ concentration as low as 0.1-0.2 ppbv at 0-1 km over ocean. Such spatial variation of NO₂ was consistent with tropospheric NO₂ observation by Ozone Monitoring Experiment (OMI) satellite during the cruise.