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## Statistical study on spatial distribution of the airglow by the Reimei/MAC limb observation

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Airglow in the upper atmosphere is observed in the region from the mesosphere to the thermosphere. UARS/WINDII had observed from 1991 to 1997 that there are large structures of the airglow emission around the equatorial region. Spatial distributions of the airglow have not been clarified sufficiently because there have been few global airglow observations. The objective of this study is to clarify the vertical and horizontal distributions of the airglow using the Reimei satellite Multi-spectral Auroral Camera (MAC). The orbit of the Reimei satellite is in 0050-1250 LT plane at 650km altitude with 100 minute of orbital period. MAC observes O-airglow (wavelength 557.7nm) and OH-airglow (wavelength 670nm) on the limb of the Earth in between 15°N and 40°N for three times a day. Spatial distributions of the airglow observed in the mid-latitude region of the northern hemisphere from March 2008 to February 2009 were statistically analyzed in this study. Vertical profile of the volume emission rate was derived from the observational data under assumption that the intensity of emission is uniform at the same altitude. Latitude and local time dependence of the intensity of the airglow was also studied.

Keywords: airglow, the Reimei satellite, Multi-spectral Auroral Camera, volume emission rate