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Analysis of total ozone above epicentral areas on earthquake-days in Japan and Kuril Islands and their vicinity

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The correlation between earthquake and total ozone is studied. The observation data by OMI onboard Aura (NASA) is used. The total ozone of 1 degree grid of latitude and longitude where the epicenters of earthquakes with more than or equal to 5 in Japan and Kuril Islands and their vicinity are located is compared between those on earthquake-days and the medians of the periods from -15 days to +15 days of earthquake-days. The earthquakes which is estimated to be aftershocks are not included in the analysis. The data from October, 2004 to December, 2008, is analyzed. The result showed that there are significantly more earthquake-days when the total ozone is larger than the medians. In particular, there are significantly more earthquake-days in the area of Hokkaido and Kuril Islands when the total ozone is larger. This may suggest that the total ozone in the atmosphere above the epicentral areas increase on earthquake-days in Hokkaido and Kuril Islands and their vicinity.

Keywords: Japan and Kuril Islands, earthquake-day, epicentral area, total ozone, median, OMI