

Inhomogeneity of NO₂ over Fukuoka, an urban site in Japan observed by MAX-DOAS

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Since August 2012, continuous NO₂ observations have been performed using ground-based Multi-Axis Differential Optical Absorption Spectroscopy (MAX-DOAS) at Fukuoka (33.55N, 130.36E), an urban site in Japan. MAX-DOAS is a passive remote sensing technique using scattered visible and ultraviolet solar radiation at several elevation angles. We investigate inhomogeneity of NO₂ by observing at two azimuth angles, Tenjin (downtown area) direction and Itoshima (out of downtown area) direction. We discuss the observed inhomogeneity with a focus on the three factors: inhomogeneity of NO₂ emissions, development of the boundary layer, horizontal transport associated with land/sea breeze.