



## **Peroxyacetyl Nitrate(PAN) during 2018 heatwave period in Seoul**

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Peroxyacetyl nitrate (PAN), O<sub>3</sub> and their precursors including NO<sub>x</sub>, and volatile organic compounds (VOCs) were measured at the Korea University campus in Seoul from 14 June to 14 September 2018. PAN was determined every 2 minutes using a GC-LCD (Gas Chromatography with Luminol-based Chemiluminescence Detection). The nominal detection limit of PAN was 0.1ppbv. For the entire experiment period, the mean and maximum concentrations of PAN and O<sub>3</sub> were 0.9 ppbv and 32 ppbv and 169 ppb and 8 ppbv, respectively. These maximum concentrations were observed in the end of July when the heatwave hit the whole Korea peninsula. The hourly O<sub>3</sub> concentration exceeded 100 ppbv for 8days, during which the daily maximum temperature reached 39.6°C. There was good correlation between PAN and O<sub>3</sub> during the heatwave period. However, the daily maximum PAN and O<sub>3</sub> concentrations were not well correlated with the daily maximum temperature between 32 39°C, which is different from what we observed in Seoul. While toluene and HNO<sub>3</sub> concentrations were highly elevated in heatwave period from mid July to mid August. NO<sub>x</sub> concentrations were slightly lower, compared to those before the heat wave period.