

## 2.048 Hourly observation of PM<sub>2.5</sub> components in the coastal area in Seto Inland Sea, Japan.

Early Career Scientist

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Abstract:

We carried out a diurnal characterization of PM<sub>2.5</sub> components using the continuous dichotomous aerosol chemical speciation analyzer (ACSA-14) at Kobe City in Hyogo Prefecture, a coastal area on the Seto Inland Sea. High concentration factors of the main components were estimated using the gaseous concentration data and the wind direction/wind speed data. The diurnal variation of the optical black carbon (OBC) increased in the morning. It is commonly affected by heavy-duty vehicles, and stable conditions of the atmosphere cause it to reach high concentrations. The diurnal variation of the NO<sub>3</sub><sup>-</sup> was affected by a heavy-duty vehicle with a secondary generation at night. The diurnal variation of the water soluble organic carbon (WSOC) was affected by a secondary photochemical generation in the summer season and the stabilization of the atmosphere in the winter season. On the other hand, there was a time lag between the diurnal variation of WSOC and the diurnal variation of Ox in the summer, so additional consideration is necessary. The diurnal variations of the SO<sub>4</sub><sup>2-</sup> and H<sup>+</sup> were affected by exhaust gas from ships navigating on the surrounding sea. However, the time of the high concentration of SO<sub>4</sub><sup>2-</sup> is later than that of SO<sub>2</sub> and requires greater consideration than other factors.