

# Correlations with insoluble and soluble substance in fog water and transport course of air mass

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## Abstract

Fog samples were collected at the Akita Hachimantai mountain range and at Takanosu basin in northern Japan to investigate the pollution mechanism of fog. Soluble and insoluble substances in fog water were analyzed using ion chromatography and particle induced X-ray emission (PIXE) analysis, respectively. Combining a 72h back trajectory and principal component analysis (PCA) to chemical analysis data elucidated the effect of the transport course of an air mass on soluble and insoluble substances. Fog water of Hachimantai and Takanosu contained mainly lava (Si, Fe, Na, K, Ca, Ti, Mg, and Mn) and diatomaceous earth (Si, Na, Ca, Mn, Mg and Fe) respectively. When air mass was transported from inland of northern China and industrial area of China, loess (Si, Fe, Na, K, Ca, Ti, Mg, and Mn) and nss-SO<sub>4</sub><sup>2-</sup> were contained more than in other cases.