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# Characteristics of Atmospheric Particulate Mercury in Size-Fractionated Particles during Haze Days in Shanghai

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## Abstract

Atmospheric particulate mercury (PHg) is recognized as a global pollutant that requires regulation because of its significant impacts on both human health and wildlife. The haze episodes that occur frequently in China could influence the transport and fate of PHg. To examine the characteristics of PHg during haze and non-haze days, size-fractionated particles were collected using thirteen-stage Nano-MOUDI samplers (10 nm to 18  $\mu\text{m}$ ) during a severe haze episode (from December 2013 to January 2014) in Shanghai. The PHg concentration on haze days ( $4.11 \pm 0.53 \text{ ng}\cdot\text{m}^{-3}$ ) was three times higher than on non-haze days ( $1.34 \pm 0.15 \text{ ng}\cdot\text{m}^{-3}$ ). The ratio of the PHg concentration to total gaseous mercury (TGM) ranged from 0.42 during haze days to 0.21 during non-haze days, which was possibly due to the elevated concentration of particles for gaseous elemental mercury (GEM) adsorption, elevated sulfate and nitrate contributing to GEM oxidation,

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