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A proposed approach estimating mercury dry deposition at AMNet sites

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One of the major goals of the National Atmospheric Deposition Program (NADP) the Atmospheric Mercury Network (AMNet) is to provide estimates of mercury dry deposition with reasonable accuracy. Three dry deposition/air-surface exchange schemes are proposed for separately estimating surface fluxes of the three forms of atmospheric mercury, i.e., gaseous oxidized mercury (GOM), particulate bound mercury (PBM), and gaseous elemental mercury (GEM). The dry deposition scheme of Zhang et al (2003), with modifications described in Zhang et al. (2012), will be used for GOM, the recently developed bulk aerosol dry deposition scheme of Zhang and He (2014) will be used for PBM, and the newly developed bi-directional air-surface exchange scheme of Wright and Zhang (2014) will be used for GEM. AMNet only collects fine particulate PBM and the missing fractions of PBM fluxes will also be estimated with assumned mass fractions of coarse PBM. Two-hourly fluxes will be estimated for all the three mercury forms.

Biography

Leiming Zhang is a research scientist at Environment Canada. He received his Bachelor and Master of Science degrees from Nanjing University, China and his PhD from York University, Canada. His research covers diverse areas of air quality model development and data analysis and he has published over 80 journal papers.

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