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A study of temporal variability of atmospheric total gaseous mercury in Windsor, Ontario, Canada

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Windsor (Ontario, Canada) is an industrial city along the Canada-USA border. It is located downwind of several industrial states of the US, including Michigan, Ohio, Indiana, thus experiences trans-boundary air pollution. The combined effects from local anthropogenic sources and trans-boundary pollution have resulted in poor air quality sometimes. Atmospheric Total Gaseous Mercury (TGM) concentrations were monitored in Windsor during 2007 to 2009, to investigate the effects of emission, transport, chemistry, and deposition processes on temporal variability of TGM concentrations. Different temporal aspects of TGM variability were observed. The annual means has declined from 2.0 ng/m³ in 2007 to 1.7 ng/m³ in 2009. The TGM concentrations were high in summer and around noon, but low in spring and evening. Weekends had lower TGM levels than during weekdays. General Liner Model will be used to quantify variance in TGM concentrations that could be explained by inter-annual, seasonal, week-of-day, and diurnal trends, as well as environmental conditions including ambient temperature, wind speed, atmospheric pressure, and O₃ concentrations.

Biography

Iris Xiaohong Xu, PEng., is a Professor at the Department of Department of Civil and Environmental Engineering, University of Windsor, Ontario, Canada. She received her MASc and PhD degrees in Environmental Engineering at the University of Connecticut, USA. She then worked for two years as a Research Fellow at the University of Michigan. She joined the University of Windsor in 2002. Her areas of research include: air quality monitoring, air quality modeling, emission control, and environmental exposure assessment.

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