

**PREDICTION OF MERCURY FATE AND  
ATMOSPHERIC EMISSION FROM  
TERRESTRIAL LANDSCAPES**

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**ABSTRACT**

The fate and the model predicted flux of mercury atmospheric emission from terrestrial landscapes are investigated within the framework of a simulation model. Model results are in fair agreement with published observational data. Microclimate conditions and vegetation functioning type characteristics are sources of variability of mercury terrestrial emissions to the atmosphere. The average emission rate of mercury vapor, formed by the reduction of divalent mercury, is primarily controlled by changes in solar radiation, soil moisture and temperature. The modeling approach used in this study may have potential use in global mercury atmosphere-biosphere cycling models, in atmospheric model studies for assessing acceptable mercury loadings to the atmosphere and also in hazardous assessments to evaluate air pathways of mercury exposure.