



Mercury soil-air fluxes in regions polluted by different anthropogenic activities

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Factors controlling the temporal variability of mercury emissions on a daily basis include sunlight, temperature, substrate moisture content and atmosphere turbulence. However the dominant factor controlling the magnitude of Hg flux is substrate Hg concentration, which is mostly determined by the geological setting or degree of anthropogenic pollution of the area. Mercury evaporation from topsoils at three heavily polluted areas was measured by applying dynamic flux chamber technique. The degree and source of mercury pollution was different in each case. Nevertheless, they are all characterized by high soil and air Hg concentrations. Locations in Idrija and its surroundings (Slovenia) were affected by past mercury mining and smelting activities, location in Sarajevo (Bosnia and Herzegovina) was influenced by heavy military actions and locations in Tuzla (Bosnia and Herzegovina) by former chlor-alkaly industry. The average soil mercury flux ranged from 12.1 ng m⁻² h⁻¹ in Sarajevo to more than 55 ČÝg m⁻² h⁻¹ at the most polluted location in Tuzla. Soil Hg flux was predominantly affected by substrate Hg content. Soil and air temperature, relative humidity and solar radiation seem to be minor factors influencing the magnitude of Hg evaporation.