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Distribution of gaseous mercury in the upper troposphere and lower stratsophere as observed by CARIBIC flights

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Total gaseous mercury (TGM) has been routinely measured since May of 2005 using a long-range passenger aircraft Airbus 340-600 of Lufthansa German Airlines equipped with the new CARIBIC container and inlet system (www.caribic-atmospheric.com). The measurements were made on the routes Frankfurt - Sao Paulo - Santiago de Chile and Frankfurt - Guangzhou - Manila. The dataset thus obtained encompasses sections of the upper troposphere and lower stratosphere of both hemispheres. Apart from the well documented interhemispheric gradient in the upper troposphere the most prominent features of these observations are (1) a pronounced decrease of TGM concentration in the lower stratosphere and (2) a substantial increase of TGM concentrations in the plumes of biomass burning. These features will be presented and the processes behind them discussed.