



## **Recurring enhancements of carbon monoxide in the upper Atlantic troposphere detected from ship-borne Fourier transform spectrometry, model and satellite data**

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Recurring enhancements of atmospheric carbon monoxide (CO) were detected in the upper troposphere (10 km-15 km) in the equatorial regions and in the southern Atlantic (20° S-30° S) using Fourier transform infrared (FT-IR) spectroscopy. The volume mixing ratio (VMR) profiles of CO have been retrieved from ship borne solar absorption spectra recorded in the Atlantic between 80° N and 70° S during 5 different ship cruises. The enhancements in CO VMR could be traced back to African biomass burning sources as well as sources as far as South America. Similar results are observed in CO measurements from space by the Measurements of Pollution in the Troposphere (MOPITT) instrument. Results from the Model of Atmospheric Transport and photoChemistry from the Max Planck Institute for Chemistry (MATCH-MPIC) show good agreement with the FT-IR results. An analysis of the model data allows the quantification of the contributions of different sources such as biomass burning, fossil fuel combustion and oxidation of methane (CH<sub>4</sub>) and non-methane hydrocarbons (NMHC).