

## Plant Uptake of Atmospheric Carbonyl Sulfide (COS) over Tropical Latin America

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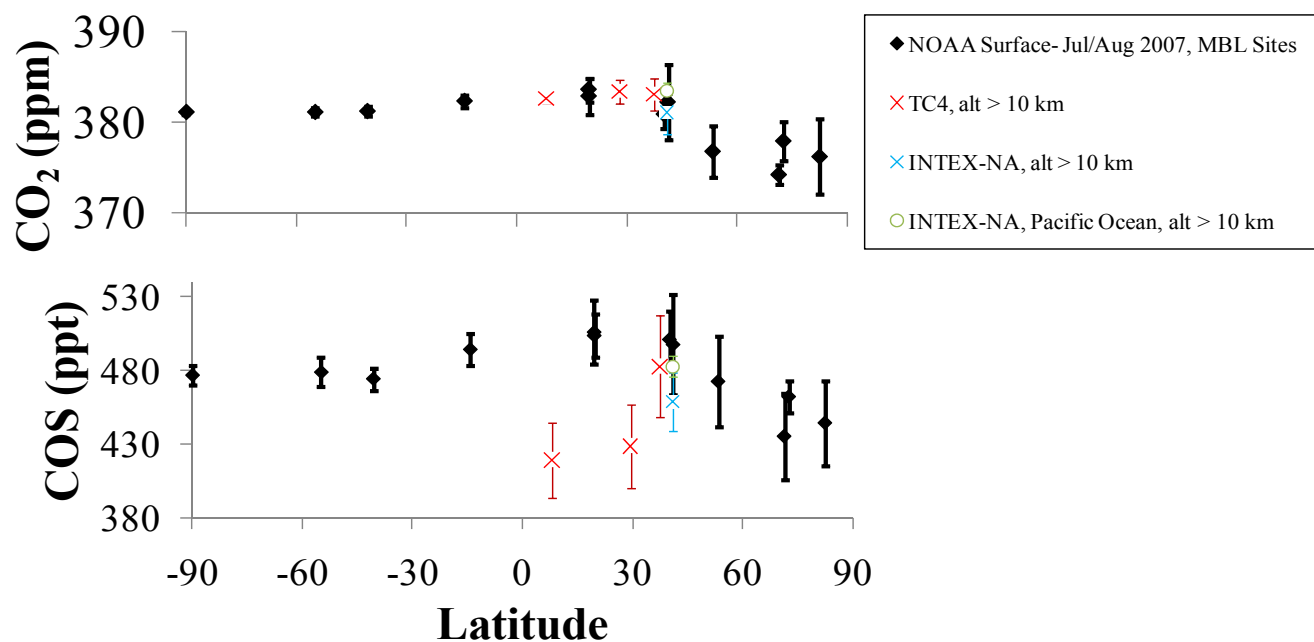
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Atmospheric carbonyl sulfide (COS) contributes to stratospheric aerosol and is a potential tracer of gross primary production (GPP). Earth System Research Laboratory's (ESRL) measurements of COS and CO<sub>2</sub> suggest that plant uptake of carbonyl sulfide is closely related to GPP and is several times estimates used in previous modeling studies. Recent airborne measurements from the TC4 experiment over tropical Latin America provide further evidence of a GPP-based uptake of COS by plants. The enhanced sink then requires an enhanced source to balance the global budget. A global atmospheric model driven by the GPP-based plant uptake and an enhanced ocean source is consistent with measurements from ESRL and the tropical airborne campaign.



**Figure 1.** ESRL measurements of COS and CO<sub>2</sub> from MBL surface sites and NASA airborne measurements from the free troposphere. The COS latitudinal profile departs from the CO<sub>2</sub> profile for TC4 measurements over tropical Latin America where GPP is large relative to NEE and convective transport influences the free troposphere measurements.