

Mauna Loa, Hawaii -- Local and Asian Pollution

Observations made at Mauna Loa, Hawaii (3397 m, 19.5° N, 155.6° W) often show diurnal variations in CH_3Cl of nearly 100 parts-per-trillion (ppt) or about 10% enhancements above background levels. The diurnal cycle is caused by daytime upslope winds (see wind direction plots) that rapidly bring air from coastal and urban areas. At nighttime the air cools and flows down Mauna Loa creating downslope winds that bring air from the free troposphere. In some cases during downslope conditions, pollution originating from Asia is observed with elevated levels of COS, CH_3Cl , CH_4 , Halon-1211 and CCl_4 .

Carbonyl sulfide, CH_3Cl , and CH_4 time-series for March 4th through the 8th 2000 are plotted below. Upslope conditions are plotted with blue points and clearly show local sources for the species. However, during the day of March 5th (between dotted lines and trajectory T2) an air mass originating over Asia was measured. Elevated levels of CH_4 and COS are evident and larger than local sources. However, elevated

