

Validation of Satellite Ozone-depleting Substance Measurements with Airborne Platforms

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A number of *in situ* gas chromatograph and flask sampling systems have been developed within Global Monitoring Division (GMD) since the early 1990s for the measurement of dozens of Ozone-Depleting Substances (ODSs) and climate-forcing trace gases aboard aircraft and balloon platforms. Two primary motivations driving these efforts are: 1) to explore the mechanisms by which many longer-lived ODSs are cycled through the stratosphere where they decay and interact with O₃; 2) to provide airborne measurements at a range of altitudes for the purpose of validating remote measurements obtained from satellites. This poster will present some comparisons of satellite and aircraft measurements made during two recent airborne campaigns – Hiaper Pole-to-Pole Observations (HIPPO) and Global Hawk Pacific (GloPac). It will describe some important interpretation issues to be aware of, and briefly outline a low-cost method of vertically extending our measurements well above the altitudes reached by conventional aircraft. This new sampling method would significantly augment our airborne coverage – especially at stratospheric altitudes – and improve our ability to simultaneously address both motivations listed above.

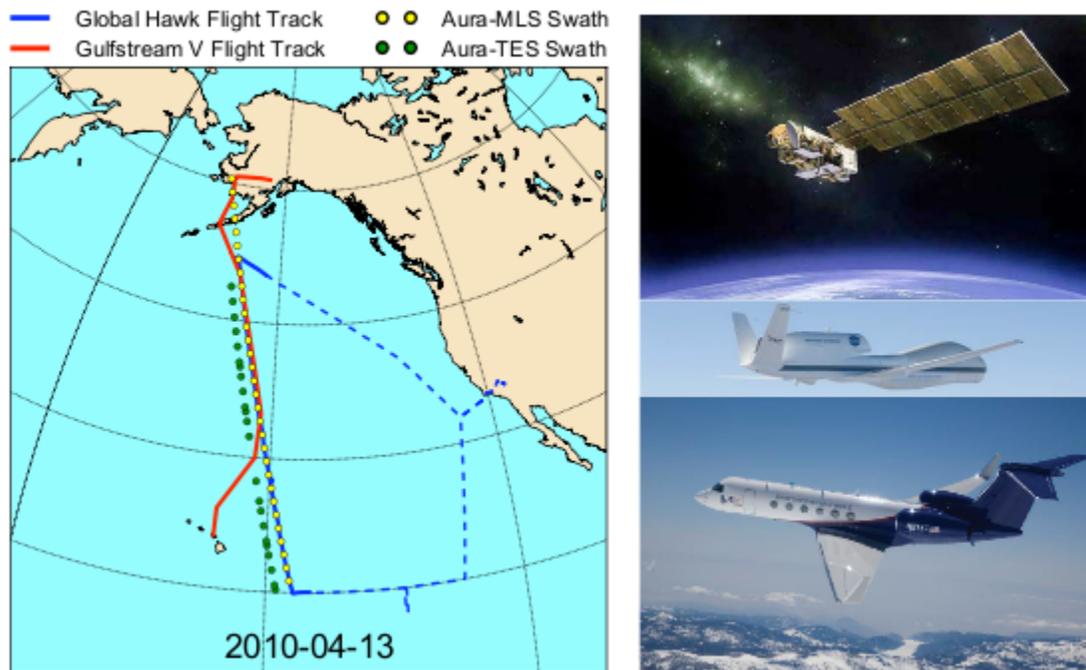


Figure 1. Ground tracks of coordinated HIPPO/GloPac research flights overlapping beneath an Aura satellite overpass on April 13, 2010.