

Selected Results from Trace Gas Inter-comparisons Between AGAGE *In Situ* and NOAA Flask Data

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It is becoming increasingly important to accurately merge atmospheric trace gas data sets from different laboratories and different calibration scales to use them for global interpretative and inverse modeling studies in order to determine sources and sinks of these trace gases. To facilitate this, on-going inter-comparisons of *in situ* data with independent flask and/or *in situ* data collected at common sites are useful as they are sensitive diagnostic tests of data quality for the laboratories involved, and they provide the basis for merging these data sets with confidence.

For the past 8 years up to 250 inter-comparisons of non-CO₂ greenhouse gases have been carried out twice yearly and presented at meetings of AGAGE scientists and cooperating networks. The majority of these inter-comparisons are between AGAGE *in situ* and NOAA flask data (HATS and CCGG) at the five common measurement sites; Cape Grim, American Samoa, Barbados, Trinidad Head and Mace Head.

In this presentation the inter-comparison methods will be outlined and results from selected comparisons will be shown. A brief summary of the overall level of agreement between AGAGE and NOAA data will be given.

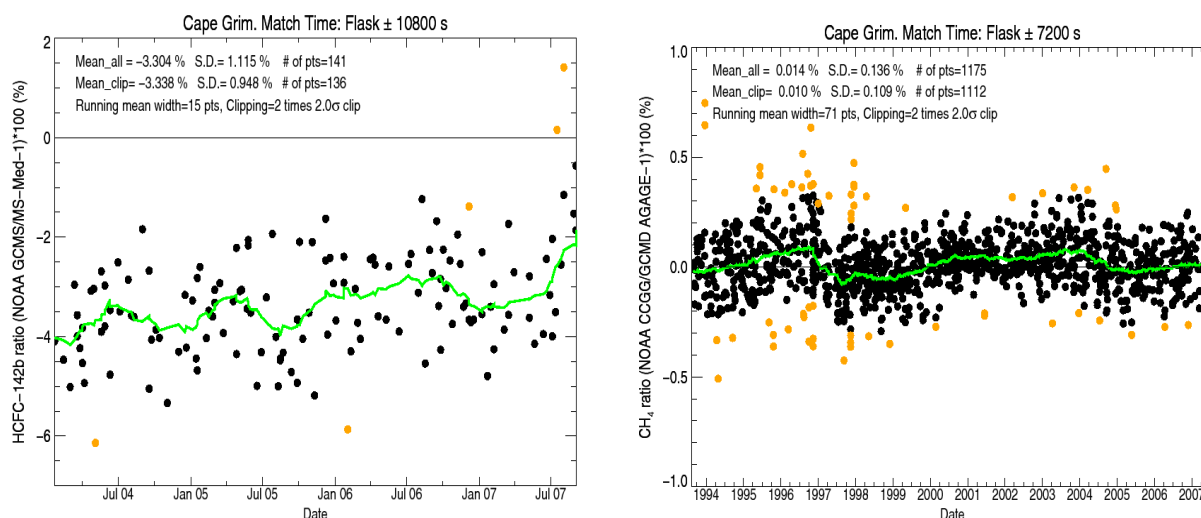


Figure 1. Example of AGAGE *in situ* vs NOAA flask data inter-comparison for HCFC-142b (left) and CH₄ (right) at Cape Grim. The HCFC-142b comparison shows an offset between the two data sets due to different calibration scales (SIO-2005 and NOAA HFC-142b scales) and indicates a small trend with time. The comparison for CH₄ shows excellent agreement between the two data sets and calibration scales (Tohoku University and NOAA-2004 gravimetric CH₄ scales).