

## Monitoring Trace Gases by Shipboard Sampling

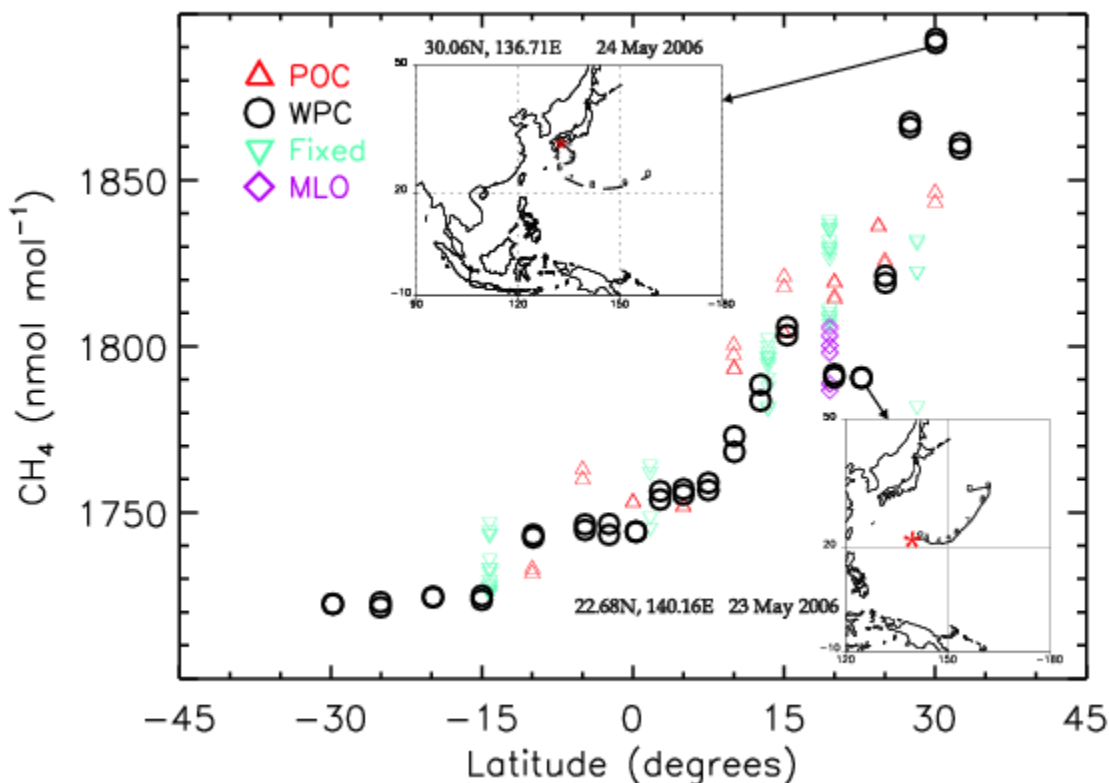
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The NOAA ESRL GMD Carbon Cycle Group operates a surface sampling network including over 60 sites. This global network spans in latitude from the South Pole to Alert, Canada (82.45° N). In addition to land-based sites, three bulk carrier ships sample along two routes in the Pacific Ocean: 1) Nelson, New Zealand to Osaka, Japan (WPC) and 2) Long Beach, California to Auckland, New Zealand (POC). Sampling these routes is increasingly important because it helps capture spatial gradients of trace gases in this region. These data provide important constraints to estimates of trace gas sources and sinks. As an example, in Figure 1 the shipboard data along with wind trajectories show a very strong correlation between Asian air and high CH<sub>4</sub> values. This poster presentation will discuss transport of trace gases over the ocean and the importance of shipboard air sampling.



**Figure 1.** ESRL GMD measurements of CH<sub>4</sub> during a 20 day period in May 2006 as a function of latitude. This figure shows data from two cruise routes and six fixed sites. Trajectories have been added to show source regions for outlying points in the data. Legend: POC – Pacific Ocean Cruise. WPC – Western Pacific Cruise. Fixed Sites from South to North – Samoa, Christmas Island, Guam, Cape Kumukahi, Mauna Loa (MLO; 3397m), and Midway Island.