

# AIRS CO<sub>2</sub> Retrievals Using the Method of Vanishing Partial Derivatives (VPD)

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## *Abstract*

We have derived the mixing ratio of carbon dioxide using on-orbit measurements from the Atmospheric Infrared Sounder (AIRS) currently flying on the NASA Aqua Mission. We have also validated our results against the aircraft observations of carbon dioxide obtained by H. Matsueda *et al* over the western Pacific. The derived CO<sub>2</sub> results from AIRS track Matsueda's flask measurements with an agreement of  $0.43 \pm 1.20$  ppmv. The derivation of the CO<sub>2</sub> results for comparison with Matsueda was carried out in the presence of clouds, with 30% average cloudiness ranging from near zero to 80%.

In this presentation we show global maps of AIRS derived CO<sub>2</sub> for periods of 5 days in January and May 2003 and describe some of the features observed in the CO<sub>2</sub> maps and their zonally averaged values. We discuss also possible connections of those features to stratospheric-tropospheric exchanges in the polar regions.