GAW World Calibration Centre (WCC) for Methane
and
Quality Assurance/Science Activity Centre (QA/SAC)
in Asia and the South-West Pacific

Methane Reference Gas Intercomparison for Asia in 2001
Technical Details on Laboratory Measurements

Korea Meteorological Administration (KMA)

1. Measurement System and Condition

   Hewlett Packard (HP) 5890 Series II gas chromatograph equipped with a flame ionization detector (FID)

   Carrier gas: N_2, Carrier flow rate: 39.5 ml/min, Oven temperature: 30 °C, Column: stainless steel tube (1/8 inches diameter × 6 feet long) packed with activated alumina (80/100 mesh).

2. Standard Gases

   Two standard gases (1822.7 and 2043.5 ppb) calibrated by the Climate Monitoring and Diagnostics Laboratory (CMDL), Boulder, U.S.A. The CMDL scale is lower than an absolute gravimetric scale [Aoki et al., 1992] by ~1.5% [Dlugokencky et al., 1994] and than the AES (MSC) scale by a factor of 1.0151 [Worthy et al., 1998].

References:

Aoki, S., T. Nakazawa, S. Murayama and S. Kawaguchi, Measurements of atmospheric methane at the Japanese Antarctic station, Syowa, *Tellus, Ser. B, 44*, 273-281, 1992

Dlugokencky, E. J., L. P. Steele, P. M. Lang, and K. A. Masarie, The growth rate and distribution of atmospheric methane, *J. Geophys. Res., 99*, 17021-17043, 1994.

Worthy, D.E.J., I. Levin, N.B.A. Trivett, A.J. Kuhlmann, J.F. Hopper and M.K. Ernst, Seven years of continuous methane observations at a remote boreal site in Ontario, Canada, *J. Geophys. Res., 103,* 15995-16007, 1998.