

Recent GAW Activities of KMA

Y. Kim and S. Noh

Korea Meteorological Administration, Daebang-dong, Dongjak District, Seoul, Republic of Korea; +82-2-2181-0635, E-mail: yuwon@korea.kr

The Korea Meteorological Administration (KMA) has been maintaining observations for atmosphere monitoring stably and systematically since 1998. The monitoring factors include seven greenhouse gases (carbon dioxide [CO₂], methane [CH₄], nitrous oxide [N₂O], CFC_{-11,12,113}, and sulfur hexafluoride [SF₆]), four reactive gases (carbon monoxide [CO], ozone [O₃], nitrogen oxides [NO_x], and sulfur dioxide), several aerosols properties, atmospheric radiation, stratospheric ozone, and Ultra-A, B. The Anmyeondo site, designated as a regional WMO GAW site in 1998, has the longest history of atmosphere watch in Korea. The observation outcomes including trends of diverse species in the global and national level can be found on the website below.

(The website address is www.climate.go.kr/home/09_monitoring/index.php/main. English version of this website will be launched soon.)

Recognizing the importance of monitoring SF₆, the KMA began its observation of SF₆ at Anmyeondo in 2007, and accordingly hosted the WMO GAW World Calibration Center for SF₆ (hereinafter “WCC- SF₆”) in 2011, concluding a Memorandum of Understanding with the WMO in October 2012. As of 2016, 53 observatories in 19 countries are monitoring SF₆. The WCC- SF₆ maintains observation standards, regularly hosts international experiments for comparisons and analyses, and provides trainings on the analysis technology with the aim of disseminating SF₆ observation technology to the GAW stations around the world. The KMA, as the WCC- SF₆, published "Analytical Methods for Atmospheric SF₆ Using GC-μECD" and "Calibration Methods of GC-μECD for Atmospheric SF₆ Measurements", registered as WMO publications, WMO GAW Report No. 222 and No. 239, respectively. In line with these activities, the 8th Asia-Pacific GAW Workshop and training course on SF₆ will be held this year in Korea following previous ones every two years. Currently the KMA is planning to participate in the pilot project of WMO “Integrated Global Greenhouse Gases Information System (IG³IS)”. IG³IS is expected to serve as an international coordinating mechanism to guide greenhouse gas emission-reduction actions on the basis of sound scientific evidence. In accordance with the plan of WMO IG³IS Draft paper, KMA’s implementation plan is going to be developed in due course. For the first three years (2018~2020), we’re going to design our own project, benchmarking leading practices by the English and Swiss. We, consequently, will be able to produce new information on CO₂ emission from the inverse-modelling system using our present technology. During the second (2021~2023) and third (2024~2026) phase, we expect to develop and advance our inverse methodology for the national scale to gain information available.

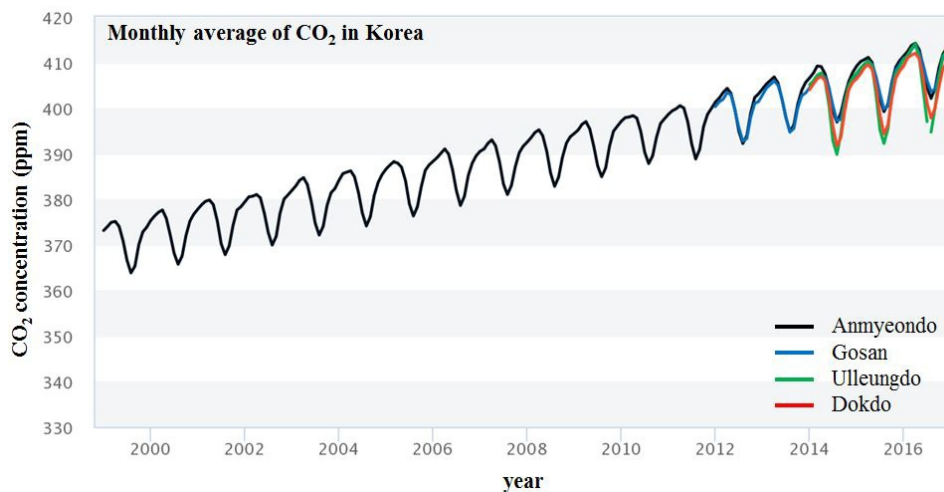


Figure 1. Monthly average of CO₂ over Korea. Black line is for Anmyeondo (1998~2016), blue line is for Gosan (2012~2016), green line is for Ulleungdo (2014~2016) and red line is for Dokdo (2014~2016).