

AAS001-08

Room: 201B

Time: May 28 11:00-11:15

Measurements and emission estimates of hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs) in East Asia

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In-situ measurements of halocarbons including HFCs and HCFCs have been done at the ground monitoring stations on Hateruma Island (123.8 degree E, 24.1 degree N) since March 2004 and at Cape Ochiishi (145.5 degree E, 43.2 degree N) since September 2006 by NIES. Similar halocarbon monitoring also started at Shangdianzi (China, 117.1 degree E, 40.7 degree N) in 2006 as a part of SOGE-A (System for Observation of Halogenated. Greenhouse Gases in Europe and Asia) project, and at Gosan (Korea, 126.2 degree E, 33.3 degree N) in late 2007, operated by Seoul National University. The data from all the four stations were used to estimate the emissions of HCFCs and HFCs from five East Asian countries (China, Taiwan, North Korea, South Korea, Japan) under the framework of an international joint research (Stohl et al., ACPD, 2010). The calculation was done for the year 2008 based on the inversion method. The results showed large contribution of China to the HCFCs & HFCs emissions in East Asia as well as in the world (65.3 kt/yr for HCFC-22; 78% and 17% in East Asia and in the world respectively, 12.1 kt/y for HCFC-141b; 75% and 22%, 7.3 kt/y for HCFC-142b; 81% and 17%, 6.2kt/y for HFC-23; 92% and 52%, 12.9kt/y for HFC-134a; 67% and 9%, 3.4kt/y for HFC-152a; 73% and 7%). These top-down emission estimates of HCFCs & HFCs from China and from Japan will be discussed comparing with their latest bottom-up estimates.

Keywords: HFC, HCFC, measurement, emission, East Asia, greenhouse gas