

## **1.071 Historical trends of air pollutant emissions in Asia: Development of Regional Emission inventory in ASia (REAS) version 3.**

Presenting Author:

**Jun-ichi Kurokawa**, Asia Center for Air Pollution Research, Atmospheric Research Department, Niigata, Japan, [kurokawa@acap.asia](mailto:kurokawa@acap.asia)

Co-Authors:

**Yumimoto Keiya**, Research Institute for Applied Mechanics, Kyushu University, Fukuoka, Japan

**Itahashi Syuichi**, Central Research Institute of Electric Power Industry, Chiba, Japan

**Maki Takashi**, Meteorological Research Institute, Ibaraki, Japan

**Nagashima Tatsuya**, National Institute for Environmental Studies, Ibaraki, Japan

**Ohara Toshimasa**, National Institute for Environmental Studies, Fukushima branch, Fukushima, Japan

Abstract:

Huge growths of emissions of air pollutants in Asia are affecting not only local air pollutions but also regional, inter-continental, and global air qualities. In addition, emissions of greenhouse gases and Short-Lived Climate Pollutants (SLCPs) in Asia are considered to have strong impacts on global climate change. On the other hand, historical trends of emissions in Asia vary with regions and are complicated especially recently. So, it is important to understand current status, past trends, and effectiveness of mitigation measures of air pollutant emissions in Asia. In order to provide fundamental information for these issues, we are developing Regional Emission inventory in ASia (REAS) version 3 and evaluating historical trends of Asian air pollutant emissions in these six decades. For NO<sub>x</sub> emissions, Asia's share of global total increased to 45% in 2010, from 18% in 1970. In Asian countries, nearly half of emissions were from Japan in 1970, but more than half from China in 2010. For BC, Asia's share of global total emissions was relatively large even in 1970 due to residential sources and that in 2010 was increased to 65%. In 1970, majority of emissions was from residential biofuel combustion, but nearly half of emissions in 2010 were also from industry and road vehicles. Recently, air pollutant emissions in China are showing decreasing trends. On the other hand, those in India are increasing basically monotonically. So, relative importance of emissions in India is increasing. Development of REAS version 3 is still underway and at the conference, we plan to show updated results from 1950 to 2015. Also, evaluation of REAS version 3 using results of both inverse modeling and historical model runs in Asia will be reported and discussed.