

## **5.074 Evaluation of the co-benefits of low carbon policies on residential sector in Asian region for air pollution abatement.**

Presenting Author:

**Gakuji Kurata**, Kyoto University, [gkurata@atthehost.env.kyoto-u.ac.jp](mailto:gkurata@atthehost.env.kyoto-u.ac.jp)

Co-Authors:

**Xinghan Xu**, Kyoto University

**Tomoaki Hashimoto**, Kyoto University

**Minna Guo**, Kyoto University

Abstract:

In many Asian countries, the GHG and Short lived Climate Pollutants(SLCPs) emission from residential sector accounts for large percentage.

Many countermeasures are proposed for GHG reduction, and they also can reduce an emission of SLCP at the same time.

In this study, the emission of SLCPs from residential sector in Asian countries and its environmental fate were investigated. First, the current and future air pollutants emissions from residential sector in Asian countries were estimated using bottom-up type energy enduse technology selection model. Energy balance statistics and domestic statistics for energy consumption and energy technology used in residential sector were used as an input data. Then, the regional air quality simulation were carried out to investigate the contribution to the ambient concentration of SLCP using chemical transport model, CMAQ under the current meteorological condition for one year. We estimated the contribution of emission from residential sector to the concentration of PM<sub>2.5</sub>.

Also, the effect of several reduction countermeasures for residential sector were estimated and reduction effect of ambient concentration were calculated. As a result, contribution of the residential sector to PM<sub>2.5</sub> concentration in many part of Asia were calculated as 30-60%. Large seasonal variation were shown in high-latitude region. Finally, the health impact were estimated using similar method of Global Burden of Disease (WHO). We estimated the reduction of premature death due to residential emission under the each countermeasures.