

## Evaluating impacts on the air quality by the field burning of crop residue at the North China Plain

# Kazuyo Yamaji[1]; Masayuki Takigawa[2]; Jie Li[1]; Itsushi Uno[3]; Yugo Kanaya[1]; Pakpong Pochanart[1]; Yuichi Komazaki[4]; Hajime Akimoto[1]

[1] FRCGC/JAMSTEC; [2] FRCGC, JAMSTEC; [3] RIAM, Kyushu Univ.; [4] none

Historically crop residue has been a major energy source at rural area in China, but rapid economic development has increased rural access to commercial energy and decreased the use of biofuel. As the result, crop residue increasingly is being burned in the field. At Mount Tai placed on the North China Plain that is an extended grain-growing region in China, it was pointed out that heavy atmospheric pollution was related to crop residues burning in the field during this observation campaign in June. Moreover, the previous modeling studies indicated that simulated O<sub>3</sub> at Mount Tai tended to be underestimated in June, and that seemed to be caused by a rapid increase in anthropogenic emissions due to economic growth after 2000, uncertainties of the temporal and spatial distributions of crop residue burning, and an insufficient grid resolution to reproduce meteorological fields at an isolated mountain surrounded by high emission sources. In this model study, we developed an inventory for daily atmospheric pollutants emissions (NO<sub>x</sub>, SO<sub>2</sub>, CO, NH<sub>3</sub>, BC, OC, and NMVOC) from field burning of crop residues in China for the year 2006 and tried to run the chemical transport model using this inventory.