

## Subdaily natural CO<sub>2</sub> flux simulation in Kantō area to support inversion analysis of Tokyo' s anthropogenic CO<sub>2</sub> emission

\*Qiao Wang<sup>1</sup>, Ryoichi Imasu<sup>1</sup>, Yutaka Arai<sup>1</sup>, Satoshi Ito<sup>1</sup>, Takahiro Sasai<sup>2</sup>, Hiroaki Kondo<sup>3</sup>

1. AORI, The University of Tokyo, 2. Department of Geophysics, Tohoku University, 3. National Institute of Advanced Industrial Science and Technology

Previous ground monitoring data analysis (Imasu and Tanabe 2018) suggests both diurnal and seasonal variations of atmospheric CO<sub>2</sub> concentration in greater Tokyo area. Such spatiotemporal variability is attribute to a combination of atmospheric processes, human activities and land-atmosphere CO<sub>2</sub> exchange. In this study, we prepare a subdaily version of BEAMS (Biosphere model integrating Eco-physiological And Mechanistic approaches using Satellite data, Sasai et al. 2016) at regional scale to estimate gross primary production (GPP), net primary production (NPP) and net ecosystem production (NEP) in Kanto plain. After calibration and validation, we supply these hourly biogenic CO<sub>2</sub> flux data to the atmospheric transport model AIST-MM (Kondo et al. 2001) to study CO<sub>2</sub> emission from Tokyo.

### References :

Imasu and Tanabe, 2018, <https://doi.org/10.3390/atmos9100367>

Kondo *et al.* 2001, <https://doi.org/10.2151/jmsj.79.11>

Sasai *et al.* 2016, <https://doi.org/10.1002/2015JG003157>

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