

## 2.058 Observations of Ozone-Induced Potential Aerosol Formation at Deciduous Forest and Residential Sites near Tokyo.

Presenting Author:

**Tomoki NAKAYAMA**, Nagoya University, Nagoya, Japan / Nagasaki University, Nagasaki, Japan, [t-nakayama@nagasaki-u.ac.jp](mailto:t-nakayama@nagasaki-u.ac.jp)

Co-Authors:

**Yuuki KURUMA**, Nagoya University, Nagoya, Japan / Institute of Advanced Industrial Science and Technology, Tsukuba, Japan

**Yutaka MATSUMI**, Nagoya University, Nagoya, Japan

**Yu MORINO**, National Institute for Environmental Studies, Tsukuba, Japan

**Kei SATO**, National Institute for Environmental Studies, Tsukuba, Japan

**Hiroshi TSURUMARU**, Kyoto University, Kyoto, Japan / Tokyo Metropolitan Research Institute for Environmental Protection, Tokyo, Japan

**Sathiyamurthi RAMASAMY**, Kyoto University, Kyoto, Japan / National Institute for Environmental Studies, Tsukuba, Japan

**Yosuke SAKAMOTO**, Kyoto University, Kyoto, Japan / National Institute for Environmental Studies, Tsukuba, Japan

**Shungo KATO**, Tokyo Metropolitan University, Tokyo, Japan

**Yuzo MIYAZAKI**, Hokkaido University, Sapporo, Japan

**Tomoki MOCHIZUKI**, Hokkaido University, Sapporo, Japan / University of Shizuoka, Shizuoka, Japan

**Kimitaka KAWAMURA**, Hokkaido University, Sapporo, Japan / Chubu University, Kasugai, Japan

**Yasuhiro SADANAGA**, Osaka Prefecture University, Osaka, Japan

**Yoshihiro NAKASHIMA**, Tokyo University of Agriculture and Technology, Tokyo, Japan

**Kazuhide MATSUDA**, Tokyo University of Agriculture and Technology, Tokyo, Japan

**Ayako YOSHINO**, National Institute for Environmental Studies, Tsukuba, Japan

**Akinori TAKAMI**, National Institute for Environmental Studies, Tsukuba, Japan

**Yoshizumi KAJII**, Kyoto University, Kyoto, Japan / National Institute for Environmental Studies, Tsukuba, Japan

Abstract:

Secondary organic aerosol (SOA) particles, which are generated during oxidation of volatile organic compounds (VOCs), constitute a large fraction of submicron particles. However, formation processes of SOA remain largely uncertain. As a new approach to investigating their formation processes, ozone-induced potential aerosol formation was measured at a deciduous forest site in Tama during summer of 2015 and at a residential site in Tsukuba during summer of 2017. After passage through a reactor containing high concentrations of ozone, total particle volumes increased significantly by 17% (on

average) in the Tama site, especially during daytime when the concentrations of isoprene and oxygenated VOCs were high. In contrast, the increases in total particle volume were much less in the Tsukuba site, where concentrations of isoprene were relatively low throughout the observation period. These results suggest that isoprene and their oxidation products contribute significantly to the ozone-induced potential aerosol formation.