

Research activities on atmospheric climate forcers in the Arctic

M. Koike¹, S. Morimoto², M. Takigawa³, and ArCS ACFA Science Team

¹*National Institute of Polar Research and University of Tokyo*

²*National Institute of Polar Research and Tohoku University*

³*Japan Agency for Marine-Earth Science and Technology*

The Arctic is warming. The main driver is an increase in the global atmospheric concentration of carbon dioxide (CO₂), which is a long-lived greenhouse gas (GHG). In addition, short-lived climate forcers (SLCFs), such as black carbon aerosol (BC) and gaseous methane (CH₄), potentially make a large contribution to Arctic climate change. The aim of our study in the ArCS project is to characterize behaviors of SLCFs (such as BC and CH₄) and other GHGs in the Arctic atmosphere and to quantify contributions of individual sources/sinks or fluxes of these compounds. In this talk we report recent progresses we have achieved and introduce some future activities in the ArCS project.