

中世温暖期から小氷期にかけてのNGRIPアイスコア中の有機エアロゾルトレーサー記録  
Organic aerosol tracer records in NGRIP ice core during the period from MCA to LIA

\*関 宰<sup>1</sup>、山下 洋平<sup>2</sup>、河村 公隆<sup>1</sup>、小端 拓郎<sup>4</sup>、東 久美子<sup>3</sup>

\*Osamu Seki<sup>1</sup>, Yohei Yamashita<sup>2</sup>, Kimitaka Kawamura<sup>1</sup>, Takuro Kobashi<sup>4</sup>, Kumiko Azuma<sup>3</sup>

1.北海道大学低温科学研究所、2.北海道大学地球環境科学院、3.国立極地研究所、4.ベルン大学

1.Institute of Low Temperature Science, Hokkaido University, 2.Faculty of Environmental Earth Science, 3.National Institution for Polar Research, 4.University of Bern

Secondary organic aerosol (SOA) formed by the photooxidation of biogenic volatile organic compounds (BVOCs) and biomass burning organic aerosol are major components of organic aerosol in the atmosphere. Those aerosols are thought to play an important role in atmospheric chemistry and physics, as well as regional and global climate via direct and indirect effects on radiative balance. However, substantial impact of those aerosols on the Earth's climate remains unclear. To better understand the substantial role of those aerosols in the climate system, it is vital to investigate long-term variability of those aerosol components and property in a past. Here we for the first time report biogenic SOA- and biomass burning- (levoglucosan) tracers and UV absorption spectra of organic matter in ice cores from Greenland ice core (NGRIP) during the period from Medieval Climate Anomaly (MCA) to Little Ice Age (LIA). We find that the concentrations and composition of biogenic SOA- and biomass burning- tracers relate to climate with increases in the organic aerosol concentrations during MCA. On the other hand, UV absorption spectra of organic matter in NGRIP ice core also drastically changes associated with climate change. These results suggest dramatic changes in source, loading and property of organic aerosol from the warm MCA to cold LIA.

キーワード：アイスコア、有機エアロゾル、中世温暖期、小氷期

Keywords: ice core, organic aerosol, Medieval Climate Anomaly, Little Ice Age