

KOPRI's research activity at Dasan Station, Ny-Alesund

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Korea Polar Research Institute (KOPRI) has established Dasan Arctic Research Station in Ny-Alesund, Norway in April 2002. During last 15 years, KOPRI has developed and participated in various scientific activities based on the station. The research areas include climate and environment change monitoring, upper atmosphere research, geological survey, long-term eco-system change research, and outreach program for teenaged students. In 2016, total 63 personnels made visits to the station, and 7 major projects were operated *in-situ*: these are: (1) Korea arctic multidisciplinary program, (2) Development of the arctic climate simulator for climate change disaster prediction, (3) Polar organisms: cold-adaptation mechanism and its application, (4) Study on the chemical fate of arctic pollutants and monitoring of new contaminants in Kongs fjord (Kongs fjord pollutants monitoring), (5) Research on environmental changes in fjorden and coastal geomorphology of Svalbard archipelago, (6) Circum arctic permafrost environment change monitoring and future prediction techniques, and (7) Environmental change studies based on the arctic Dasan station: in terms of geology, atmospheric science, and ecology.

During the talk, important achievements of the programs will be briefly addressed. For example, as the physico-chemical properties of aerosol are one of key factor affecting the radiative balance of the Arctic atmosphere, KOPRI's program on the 'Dimethylsulfide-aerosol-cloud interaction' will be explained more detailed manner (see figure 1 for the schematic concept). KOPRI's long-term measurements results of monthly Cloud Condensation Nuclei from the Zeppelin station will be addressed as well. The CCN concentration shows high value during spring season, mainly due to Arctic Haze, but interestingly the high concentration last into the summer season, probably contributed by growth of recently formed particles.

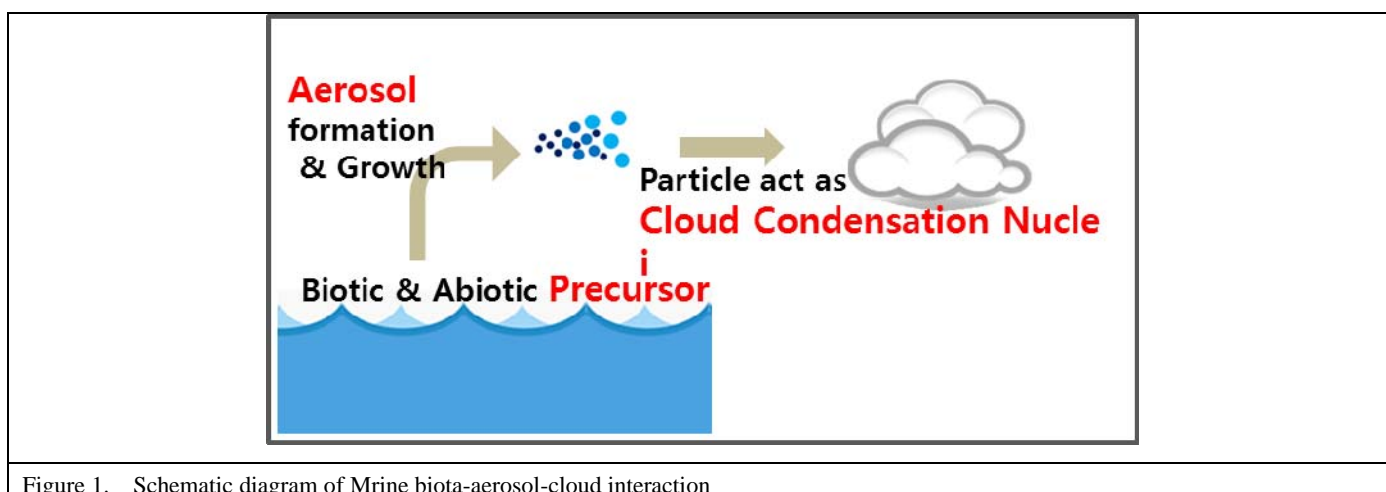


Figure 1. Schematic diagram of Marine biota-aerosol-cloud interaction

In addition, 4 high school students participated in the research activities, as outreach program.

As the speaker has been serving as the vice-chair of the NySMAC (Ny-Alesund Science Managers Committee) since 2015. NySMAC is consisted of 18 member institutes and 3 observer institutes. The role of the committee will also be briefly addressed during the talk. Most importantly, the 'Ny-Alesund Science plan' has been endorsed in 2015, which addresses the scientific focus in conjunction with 4 flagship program – The Kongs fjorden system, the terrestrial ecosystem, the atmospheric research, and Glaciology. Updates flagship activities are going to be addressed to the audience.