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Coordinating interdisciplinary and international research through CATCH (The Cryosphere and ATmospheric CHemistry)

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CATCH is a new international activity co-sponsored by IGAC (International Global Atmospheric Chemistry) and SOLAS (Surface Ocean - Lower Atmosphere Study). As an emerging international activity established in 2016, the CATCH mission is to facilitate atmospheric chemistry research within the international community, with a focus on natural processes specific to cold regions of the Earth. Cryospheric processes are known to be important for atmospheric chemistry in the Polar regions as well as other cold regions, such as continental snowpack. These processes are strongly linked to global and local environmental change, for example, through changes in snow and sea ice cover and aerosol processing in cold regions.

CATCH aims to coordinate and encourage international/interdisciplinary cooperation between scientists in order to better understand and predict:
- The impacts of physical, chemical, biological, and ecological changes in sea ice and snow on atmospheric chemistry;
- Aerosol formation and processing in cold regions;
- Changes in the cryosphere that alter feedbacks between climate change and atmospheric chemistry;
- Ice core records of global environmental change;
- Cold region aerosols as cloud condensation nuclei and their impacts on cloud properties;
- Impacts of microbiology on the biogeochemical cycling of elements in cold environments; and
- Changes in cold region atmospheric gases and aerosols due to industrialization and climate change.

In this presentation, the ways for linking modeling and measurements including observations in the Arctic through CATCH in the future will be explored. CATCH is seeking participation and guidance and engagement from the community, including how to best link to existing efforts, to meet these objectives and to define future directions.