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[JJ] Evening Poster | M (Multidisciplinary and Interdisciplinary) | M-IS Intersection

## [M-IS21]Arctic and Antarctic Science and Future Plan

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The global environmental change is of great interest for both governments and general public, as well as scientists studying on the earth and planets. The Arctic and the Antarctic regions significantly affects global environmental variation and also provide invaluable information on its the variation. In the Arctic region, for example, temperature increase due to the global warming is the largest on the globe. The climate change is most significantly emerging which causes change of ecology, human economic activity and life. On the other hand, very little is known on the response of the huge Antarctic ice sheet of the Antarctic to the global warming, and hence a possible change in Antarctica on a global scale ility of a huge global change and its prediction are of greatest interest. Variations in the bipolar regions are not independent but connected through ocean and atmosphere circulations, and therefore it is necessary to consider them to be one unified system. Moreover, the Arctic and Antarctic regions are the best observation and/or investigation field for space/planetary sciences, atmospheric/hydrospheric sciences, and solid earth sciences, indicating that the polar regions are important windows for earth and planetary sciences. This session is devoted to a forum to present Antarctic and Arctic sciences in many different aspects. Scientific discussions for building up a proposal for the master plan 2020 of the Science Council of Japan are expected.

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## [MIS21-P03]Potentiality of development in geology and paleoceanography of polar oceans

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The Arctic and Southern Oceans (AO and SO) are keys region with profound influence on climate variability throughout the Cenozoic. Recent global warming changes Arctic environments drastically, and future prediction of Arctic climate is now desired. Future scientific issues are the progress of Cenozoic cooling, sea ice distribution in the climatic warmth, the climatic significance of the Bering Strait, the climatic impact on Arctic human societies. Because the SO redistributes heat, fresh water, carbon and nutrients around the global ocean and it plays a key role in the climate system. The growth of ice sheets in the Antarctic continent and changes in sea ice in the surrounding ocean are important variables in earth's climate system. Paleoclimate records from latitudinal transect drilling on the continental shelf and offshore around the East Antarctic margin are also necessary for understand the dynamics of interaction between East Antarctic Ice Sheet (EAIS) and SO. Seafloor drilling, coring and bathymetrical survey using icebreakers are necessary for further paleoceanographic study in the Arctic and Southern Oceans.