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

[M-IS06]Global climate change driven by the Southern Ocean and the Antarctic Ice Sheet

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The Southern Ocean and Antarctic ice sheet, which are the giant reservoirs of heat, water, and materials, have a potential to play central roles in long-term global climate change. This system is composed of the following sub-systems; ice shelf which is a place of the interaction of ice sheet and ocean, flowing iceberg, seasonal sea ice zone, Antarctic bottom water which drives the thermohaline circulation, active biological production and Antarctic Circumpolar Current. These sub-systems are interacted with each other and have significant impact on changes in the global environmental system. This session aim to summarize recent observational and simulation studies from various fields relating to the past and present changes in the Antarctic Ice sheet and Southern Ocean, which are essential elements for unraveling the changes in the global climate system. Further, future science plans for understanding of the environmental changes of the Antarctic Cryosphere is also discussed.

[MIS06-P12]Paleoenvironmental reconstruction using Antarctic ice cores: FY2017 activities

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A KAKENHI project "Giant reservoirs of heat/water/material : Global environmental changes driven by Southern Ocean and Antarctic Ice Sheet", has started, and its subprojects include "Variations and interactions of climate and the Antarctic Ice Sheet". As a part of this subproject, ice cores from Dome Fuji and coastal areas, as well as marine sediment cores, will be analyzed to reconstruct paleoenviroment in various time scales. In particular, reconstructions are focused on the past atmospheric CO_2 for model input, stable isotopes of H_2O and noble gases for temperature reconstructions, aerosols for radiative forcing and biogeochemical cycles, and atmospheric CH_4 for understanding climatic instabilities. Ice core chronology will be improved and compared with model outputs and marine sediment records. Process studies for sea ice reconstruction will also be conducted. In this presentation, major FY2017 activities will be summarised.