
[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-P16]Geodetic signatures due to present and past ice-mass variations around Syowa Station, East Antarctica

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Geodetic and geomorphological surveys in Soya Coast area, East Antarctica have been conducted by Japanese Antarctic Research Expedition (JARE) in order to evaluate the crustal deformation induced by Glacial Isostatic Adjustment (GIA) in various time scales. In particular, several geodetic observations (e.g., Global Navigation Satellite Systems: GNSS and continuous gravity observations) have been carried out on outcrop rocks in this area since the 1990s to monitor recent crustal movements. These observations include the components of the GIA induced by last deglaciation and elastic deformation due to recent surface mass balance. In this presentation, we will show the geodetic signals calculated by GIA model adopting the previously published deglaciation histories, and compare with the results of geodetic observations obtained by JARE for about 20 years. We intend to discuss the separation of the components between recent ice mass change and last deglaciation, and estimate influences of recent Antarctic ice mass variation on the geodetic signatures in Soya Coast area.