

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

[M-IS10]Paleoclimatology and paleoceanography

convener:Yusuke Okazaki(Department of Earth and Planetary Sciences, Graduate School of Science, Kyushu University), Atsuhiko Isobe(Research Institute for Applied Mechanics, Kyushu University), Akihisa Kitamura(静岡大学理学部地球科学教室, 共同), Masaki Sano(Faculty of Human Sciences, Waseda University)

Wed. May 23, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

Past environmental changes and events at multi-decadal to tectonic timescale toward an understanding of Earth climate system by an integration of terrestrial and marine proxy studies and numerical modeling will be discussed. We welcome a variety of paleo-environmental studies from a wide range of background. In particular, a series of presentations relating to the Anthropocene will be planned. This is a merged session of A-OS31 "Linkage between oceanography and paleoceanography in marginal, shelf and coastal oceans" and M-IS23 "Paleoclimatology and paleoceanography" sessions at JPGU 2017. We hope that this session will provide an opportunity to promote communication between participants from multidisciplinary field.

[MIS10-P13]Analyses of XRF corescanner data of sediment cores in the Gulf of Alaska

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Keywords:Gulf of Alaska, XRF corescanner, mountain glaciers, deglaciation

The drainage area of the Gulf of Alaska (GoA) has about 13 % of mountain glaciers in the world, and a half of freshwater supplied to the GoA is attributed to the Alaskan mountain glaciers. Further, the freshwater volume supplied to the GoA is the second largest in the Pacific, influencing a freshwater mass balance in the Arctic Ocean. The melting of these Alaskan mountain glaciers represents the highest rates in the world (Woodgate and Aagaard, 2005 GRL; Royer and Grosch, 2006 GRL), and the Alaskan mountain glaciers are considered to lose 60 % of the present ice mass by 2100 year due to the global warming.

We collected a sediment core (~8.5 m long) in the GoA during the KH17-3 cruise. XRF corescanner measurements (ITRAX, Cox analytical systems) were conducted for core CL14 (59°33.350'N, 144°09.344'W, 695 m water depth) to obtain high-resolution productivity records and meltwater-related river discharge records. This core covers the last 15 kyr, which shows two higher productivity intervals marked by higher Br intervals (Dimbitsky et al., 2001). These higher productivity intervals represented Bolling/Allerod and meltwater pulse-1B. Fe and Ti, proxies for detrital materials, represented two higher intervals in the early B/A period, corresponding to meltwater pulse 1A. Higher Fe and Ti intervals during meltwater pulse 1A indicate the huge loss of the Cordilleran Ice Sheet that developed in the western Canada and America during the last glacial maximum. During meltwater pulse 1A, marine productivity was not enhanced even though colloidal-Fe was significantly supplied from the meltwater of glaciers (Schroth et al., 2014).