

[JJ] Evening Poster | A (Atmospheric and Hydrospheric Sciences) | A-CC Cryospheric Sciences & Cold District Environment

[A-CC29]Ice cores and paleoenvironmental modeling

convener:Ryu Uemura(University of the Ryukyus), Kenji Kawamura(National Institute of Polar Research, Research Organization of Information and Systems), Ayako Abe-Ouchi(東京大学大気海洋研究所, 共同), Nozomu Takeuchi(Chiba University)

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Analyses of ice cores from polar and mountain regions have contributed to the reconstruction and understanding of the past environmental changes on timescales from years to several hundred thousand years. In this session, we welcome paleoenvironmental studies using ice cores and paleoclimatic modeling. Studies on reconstruction methods, recording processes and new paleoenvironmental proxies, technical aspects of paleo-modeling are also welcomed. Studies with marine sediment cores, terrestrial sediment cores and tree-rings on similar timescales are also important and welcomed, in order to discuss past environmental changes from multidisciplinary viewpoints.

[ACC29-P08]Numerical investigation of assessment for 1.5 Ma old ice core in the Dome Fuji region

*Shun Tsutaki¹, Ayako Abe-Ouchi^{1,2}, Ralf Greve³, Fuyuki SAITO², Heinz Blatter⁴, Takashi Obase¹, Shuji Fujita^{5,6}, Kenji Kawamura^{5,6}, Kenny Matsuoka⁷ (1.The University of Tokyo, 2.JAMSTEC, 3.Hokkaido University, 4.ETH Zurich, 5.National Institute of Polar Research, 6.SOKENDAI, 7.Norwegian Polar Institute)

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Drilling a deep ice core extending 1.5 million years (Ma) back in time is crucial to better understand the transition in the periodicity of the glacial cycles changed from 40 kilo year (ka) to the current 100 ka during the mid-Pleistocene transition (0.9−1.2 Ma). However, continuous ice core records more than 1 Ma have not been retrieved in the Antarctic ice sheet. Sufficient knowledge of the basal topography and thermal conditions beneath the ice sheet, and the three-dimensional ice flow regime from the bed to the surface are required to identify a suitable drilling site that may provide a continuous record of past mechanisms of climate change. A three-dimensional thermodynamic ice sheet model is a powerful tool to simulate internal and subglacial thermodynamical conditions of the ice sheet. In this study, we simulate the ice flow regime, subglacial thermal conditions and internal isochrones in the Dome Fuji region as well as along the JARE traverse route with the ice sheet model SICOPOLIS with high spatial resolution (8 km) to progress the identification of a suitable drilling site at the region.