[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)

Tue. May 22, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe) 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-P03]A comparative study of mineral dust on glaciers in Pamir and Tianshan Mountains in Central Asia

\*Shunsuke Takeuchi<sup>1</sup>, Nozomu Takeuchi<sup>1</sup>, Yoichiro Hori<sup>1</sup> (1.Chiba University) Keywords:Dust, Glacier, Pamir, Tianshan Mountains

Mineral dust is widely used in ice core studies as an indicator of atmospheric circulation and ground surface conditions in the past. Because of high abundance of airborne dust, concentration of dust is generally high in the ice cores drilled on glaciers in Central Asia. Although there have been many studies on the dust concentrations for the ice cores, only few studies have analyzed the mineral composition and other chemical or physical characteristics of the dust. This study aims to analyze and compare the characteristics of dust in snow of glaciers in Pamir and Tianshan Mountains in Central Asia, to clarify the difference of characteristics of dust in these areas, and to compare with the surrounding ground surface dust to investigate the source of the dust in each glacier. We analyzed dust in snow pit samples collected on the Lenin ice cap and Fedchenko glacier in Pamir mountains areas, and on Urumqi No.1 glacier in Tianshan Mountains. Mineral composition ratio analyzed by XRD and optical characteristics of spectrometer showed that dust mineral composition and reflectivity spectrum were similar between Lenin ice cap and Fedchenko glacier, while they were different from those of Urumqi No.1 glacier. This suggests that dust of the two glaciers in Pamir is derived from a common source while the glacier in Tianshan has different sources. Comparison of the dust between snow and the surrounding ground surface in the Lenin ice cap showed that the dust in snow has very similar characteristics to the ground surface dust. This suggests that dust of this glacier is supplied from the surface of the ground around the glacier. On the other hand, dust of the Urumqi No.1 glacier snow didn't agree with that of the ground surface around the glacier. This suggests that dust of this glacier is not supplied from nearby ground surface, but from distant arid areas far from this glacier. Our results revealed that characteristics of dust deposited on glaciers located in the Central Asia differ between Pamir and Tianshan and each region has different sources. This implies that dust concentrations in the mountain ice cores of Central Asia is necessary to be considered in terms of the source of each region.