Past climate change recorded in Antarctic deep ice cores

Kumiko Goto-Azuma[1]; Motoyama Hideaki Members of the Dome Fuji ice core drilling and ice core studies[2]

[1] NIPR; [2] -

Ice core drilling at Dome Fuji, East Antarctica reached a depth of 3035.22m in January 2007. In East Antarctica, three other deep ice cores have been drilled at Dome C, DML and Vostok. The Dome Fuji oxygen isotope profile, compared with the Dome C deuterium profile, suggests that the Dome Fuji core goes back to 720,000 years ago. The Dome Fuji core is now the second oldest ice core after the Dome C core, which goes back to 800,000 years ago. These Antarctic deep ice cores are excellent archives of past climate and environment over several glacial cycles. The interglacials prior to 430,000 years ago were colder than later ones. Variations of greenhouse gases, mineral dust and sea-salt aerosols were highly correlated with variations of air temperatures. All the glacial periods back to MIS 16 show millennial-scale climatic variations. The past climate and environment reconstructed from the Antarctic deep ice cores provide us with key information for prediction of the future climate and environment.