Migration of Dome Fuji summit position in glacial and interglacial periods - an approach to detect principal axes of strain within the ice sheet using a radar sounding method -

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“Oldest Ice” in the Dome Fuji region is a main research target for ICRC in the coming decade. In our early radar sounding observations of the ice sheet in 1990s, we observed crystal orientation fabrics of the ice sheet and strain history using a radar, applying a principle of radio-wave birefringence of polycrystalline ice. We first conducted polarimetric radar survey at the deep ice coring site. We found that radio wave birefringence agreed well with the crystal orientation fabrics within ice. Then, we conducted the same radar survey at many locations in the 60 km x 60 km area of the Dome Fuji summit. By the measurements, we detected principal axes of strain and the strength of birefringence accumulated within ice. We found that present stress field and strain field do not agree with each other. In particular, in an area south of the present location of the dome summit, deviation was large whereas in the north of the present dome deviation was small. We speculate that the dome summit was in the past sin the south inland of the present location. The dome migrated, most likely in south - north directions, due to strong moisture flux from the coastal side, which happens in interglacial periods. In the symposium, I discuss how data was obtained and discussed. Sites for drilling "Oldest Ice" should be chosen considering the migration history of the dome summit. If dome summit in the glacial periods are located in the south of the present location of the dome, candidate sites should be searched in the south of the present dome.