

Continuous GPS observation in snow season with a hand-made radome at Mt. Meakan-dake

Hitoshi, Y. Mori^{1*}, Satoshi Okuyama¹, Makoto Murakami¹

¹Institute of seismology and volcanology, faculty of science, Hokkaido university

Semi-continuous GPS observations were started at the northern flank (FPS), at the northeastern flank (HKT) and at the eastern flank (SMZ) of Mt. Meakna-dake in July 2011 and ended in November 2011. At the eastern part of Mt. Tokachi-dake, same GPS observations were made at two points between August and October, 2011. Those results were shown in the 2012 JpGU meeting. We use Trimble 5700 receivers and Zephyr Geodetic antennas at every station.

In May 2012, we started the observations at Mt. Meakan-dake and ended in November. There is the same seasonal change of coordinates in the both year. We cannot find the difference due to volcanic deformations. Because our observations are carried out only in no snow season, it is difficult to study the seasonal change strictly.

We try to make the observation at SMZ in snow season for the investigations of the seasonal change. There was the relatively less snow at SMZ than at the other two stations of Mt. Meakan-dake. It is thought that the antenna at SMZ will not be buried with snow. The antenna at SMZ installed in a radome. Data in every second are recorded in a 2GB CF card. An amount of data in a day is less than 14MB. It is able to store GPS data until the middle of April

For this observation, a 45cm diameter radome was made. It has a hemispherical dome and a circular sole, which are made of three millimeter thick acrylic acid resin. An Antenna with a tribrack installed in a radome. It is very hard to approach to SMZ in winter. Therefore, we made the other same dome and make observations at Hokkaido University campus in Sapporo city at the same time, for clarifying the observation condition in the snow season.

In the presentation, the results of observations through one year at SMZ will be shown and the effect of snow will be discussed.

Keywords: GPS, Mt. Meakan-dake, continuous observation, snow