
[EJ] Evening Poster | S (Solid Earth Sciences) | S-GD Geodesy

[S-GD02]Geodesy General Contributions &Global Geodetic Observing System

convener:Koji Matsuo(Geospatial Information Authority of Japan), Yusuke Yokota(Japan Coast Guard, Hydrographic and oceanographic department), Takahiro Wakasugi(国土交通省国土地理院)

Wed. May 23, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

In this session, general contributions from all areas of geodesy are welcomed. Topics of interest will include but not limited to recent advances in measurement techniques, reference frame realization, earth rotation or earth tide. In addition, this session also provides a forum for discussing GGOS (Global Geodetic Observing System) related observation programs, advancements of geodetic techniques, collaboration among various organizations in the world. Topics will include improvements of observing system and data analysis, participations in global programs, global reference frames and geodesy's contributions to society.

[SGD02-P05]Making and Evaluation of Small GNSS Observation Equipment

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Keywords:Low Cost GNSS

GSI of Japan established GNSS continuous observation system (GEONET) which consists of 1300 GNSS observation stations and cover almost of Japan region. When earthquake occur in Japan, GSI calculates crustal deformation and fault model from GEONET data and release it.

GEONET is quite effective for subduction-zone earthquake event because averaged span of GEONET station is about 20 km. But for inland earthquake, GEONET does not always detect crustal deformation sufficiently.

GSI also developed Remote GNSS Monitoring System (REGMOS) for severe observation condition e.g. upper part of volcano etc.. REGMOS expands GNSS observable region because of its high endurance design for low temperature, strong wind and snow. Consequently, weight and dimension of REGMOS are not suitable for dense expansion of GNSS observation network.

In this study, we developed small and low cost GNSS observation equipment for spatially dense expansion of GNSS observation network keeping positioning precision. We use u-blox M8T module for GNSS receiver and combine control PC: raspberryPi3, battery, solar panel, wireless communication module: xbee PRO. We evaluated our GNSS observation equipment. As a result, our observation equipment shows few mm s.d. in static analysis.