
[JJ] Evening Poster | G (General (Education and Outreach)) | General (Education and Outreach)

[G-04]Geoscience Outreach

convener:Takeyuki Ueki(Faculty of Risk and Crisis Management, Chiba Institute of Science), Jiro Komori(Teikyo Heisei University), Naoko HASEGAWA(お茶の水女子大学, 共同), Satoko Oki(Faculty of Environment and information Studies)

Sun. May 20, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

The aims of Outreach and geoscience education are to encourage developments that raise public awareness of geosciences through schools and/or public outreach by not only educators but also researchers. Therefore, any presentation related with these aims will be welcomed to this session. Depending on schedule and venue,some presentation will be changed to Poster presentations.

[G04-P05]Outreach of tsunami observation using experimental water tank

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Keywords:tsunami experiment, ocean bottom pressure gauge, tide gauge, tsunami observation

In the annual open campus in Earthquake Research Institute, the University of Tokyo, students demonstrate several experiments related to geoscience phenomena, such as tsunamis, caldera collapse, seismic wave propagation or volcanic eruption. Among them, the tsunami experiment using water tank gets good reviews from audiences every year, because different processes of tsunami, such as including generation, propagation and run-up on coast, can be demonstrated in one tank.

In the field of tsunami science, the development of tsunami observation system is one of the biggest progresses. Several types of tsunami observation systems have been deployed, such as tide gauges on coast, offshore GPS buoys (e.g. the Ministry of Land, Infrastructure, Transport and Tourism), or offshore ocean bottom pressure (OBP) gauges (e.g. DONET by JAMSTEC, or S-net by NIED). They are useful for tsunami research and the real-time detection and prediction tsunami approaching on coastline. However, it seemed that these systems were not recognized well to the audiences of the open campus.

In the open campus in 2017, we equipped the water tank with tsunami measurement tools, buoy-type and ocean-pressure-gauge-type (OBP-type). The buoy-type measurement is composed of a styrene buoy guided by a vertical steel bar. By measuring the distance from roof to the buoy with an infrared distance sensor (GP2Y0E03), tsunami waves are detected as disturbance of electronic signals. On the other hand, the OBP-type pressure gauge is a air-pressure sensor (MIS-2500-015G) in a small plastic case filled with silicon oil, which is put on the bottom of the tank. By measuring water-pressure disturbance due to water height change, tsunami waves were detected. The tsunami signals are displayed to the audience in real time as electronic disturbances with a display (MR8847-01) in real time.

Public recognitions and understandings of tsunami observation system are important in terms of our geoscience activities and the disaster mitigation. The demonstration of experimental observation tools with miniaturized tsunami waves is useful to get higher recognition of the tsunami observation systems.