Organic elemental analysis and stable isotope analysis of tsunami deposit

*Yuki Ito¹, Takumi Yoshii¹, Shiro Tanaka¹, Takaomi Hamada¹, Masafumi Matsuyama¹

1. Central Research Institute of Electric Power Industry

Assessment of tsunami deposits is necessary to reduce the hazard in coastal area in the future. Multiple proxies using sand units, grain size and/or microfossils such as diatoms have been applied to identify tsunami deposits. However, the way of distinguish tsunami deposits has not been established yet. Recently, various geochemical compositions have been proposed in order to distinguish them more precisely. In this study, C/N and isotopic (d13C) analyses were used to determine source of organic matter in 2011 Tohoku-oki tsunami deposits collected from 17 coastal areas which range from north to south in 500 km. We collected particulate organic matter (POM) in seawater, beach sand and tsunami deposits and treated them with HCI. The data of POM and sand beach are evaluated to be an end-member of marine origin, while these values of tsunami deposits vary greatly.

Keywords: tsunami deposit, Tohoku-oki tsunami, organic matter