

Behavior of the 2011 Tohoku-oki tsunami using magnetic fabric

*Yasuhiro Takashimizu¹, Yuka Hatori¹, Atsushi Urabe¹, Yoshihiro Kase², Keiichi Hayashi²

1.Niigata University, 2.Geological Survey of Hokkaido, Hokkaido Research Organization

Behavior of the 2011 Tohoku-oki tsunami was reconstructed using magnetic fabric. First, a plane bed was formed using experimental flume in order to verify the effectiveness of the magnetic fabric, and it is confirmed that the current direction estimated using magnetic fabric is the same direction of flow in the flume. Then, field survey and facies descriptions of the deposits were conducted in Odaka area, Minami-Soma city, Japan. The deposits were divided into three sedimentary units based on facies descriptions and magnetic fabric data. Unit 1 is of medium-grained sand including abundant mud clasts and is interpreted to inflow deposits. Unit 2 consists of parallel laminated medium-grained sand deposited under return flow of the tsunami. During the final and/or post tsunami period, organic silt (Unit 3) was accumulated from stagnant water caused by the tsunami.

Keywords: magnetic fabric, tsunami deposits, anisotropy of magnetic susceptibility, the 2011 Tohoku-oki tsunami