# Deep magmatic activity beneath Iwate volcano, Japan, as inferred from low-frequency earthquakes and fine S-wave velocity structure

# Haruhisa Nakamichi[1], Hiroyuki Hamaguchi[2], Satoru Tanaka[3], Sadato Ueki[4], Takeshi Nishimura[5]

[1] RCPEVE, Tohoku Univ., [2] Res. Centr. Pred. Earthq. Volc. Erupt.,Grad. Sch. Sci., Tohoku Univ., [3] Graduate School of Sci. Tohoku Univ, [4] Research Center for Prediction,Tohoku Univ, [5] RCPEV, Science, Tohoku Univ.

Deep low-frequency events are located within three localized regions in low S-wave velocity anomaly zones at a depth of 32 km south of the summit of Iwate volcano and those of 33 and 37 km northeast of the summit, respectively. Intermediate-depth low-frequency events are located within a vertical pipe-like region extending from 5 to 12 km depth beneath the summit where is characterized by a high S-wave velocity anomaly. The vertical migration of the focal depth of intermediate-depth low-frequency events is interpreted as reflection of the movements of magma at these depths. The source mechanisms of deep and intermediate-depth low-frequency events have significant DC, CLVD components. A model of a tensile crack coupled with a magma chamber is proposed to generate the low-frequency events.