

# Pseudo Reflection Profiling of Fuji volcano

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Pseudo Reflection Profiling method is applied to seismic waveform data of the 2003 controlled source exploration in order to reveal subsurface structure of Fuji volcano. Three major profiles are presented across the volcano. An overview of seismic velocity structure from an inversion analysis have been already presented in the previous joint meeting by Oikawa et al.(2004) and research group for seismic exploration of Fuji volcano(2004).

Since steep topography prevent us from introduction of any motor powered vehicles, it is impossible to apply conventional seismic reflection survey in Fuji volcano. However, Pseudo Reflection Profiling method is available even under such worse condition because the method eliminates multiple reflections in the surface layers from records for far away sources. The method successfully reproduces an equivalent of zero-offset reflection record under such conditions being dormant in active volcanoes.

Three profiles are obtained, the summit profile across the central part, the flank profile across northwest flank and its branch towards the drilling point FJ3 of ERI at northeast flank of Fuji volcano. Optimum analysis parameters, such as window position and filter cutoff frequencies have been tuned during the processing.

Complicated reflector patterns are revealed at the shallow part of the profile sections. However almost symmetric patterns with summit axis appear in the profile, another symmetric pattern with off-summit axis is seen in the east flank, Subashiriguchi area, of the summit profile. Discontinuous pattern of reflectors appear toward east flank around the terminal of Subaru line toll road while simple parallel reflectors are seen in the west to north flank of Fuji volcano. These facts prove that there is complicated geological structure in the edifice of Fuji volcano.

A seismic basement may be detected as a reflector with long wavelength undulation around 2s of two way time in all profiles. The reflector is detected around 1s of two way time in the east flank. The reflector seems to have steep northwest-ward dip and reaches maximum depth under the region among the summit and the north flank of Fuji volcano. The reflector rises up again in the southwest flank. The previous seismic study represented deep high velocity in the west and shallow high velocity in the east flank of Fuji volcano. Tsuya(1968) described an existence of Misaka group around sea level from Obuchi drilling core at south flank of Fuji volcano. These previous geophysical and geological knowledges suggest that the reflector may correlate the top face of Misaka group with high seismic velocity.