

Seismic imaging of deep structure beneath active volcanoes

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Seismological observations clearly show that flux melting in the mantle wedge is a deep source of magmatism in subduction zones and generated melts are transported to the continental crust through a mantle upwelling flow. However, physical processes of magmatism beneath deep crust are poorly understood. Here I review seismological structures (seismic velocity and attenuation, S-wave reflectors, and low-frequency earthquakes) beneath active volcanoes in Japan, focusing on deep magma chambers and possible pathways of magmatic fluids to the upper crustal levels.

Keywords: S-wave reflector, seismic tomography, low-frequency earthquakes