Discover of the intermediate crustal layer in the active island arc.

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From results of deep seismic profiling conducted by Reseach Group for Explosion Seismology (RGES) in recent decade, we found crustal intermediate layers of which P-wave velocity is 6.4 km/s, beneath active island arc regions. We interpreted that the intermediate layer is composed from transient materials in which granitic materials changing into mafic by hydrothermal and magma processes.

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Characteristics of the intermediate crustal layer beneath active island arc of Japan

From results of deep seismic profiling conducted by Research Group for Explosion Seismology (RGES) in recent decade, we found crustal intermediate layers of which P-wave velocity is 6.4 km/s, beneath active island arc regions. The intermediate layers are lying in the depth range between 10 and 20 km, just beneath out side regions of the volcanic front of Hokkaido, Tohoku and Northern Kanto. A comparison the P-wave velocities with thermal distribution data which is compiled by Geological Survey of Japan, shows that the upper surface of the intermediate layer correspond to 500 degree which is almost same as top of the lower crustal layer. Beneath non-volcanic western Honshu, the intermediate layer was not found. We interpreted that the intermediate layer is composed from transient materials in which granitic materials changing into mafic by hydrothermal and magma processes.