

Dynamics in the CMB region: Implications to the core-mantle chemical coupling and existence of ULVZ

Takashi Nakagawa[1]

[1] Univ. of Tokyo/EPS

Seismological structures in the core-mantle boundary region have been revealed as D'' discontinuity that ranges from 50km to 300km thickness above the CMB and Ultra Low Velocity Zone (ULVZ) that exists around 5 to 40km thickness above the CMB. For the D'' discontinuity, it has been clarified with using post-perovskite phase transition for fast region and basaltic pools for slow region by numerical mantle convection models. However, for the ULVZ, seismological models suggest that that region would be partially melted, it has not been realized by using the numerical mantle convection models. In this study, two-dimensional thermo-chemical whole mantle convection model is used to investigate the possibility of partial molten region in the CMB region.