

Relationship between physical properties assumed pyrolite composition in the upper mantle and seismic velocity structure

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In this study, we randomly determined physical properties of olivine, pyroxene and garnet, and used equation of state to calculate depth distributions of seismic velocities assuming that the upper mantle consists of pyrolite composition. Comparing the calculated seismic velocities with the iasp91 model, we investigated the relationship between physical properties in the upper mantle and seismic velocity structure. Since physical properties used in this study are appropriate for the upper mantle. we should examine effects of mantle geotherm and mineral composition in more detail to explain the seismic velocity structure.