

SIT004-P03

会場:コンベンションホール

時間:5月26日 14:00-16:30

## LLSVPの鉱物物理学的解釈

### Toward mineralogical interpretation of LLSVP: High-P,T elasticity of deep mantle materials

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Seismological studies have clarified that although most part of the lower mantle is fairly homogeneous, substantial heterogeneities exist at the bottom a few hundred km. They, in particular low-velocity anomalies observed beneath central-Pacific and Africa often called large low shear velocity provinces (LLSVP), attract great interest, since to clarify nature of them G is a key to understanding of chemical and dynamical properties of the Earth's mantle. Although they would be produced associated with temperature and/or compositional heterogeneities, details are still largely unknown.

Elastic property of possible mantle constituents is one of the most important properties to clarify this issue. So many studies on the high-P,T elasticity of minerals have been performed to date. However, those are still limited for some major phases in the lowermost mantle condition, such as Mg-perovskite, post-perovskite, periclase, and Ca-perovskite. We therefore performed new ab initio simulations on the high-P,T elasticity of some other phases, which are expected not to be abundant in the average silicate mantle but to be substantial when considering differentiated materials. We will discuss possible compositional heterogeneity by constructing mineralogical models of the deep mantle based on the obtained elasticity.

Research supported by JSPS Grant-in-Aid for Scientific Research Grants 20001005 and 21740379 and the Ehime Univ G-COE program "Deep Earth Mineralogy".

Keywords: LLSVP, elasticity, first principles