Geodynamics Seminar

第367回ジオダイナミクスセミナー

Making planet from chondrite

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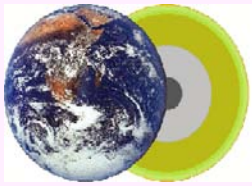
主催：愛媛大学地球深部ダイナミクス研究センター
日時：10/18（金）午後 4時30分～
場所：総合研究棟 I 4F 共通会議室



EHIME UNIVERSITY GRC GEODYNAMICS RESEARCH CENTER

Abstract

Chemical composition of silicate part of the Earth is still open question because of chemical uncertainty in the large-volume lower mantle. Mineralogical tests have been performed extensively to clarify the chemical composition of the lower mantle comparing densities and sound velocities of model rock composition to seismological models. However, they have not achieved a unique solution due to experimental errors and/or small number of observed physical properties to be constrained. In addition to such mineralogical tests, a forward modeling could be conducted as an opposite approach, assuming primordial materials and reproducing chemical differentiations in protoplanets. Chondrites are primitive meteorite and remain chemical information of early stage of the solar system, and thus are considered to be one of the strong candidates building planets. Recently, we performed melting experiments on natural chondrites up to 50 GPa and 2500 K, and determined a chemical composition of Mg-perovskite, which would be crystalized first under lower-mantle pressures from totally molten chondrite. Based on the results, we demonstrate one possible example of chemical differentiation and internal structure of a planet made from a primitive chondrite.

詳細は当センターホームページ： http://www.ehime-u.ac.jp/~grc/をご覧ください
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