Geodynamics Seminar

第342回ジオダイナミクスセミナー

Investigation of Al - bearing hydrous minerals in the uppermost lower mantle condition

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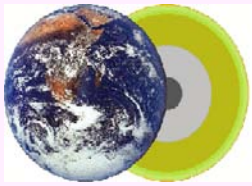
主催：愛媛大学地球深部ダイナミクス研究センター
日時：11/16（金）午後 4時30分～
場所：総合研究棟 4F 会議室



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Abstract

Subducting slabs are supplying water into the deep mantle, and some hydrous minerals may be present in the mantle transition zone and even in the uppermost lower mantle. The water storage capacities of mantle minerals are supposed to be significantly coupled with Al by a substitution with Mg^{2+}, Si^{4+} or Mg^{2+} + Si^{4+}, because Al^{3+} is the trivalent cation, and H^{+} is the monovalent cation. So in this study, I have examined the effect of Al for the water content and the stability of some hydrous phases in the system MgO-Al_2O_3-SiO_2-H_2O in the uppermost lower mantle condition. I have conducted experiments at 25 GPa and 1600 ℃ by MA8-type (KAWAI-type) high pressure apparatus. I succeeded to synthesize the Al-bearing hydrous minerals (Al-bearing phase B, Al-bearing super-hydrous phase B, Mg-Si bearing δ AlOOH), and found that the significant coupling of H and Al were occurred in these minerals. I will talk about the chemical compositions and the lattice parameters, and discuss about the difference between the pure chemical forms.

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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