Geodynamics Seminar

第344回ジオダイナミクスセミナー

In situ X-ray diffraction analysis of the experimental dehydration of chlorite at high pressure

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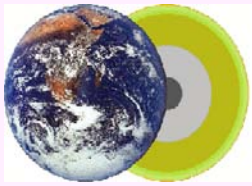
主催：愛媛大学地球深部ダイナミクス研究センター
日時：11/30（金）午後 4時30分～
場所：総合研究棟 4F 会議室



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Abstract

Some hydrous minerals are expected to exist in the subducting slab, and they dehydrate at their certain pressure and temperature. Thus, the presences of hydrous minerals influence the water transportation into the deep Earth, and the dehydrations affect magma activities. Serpentine ((Mg,Fe)3Si2O5(OH)4) is major hydrous mineral in subducting slab, and chlorite ((Mg,Fe,Al)6(Si,Al)4O10(OH)8) should be also important hydrous mineral in the subducted slab because Al is included in slab materials. In this study, the dehydration reactions of chlorite have been studied by time-resolved X-ray diffraction analysis under high pressure and temperature using MAX80, PF-AR, KEK. Dehydration boundaries of chlorite were determined at 3 to 8 GPa, which have negative P/T slope at 5 to 8 GPa. Chlorite was stable at ~ 800℃ below 4 GPa. Chlorite dehydration has completed within 1 hour in the conditions just across the dehydration boundary. Pressure range of dehydration of chlorite is narrower than that of serpentine, which means that the dehydration depth of chlorite does not depend on temperature profile of slab so much compared to the case of serpentine. More detail result will be reported.

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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