Geodynamics Seminar

第355回ジオダイナミクスセミナー

Application of HIME-dia for various high-pressure experiments

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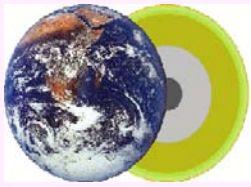
主催：愛媛大学地球深部ダイナミクス研究センター
日時：4/26（金）午後 4時30分～
場所：総合研究棟 4F 会議室



EHIME UNIVERSITY GRC GEODYNAMICS RESEARCH CENTER

Abstract

Nano-polycrystalline diamond named “HIME-dia” is a new material invented at GRC. Because of its unique properties such as extreme hardness and isotropic mechanical property, it has been expected that this material have high potential for applications in various high-pressure experiments, although not so many of them have been realized yet. In this talk, I am going to describe some of the examples of such trials.

Extension of the pressure range in recent diamond anvil experiment has been mainly achieved by the reduction of culet size. In order to achieve pressures above 300 GPa, diamond anvil with a cullet size around 30 micron has been used. Further reduction of the culet size is difficult by the existing polishing technique and we have used FIB (Focused Ion Beam) technique to make micro-size anvils with a cullet size of only 3 microns. We are trying to fabricate such small anvils and planning to make in-situ X-ray observation at SPring-8 using 1 micron diameter beam.

Another examples are opposed anvils with large sample volume for neutron experiments and radial diffraction anvils for low energy X-ray spectroscopy. The details of such anvils will be described at the seminar.

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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