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Earth science based on high-pressure and high-temperature neutron experiments at J-PARC

Takehiko Yagi[1]; Takaya Nagai[2]; Toru Inoue[3]; yoshinori katayama[4]; Toshiaki Iitaka[5]

[1] Inst. Solid State Phys, Univ. Tokyo; [2] Dept., Natural History Sci., Faculty of Sci., Hokkaido Univ.; [3] GRC, Ehime Univ.; [4] JAEA QuBS; [5] RIKEN, ASI

yagi@issp.u-tokyo.ac.jp

A new five year project entitled Earth Science Based on the High Pressure and Temperature Neutron Experiments has started last year as one of the Grant-in-Aid for Scientific Research on Innovative Areas of MEXT. In this project, the first step is to design and construct a new beam line dedicated for high-pressure neutron experiments at J-PARC, which is a new pulsed-neutron source constructed at Tokai, Ibaraki. Then we are going to construct a large volume high-pressure and high-temperature apparatus which is capable to about 15 GPa and 2000K. Using these systems, we are going to study the Earth's deep materials and clarify the behavior of water and hydrogen in these materials. The outline of the entire project will be presented.