

Abstract Submitted
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Reduction of γ -ray background using Compton camera Y. GONO, RIKEN, Japan, A. ODAHARA, Nishinippon Inst. of Tech., Japan, S. MOTOMURA, RIKEN, Japan, Y. ISOZUMI, Kyoto Univ., Japan, T. KIKEGAWA, KEK-PF, Japan, Y. MOTIZUKI, RIKEN, Japan, T. FUKUCHI, Rikkyo Univ., Japan, Y. WAKABAYASHI, Kyushu Univ., CNS Univ. of Tokyo, Japan — Development of the method to reduce the background γ -rays was carried out by using the Compton camera. Compton camera can make the image of the distribution of the γ -ray source. A change of a decay constant of ^{40}K under high pressure is studied with interests in the fields of nuclear physics, nuclear astrophysics and earth science. As much amount of ^{40}K chemical compound is included in the earth, the γ -ray of 1461 keV is easily observed as a natural background. It is crucial to reduce the natural background γ -rays in this experiment. RIKEN group developed the Compton camera which is called to be GREI (Gamma-Ray Emission Imaging). GREI consists of two double sided strip Ge detectors. By selecting events that the only γ -rays are emitted from the source position, it was found that the background γ -rays could be reduced about 94 %. This effect corresponds to that by a shield of the 4.7 cm thick lead bricks.

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