

Abstract Submitted
for the HAW09 Meeting of
The American Physical Society

Gamow-Teller transition strengths in the intermediate nucleus of the ^{116}Cd double- β decay by the $^{116}\text{Cd}(p,n)$ and $^{116}\text{Sn}(n,p)$ reactions at 300 MeV MASAKI SASANO, HIDEYUKI SAKAI, KENTARO YAKO, KENJIRO MIKI, SHUMPEI NOJI, TOMOTSUGU WAKASA, MASANORI DOZONO, KUNIHIRO FUJITA, MARK GREENFIELD, KICHIJI HATANAKA, TAKAHIRO KAWABATA, HIRONORI KUBOKI, YUKIE MAEDA, HIROYUKI OKAMURA, YASUHIRO SAKEMI, KIMIKO SEKIGUCHI, YOHEI SHIMIZU, YUJI TAMESHIGE, ATSUSHI TAMII, TOMOHIRO UESAKA, YOSHIKO SASAMOTO, KEISUKE ITOH, KAZUO MUTO, RIKEN, Nishina Center — Gamow-Teller (GT) transition strengths in the intermediate nucleus of the ^{116}Cd double- β ($\beta\beta$) decay, namely ^{116}In have been studied by measuring the double differential cross sections for the $^{116}\text{Cd}(p,n)$ and $^{116}\text{Sn}(n,p)$ reactions at 300 MeV over a wide excitation-energy region including GT giant resonance (GTGR). A large amount of the strengths in the β^+ direction has been newly found in the GTGR region ($E_x = 5$ to 20 MeV), which may indicate that a large part of the nuclear matrix element of the two-neutrino $\beta\beta$ decay comes from this region as well as the cancellation due to phase.

Masaki Sasano
RIKEN, Nishina Center

Date submitted: 06 Jul 2009

Electronic form version 1.4