RCNP EXPERIMENT E160

PROPOSAL FOR EXPERIMENT AT RCNP

Study for decay mode of the 1^+ states in ^{176}Lu after solar neutrino absorption via ^{176}Yb(^{3}He,tγ)^{176}Lu high resolution coincidence measurement

Aug 28, 2000

Spokesperson: K. Hara, Research Center for Nuclear Physics, Osaka University, Mihogaoka 10-1, Ibaraki, Osaka 567, Japan

M. Fujiwara, Research Center for Nuclear Physics, Osaka University, Mihogaoka 10-1, Ibaraki, Osaka 567, Japan

with: H. Akimune, Department of Physics, Konan University Okamoto 8-9-1, Higashinada, Kobe 658-8501, Japan
M. Fujimura, Research Center for Nuclear Physics, Osaka University, Mihogaoka 10-1, Suita 567, Japan
M. Fujiwara, Research Center for Nuclear Physics, Osaka University, Mihogaoka 10-1, Suita 567, Japan
C.D. Goodman, Indiana University Cyclotron Facility, Bloomington, Indiana, USA
K. Hara, Research Center for Nuclear Physics, Osaka University, Mihogaoka 10-1, Suita 567, Japan
M.N. Harakeh, Kernfysisch Versneller Instituut, Zernikelaan 25, 9747 AA Groningen, The Netherlands
T. Ishikawa, Department of Physics, Kyoto University, Kyoto 606, Japan
J. Jänecke, Department of Physics, University of Michigan, Ann Arbor, MI 48109-1120, U.S.A.
J. Kamiya, Research Center for Nuclear Physics, Osaka University, Mihogaoka 10-1, Suita 567, Japan

T. Kawabata, Department of Physics, Kyoto University, Kyoto 606, Japan
R.S. Ragahavan, Bell Laboratories, Lucent Technologies, Murray Hill, New Jersey 07974, U.S.A.
M. Tanaka, Kobe Tokiwa Jr. College, Nagata 653, Japan
M. Uchida, Department of Physics, Kyoto University, Kyoto 606, Japan
K. Yamasaki, Department of Physics, Konan University Okamoto 8-9-1, Higashinada, Kobe 658-8501, Japan
H.P. Yoshida, Research Center for Nuclear Physics, Osaka University 10-1 Mihogaoka, Ibaraki, Osaka 567-0047
M. Yosoi, Research Center for Nuclear Physics, Osaka University 10-1 Mihogaoka, Ibaraki, Osaka 567-0047
R.G.T. Zegers, Advanced Science Research Center, JAERI, Tokai, Ibaraki, 319-1195Japan

Abstract:

The Gamow-Teller β_{-} strength from ^{176}Yb has been studied via the ^{176}Yb(^{3}He,t)^{176}Lu reaction at 450 MeV. The construction of the Yb-doped scintillator is in progress with world-wide scale with the collaboration of scientists in Japan, US, France, Italy, German and Russia. Detailed study of the γ-decay mode after the solar neutrino absorption is required for this purpose. A γ-coincidence measurement with $\Delta E{\sim}150$ keV is will be done to confirm the applicability of a coincidence technique with γ-rays following neutrino absorption.