

Abstract Submitted
for the HAW05 Meeting of
The American Physical Society

Gamma Spectroscopy of ^{13}B via Proton Transfer Reaction at 50 MeV/nucleon SHINSUKE OTA, Kyoto University, R337N COLLABORATION — We have investigated proton single particle states in ^{13}B via a proton transfer reaction on ^{12}Be at 50 MeV/nucleon. A candidate was found at the excitation energy of 4.8 MeV in ^{13}B whose spin and parity was deduced to be $1/2^+$ from a Distorted Wave Born Approximation (DWBA) analysis of the observed angular distribution of the differential cross sections. The experiment was performed in RIKEN Accelerator facility with RIKEN Projectile-fragment Separator (RIPS). A ^{12}Be beam bombarded a liquid helium target of 120 mg/cm²-thickness. Gamma rays from excited states on ^{13}B were detected with six Germanium detectors, a part of Gamma-Ray detector Array with Position and Energy sensitivity (GRAPE) located at upstream of the target. The incident and outgoing particles were identified event-by-event by measuring their velocities and energies. In this talk, we report the detail of experiment and data analysis, and discuss about the single-particle nature of the observed state.

Shinsuke Ota
Kyoto University

Date submitted: 25 May 2005

Electronic form version 1.4