Abstract Submitted
for the HAW05 Meeting of
The American Physical Society

Invariant-Mass Spectroscopy of ^{14}Be with a Carbon Target at 68.1 *A*MeV T. SUGIMOTO, T. NAKAMURA, M. MIURA, Y. KONDO, Tokyo Tech, N. FUKUDA, RIKEN, R301N COLLABORATION — We have studied the nuclear structure of ^{14}Be using nuclear-breakup reaction with a carbon target at 68.1 AMeV. In the neighboring beryllium isotope ^{12}Be, the disappearance of $N = 8$ magic number was suggested, which was shown by observations of the low-lying first 2^+ and the intruder 1^- state. On the other hand, no excited state has been observed for ^{14}Be. It is thus interesting to study such low excited state in ^{14}Be, in discussing the change of shell structure and the effect of neutron halo. The experiment was performed at the RIKEN Accelerator Research Facility. The secondary ^{14}Be beam was produced and identified using RIPS beam line. The ^{14}Be was broken up into ^{12}Be and two neutrons by the carbon target. These decay particles were measured and identified using magnetic spectrometer and neutron detectors. The relative-energy spectrum of ^{12}Be + 2n system was extracted using invariant-mass method. In the spectrum we found a narrow peak in the unbound region of ^{14}Be. We also show the angular distribution of this transition in order to determine the spin/parity of the state.

Takashi Sugimoto
Tokyo Tech

Date submitted: 18 Aug 2005 Electronic form version 1.4