Abstract Submitted
for the HAW05 Meeting of
The American Physical Society

^{16}C inelastic scattering studied with microscopic coupled-channels method MASAAKI TAKASHINA, RIKEN, YOSHIKO KANADA-EN'YO, YITP, Kyoto University, YUKINORI SAKURAGI, Osaka City University
— In order to test the ^{16}C internal wave function, we perform microscopic coupled-channels (MCC) calculations of the ^{16}C($0_1^+ \rightarrow 2_1^+$) inelastic scattering by ^{208}Pb target at E/A=52.7 MeV using the antisymmetrized molecular dynamics (AMD) wave functions of ^{16}C, and compare the calculated differential cross sections with the measured ones. The MCC calculations with AMD wave functions reproduce the experimental data fairly well, although they slightly underestimate the magnitude of the cross sections. The absolute magnitude of calculated differential cross sections is found to be sensitive to the neutron excitation strength. We prove that the MCC method is a useful tool to connect the inelastic scattering data with the internal wave functions.

Masaaki Takashina
RIKEN

Date submitted: 23 May 2005 Electronic form version 1.4