

Abstract Submitted
for the HAW14 Meeting of
The American Physical Society

Shell-model description of E1 excitation¹ NORITAKA SHIMIZU, Center for Nuclear Study, the University of Tokyo, YUTAKA UTSUNO, Japan Atomic Energy Agency, TOMOAKI TOGASHI, Center for Nuclear Study, the University of Tokyo, TAKAHARU OTSUKA, Department of Physics, the University of Tokyo, MICHIO HONMA, Aizu University — We discuss a microscopic description of E1 excitations based on shell-model calculations. We performed large-scale shell-model calculations for Ca isotopes with Lanczos-strength-function method and *sd-pf-sdg* model space allowing up to $3\hbar\omega$ excitation and obtained their photoabsorption cross sections. It gives a very good description of giant dipole and low-lying pygmy resonances rather independently of smoothing parameter. We also present the feasibility of the Monte Carlo shell model (MCSM) to study the E1 excitation in order to treat larger model space. By using the MCSM we discuss some results about light nuclei.

¹This study is supported by HPCI strategic program field 5 and KAKENHI grand 25870168.

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Date submitted: 30 Jun 2014

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