Abstract Submitted
for the APR13 Meeting of
The American Physical Society

***Ab initio* many-body calculations of the ^{4}He photo-absorption cross section**[1] MICAH SCHUSTER, San Diego State University, SOFIA QUAGLIONI, Lawrence Livermore National Laboratory, CALVIN JOHNSON, San Diego State University, ERIC JURGENSON, Lawrence Livermore National Laboratory, PETR NAVRÁTIL, TRIUMF — Working within the no-core shell model approach with a similarity renormalization group (SRG) evolved two- and three-nucleon (NN+NNN) Hamiltonian, we compute the dipole strength function of ^{4}He, using the Lorentz integral transform (LIT) method to obtain the continuum response. We then compute the total photo-absorption cross section of ^{4}He. We pay particular attention to the convergence of the total strength and of the LIT of the dipole response as we increase the size of the harmonic oscillator basis.

[1]Computing support for this work came from the LLNL institutional Computing Grand Challenge program. Support from the U. S. DOE/SC/NP (Work Proposal No. SCW1158 and grant DE-FG02-96ER40985) is acknowledged.

Micah Schuster
San Diego State University

Date submitted: 14 Jan 2013 Electronic form version 1.4