



Poster session 2 – Tuesday 5 July

P2.045 Low energy atomic response in neutrino scattering

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Detector response to neutrino scattering is an important subject that interfaces experimental data and underlying neutrino physics. With the advent of low-threshold detectors at sub-keV energies, it is possible to better constrain neutrino magnetic moments and millicharges, observe neutrino coherent scattering, and search for light dark matter candidates. As these low energy scales overlap with the ones of atomic physics, clear understanding of detector response inevitably involves many-body physics. This presentation briefly introduces the multiconfiguration relativistic random phase approximation (MCRRPA), an ab initio many-body technique, we adopted and summarize our recent efforts of applying the method to neutrino-germanium scattering in particular. The prospects of extending the method to other detector species such as xenon, argon, etc. and to the processes of dark matter scattering will also be mentioned.