

Abstract Submitted
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Neutrino nuclear responses for double beta decays and astro neutrinos by charge exchange reactions HIROYASU EJIRI, RCNP, Osaka University — Neutrino nuclear responses are crucial for neutrino studies in nuclei. Charge exchange reactions (CER) are shown to be used to study charged current neutrino nuclear responses associated with double beta decays(DBD)and astro neutrino interactions [1,2]. CERs to be used are high energy-resolution (He3,t) reactions at RCNP, photonuclear reactions via IAR at NewSUBARU [3] and muon capture reactions at MUSIC RCNP and MLF J-PARC. The Gamow Teller (GT) strengths studied by CERs reproduce the observed 2 neutrino DBD matrix elements [2]. The GT and spin dipole (SD) matrix elements are found to be reduced much due to the nucleon spin isospin correlations and the non-nucleonic (delta isobar) nuclear medium effects. Impacts of the reductions on the DBD matrix elements and astro neutrino interactions are discussed.

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