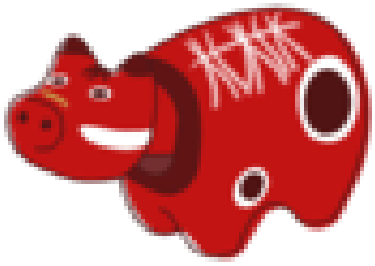

Contribution ID: **36** Type: **not specified**

Delta-isobar resonance effects on beta and double beta decays in medium heavy nuclei

Thursday, 6 March 2025 12:00 (20 minutes)

Astro-ν interactions are studied by inverse β decays and ν-properties beynod the standard model are studied by neutrinoless double beta decays ($0\nu\beta\beta$). The β and $\beta\beta$ nuclear matrix elements (NMES) consist mainly of the axial-vector spin (σ) isospin(τ) components, The delta-isobar (Δ) resonance excited by the quark $\tau\sigma$ excitation of nucleon in the nucleus is shown to quench the axial-vector components of NMEs. The effects are evaluated by using experimental energies and the strengths of the Gamow-Teller (nuclear $\tau\sigma$) resonsnces. The quenching effect is incorpolated by the effective axial-vector coupling around $g_A^{eff} \approx 0.7 \pm 0.1$ in units of g_A for a free nucleon. Impact of the Δ resonsnce on neutrino studues in nuclei is discussed.
H. Ejiri et al., Phys. Rep. 797, 1 2019, Phys. Rev. C105, L022501, C108, L11302 2023.

Type of contribution

Are you a student or postdoc?

no

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