Turkish Journal of Physics

Turkish Journal

of

Physics

Nuclear Matrix Elements of Double Beta Decay in Deformed Nuclei

Cevat SELAM, Atalay KÜÇÜKBURSA, Hasan BİRCAN
Dumlupınar University, Faculty of Arts and Sciences,
Department of Physics, Kütahya-TURKEY
e-mail: atalay@dumlupinar.edu.tr
Hasan Ali AYGÖR, Tahsin BABACAN, İsmail MARAŞ
Celal Bayar University, Faculty of Arts and Sciences,
Department of Physics, Manisa-TURKEY
Ali KÖKÇE
Süleyman Demirel University, Faculty of Arts and Sciences,
Department of Physics, Isparta-TURKEY

Keywords
Authors

phys@tubitak.gov.tr

Scientific Journals Home Page

Abstract: Nuclear matrix elements (M_{GT}) for two-neutrino double beta transitions of selected nuclei were calculated via a QRPA approach by considering the charge-exchange spin-spin interactions in the particle-hole channel among nucleons. Calculations were performed for both spherical and deformed cases of nuclei. As a result of these calculations, it has been seen that, although the value of the nuclear matrix elements in deformation case are 2-4 times smaller when compared with that of the spherical case, it is still 2-8 times greater than the experimental values.

Key Words: Double beta decay

Turk. J. Phys., **27**, (2003), 187-193.
Full text: pdf
Other articles published in the same issue: Turk. J. Phys.,vol.27,iss.3.