

CROSS SECTION OF ELECTRON ANTINEUTRINO INTERACTION WITH 40AR AND 84KR AND ITS RELEVANCE TO GEONEUTRINO DETECTION

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Abstract	Neutrino can carry information from places that cannot be reached by the usual detection mechanism because it has a very weak interaction with matter. This can be utilized to study the heat flow process inside the earth by using information carried by geoneutrino (electron antineutrino). In this sense, it is important to know the characteristics of neutrino interaction with materials. In this study, the cross-section calculation of the electron antineutrino interaction with Ar-40 and Kr-84 was carried out using computational methods with the help of GENIE software. In the energy range of 0-10 MeV, the dominant interaction between the two materials is the interaction of QES NC and MEC types with an energy threshold of 5,09 MeV. Both Ar-40 and Kr-84 cannot be used as a scintillator material for geoneutrino detection because in the energy range 0-4,4 MeV the cross-sectional value of the CC interaction σ_{CC} is 0.
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Author	AKMAL FERDIYAN, S.Si, M.Sc