

SELF-CONSISTENT CALCULATIONS OF SOLAR CNO NEUTRINO CAPTURE-RATES FOR ^{115}In .

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The first direct detection of the neutrinos from carbon-nitrogen-oxygen (CNO) fusion cycle in the Sun has been announced recently by the BOREXINO Collaboration [1]. An estimate of possible "CNO-like" events induced by geo-antineutrino from ^{40}K decay in the Hydride model of the Earth has been done in [2]. This has revived attention to the additional experimental prospects given by improved ^{115}In detector system (LENS Project [3]).

In the report, the CNO neutrino capture rates for ^{115}In are calculated within a revised self-consistent approach to the charge-exchange excitations of odd-A nuclei [4]. It includes new version of the Fayans functional DF3-a fitted to the spin-orbit splitting data for 105 nuclei [5]. The β -decay strength function is calculated within continuum Quasiparticle Random Phase (pnQRPA) approximation including the Gamow-Teller and first-forbidden transitions [6].

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