

${}^1_0\text{n}$ β^- decay (613.9 s)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 106, 601 (2005)	31-Oct-2005

Parent: ${}^1_0\text{n}$: $E=0.0$; $J^\pi=1/2^+$; $T_{1/2}=613.9$ s 6; $Q(\beta^-)=782.347$ I; $\% \beta^-$ decay=100.0

${}^1_0\text{n}$ - $T_{1/2}$: 613.9 s 6 (from evaluation of 2004Ei01). References for measurements are listed under 'Adopted Levels' for neutron.

${}^1_0\text{n}$ - $Q(\beta^-)$: From 2003Au03. From adopted (by 2004Ei01) masses of neutron, proton and electron and conversion factor from a.m.u. scale to keV as adopted by 2004Ei01, $Q^- = 782.33279$ keV 7.

Parameters for free neutron decay (see complete details in 2004Ei01):

$g_A/g_V = -1.2695$ 29 (2004Ei01).

β Asymmetry parameter (neutron spin, electron momentum) $A = -0.1173$ 13 (2004Ei01). In 2005Se01, -0.1189 7 is favored.

Antineutrino Asymmetry parameter (neutron spin, antineutrino momentum) $B = 0.983$ 4 (2004Ei01).

Electron-antineutrino angular-correlation coefficient $a = -0.103$ 4 (2004Ei01).

Triple correlation coefficient (component of neutron spin perpendicular to the decay plane in β decay) $D = -0.0006$ 10 (2004Ei01).

Phase of g_A relative to g_V , $\phi_{AV} = 180.08^\circ$ 10 (2004Ei01).

Measurements:

Limit on T (time-reversal) violation in free neutron decay: 2005Bo35, 2004So03 (polarized neutron), 2003So25 (measured electron and proton energies, electron-proton coin), 2000Jo03 (polarized neutron).

Beta asymmetry parameter: 2002Ab14, 2000Re02, 1997Li01, 1997Ab32, 1995Sc20, 1991Er04, 1990Er10, 1989Do17, 1988KI01, 1986Bo04, 1984Bo28, 1979Er08, 1975Kr18, 1971Er10, 1969Ch05.

g_A/g_V from measurement of Both P-odd correlations: 2001Mo41.

Antineutrino asymmetry parameter: 1998Se11, 1995Ku30, 1994Ku46, 1970Er10, 1970Er07, 1970Ch08, 1969Ch05, 1960Cl06.

Electron-antineutrino angular-correlation coefficient: 2005By03, 2004So03, 2002By02, 2000Da01, 1978St30, 1975Do19, 1967Gr32.

Triple correlation coefficient: 1989Vo12, 1984Bo29, 1978Er06, 1976St24, 1974St09, 1974Er09, 1970Er08, 1960Cl06.

Proton-electron correlations from polarized neutron decay: 2000Jo03, 2000Li42.

Radiative decay mode, upper limit: 2005By04, 2002Be79.

Neutrino-antineutrino oscillation time, lower limit: 2002Ch48.

 ${}^1_1\text{H}$ Levels

<u>E(level)</u>	<u>J^π</u>
0.0	$1/2^+$

 β^- radiations

<u>E(decay)</u>	<u>E(level)</u>	<u>$I\beta^{-\dagger}$</u>	<u>Log ft</u>	<u>Comments</u>
(782.3470 10)	0.0	100	3.0170 5	av $E\beta = 301.37$

\dagger Absolute intensity per 100 decays.