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EXPERIMENTAL DATA ON P-NONCONSERVATION IN NUCLEAR FORCES (P-ODD EFFECTS IN COMPOUND NUCLEI)*

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The mixing parameter F of nuclear states with different parity is defined in accord with[1].

1. ASYMMETRY OF γ QUANTUM EMISSION IN CAPTURE OF POLARIZED NEUTRONS

Reaction	Asymmetry coefficient ($\times 10^4$) $a = 2FR$	Enhancement factor (theory) $2R$	$F = \frac{a_{exp}}{2R}$
$Cd^{113}(n,\gamma)Cd^{114}$, γ transition $1^+ \to 0^+$. Weak (n, p) interaction according to [1] yields for Cd^{113} $F \sim 5 \times 10^{-7}$	-3.7 ± 1.0 [2] 0.2 ± 1.2 [3]*) -2.5 ± 2.2 [4] -3.8 ± 1.2 [5] -3.7 ± 0.7 [5]**)	$\sim 10^3$	$4\cdot10^{-7}$ [2,5]
$H^2(n,\gamma)H^3$	0.28 ± 1.55 [3]	~ 100	$<2\cdot10^{-6}$

*These results were criticized.

**Summary results of [2] and [5].

2. CIRCULAR POLARIZATION OF γ QUANTA EMITTED BY UNPOLARIZED NUCLEI

Nucleus	$P = 2FR$	$2R_{theor}$	$F = \frac{P_{exp}}{2R}$
Ta^{181}	$-(6\pm1)\cdot10^{-6}$ [6]	$-(15-150)$	$(0.4-4)\cdot10^{-7}$
Lu^{175}	$(4\pm1)\cdot10^{-5}$ [7]	50—200	$(2-8)\cdot10^{-7}$

Weak np interaction for nuclei with A ~ 150 yields, according to[1], $F \sim (5-8) \times 10^{-7}$.

3. INVESTIGATION OF PARITY-FORBIDDEN α TRANSITIONS

In the experiment one determines the relative width of the α decay $\Gamma_\alpha/\Gamma_\beta$ (where Γ_γ is the total width of the investigated level):

$$|F|^2 = \frac{\tilde{\Gamma}_\alpha}{\Gamma_\gamma} \Big/ \frac{\Gamma_{\alpha\ calc}}{\Gamma_{\gamma\ calc}},$$

$\Gamma_{\alpha\ calc}$ is determined for the impurity state ($J^{-\pi}$) and $\Gamma_{\gamma\ calc}$ for the ground state (J^{π}).

α-transition	$\tilde{\Gamma}_\alpha/\Gamma_\gamma$	$\frac{\Gamma_{\alpha\ calc}}{\Gamma_{\gamma\ calc}}$	$\lvert F^2\rvert$
α-transition $2^-(O^{16}) \to \to \to O(C^{12})$	$2\cdot10^{-6}$ [8] $2.4\cdot10^{-5}$ [9] $1.4\cdot10^{-6}$ [10]	10^6 $3\cdot10^6$ 10^5-10^6	$2\cdot10^{-12}$ $0.7\cdot10^{-11}$ $(14-1.4)\cdot10^{-12}$

According to[1], weak np interaction yields $|F|^2 \sim 1 \times 10^{-13}$ for O^{16}.

*Data whose accuracy is much worse than that of the others are omitted from each group.

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