Erratum: Negative-parity high-spin states and a possible magnetic rotation band in $^{135}\text{Pr}_{76}$ [Phys. Rev. C 92, 054325 (2015)]

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In the original publication, we had reported the negative parity states of a possible magnetic rotation (MR) band in ^{135}Pr . The value for polarization asymmetry for the 813.3 keV γ -ray transition therein was reported as $-0.2(0.08)$. However, the directional correlations of oriented states (DCO) ratio of this γ -ray transition was determined to be $0.22(2)$, indicating it to be of mixed multipolarity. During subsequent analysis and compilation of data, it appeared that such a large value for the polarization asymmetry would be unrealistic, since it would imply, with the given inherent geometrical asymmetry (a), around 40% difference between the number of parallel (N_{par}) and perpendicular (N_{per}) scattering observed experimentally. Further, the reported angular correlation was indicative of mixed transition. Hence, there was a need to reexamine this observation.

It is pertinent to mention that our previous analysis was based on an energy independent geometric asymmetry $a = 0.93(6)$. This was extracted from fitting the polarization asymmetry ($a = N_{\text{par}}/N_{\text{per}}$) from an unpolarized radioactive source with the equation $a_0 + a_1 E_\gamma$, E_γ is in keV. The coefficient $a_1 = 6.38 \times 10^{-5}$ was neglected in the subsequent calculation owing to its insignificance.

In the present reexamination of the data, we have included the energy dependence of geometric asymmetry (a), thus evaluating it for individual energies again, and have determined the polarization asymmetry of these γ -ray transitions using the respective asymmetry (a). The results are recorded in Table I of this Erratum and do establish the mixed electromagnetic character of the 747.5 and 813.3 keV γ -ray transitions.

TABLE I. Level excitation energy E_i in keV, final and initial spin and parity of levels J_i^π and J_f^π , γ -ray energy E_γ in keV, polarization asymmetry (Δ) ratios and assigned multipolarity for γ -ray transitions in ^{135}Pr .

E_i	$J_i^\pi \rightarrow J_f^\pi$	E_γ	Δ_{Old}^a	Δ_{New}^b	Mult.
5028.6	$35/2^- \rightarrow 33/2^-$	325.1	$-0.12(6)$	$-0.01(3)$	$M1$
3863.0	$29/2^- \rightarrow 27/2^-$	332.9	$-0.03(8)$	$-0.01(3)$	$M1$
730.9	$15/2^- \rightarrow 11/2^-$	372.8	$0.08(4)$	$0.11(1)$	$E2$
4704.1	$33/2^- \rightarrow 31/2^-$	410.8	$-0.16(10)$	$-0.11(3)$	$M1$
5452.6	$37/2^- \rightarrow 35/2^-$	424.0	$-0.15(9)$	$-0.05(6)$	$M1$
4292.7	$31/2^- \rightarrow 29/2^-$	429.7	$-0.05(6)$	$-0.04(4)$	$M1$
5951.1	$39/2^- \rightarrow 37/2^-$	498.5	$-0.14(7)$	$-0.13(8)$	$M1$
951.8	$13/2^- \rightarrow 11/2^-$	593.7	$-0.13(12)$	$-0.02(3)$	$M1$
1391.1	$19/2^- \rightarrow 15/2^-$	660.2	$0.06(3)$	$0.09(1)$	$E2$
2617.3	$23/2^- \rightarrow 19/2^-$	688.8	$0.07(6)$	$0.04(4)$	$E2$
1478.2	$17/2^- \rightarrow 15/2^-$	747.5	$-0.05(3)$	$0.03(3)$	$M1 + E2$
3530.0	$27/2^- \rightarrow 23/2^-$	776.2	$0.15(12)$	$0.07(8)$	$E2$
2204.4	$21/2^- \rightarrow 19/2^-$	813.3	$-0.20(8)$	$0.04(3)$	$M1 + E2$
5998.0	$39/2^- \rightarrow 35/2^-$	834.0	$0.24(14)$	$0.13(4)$	$E2$
2245.1	$23/2^- \rightarrow 19/2^-$	854.0	$0.09(6)$	$0.13(1)$	$E2$
3487.9	$27/2^- \rightarrow 23/2^-$	870.8	$0.12(10)$	$0.10(5)$	$E2$
3245.0	$27/2^- \rightarrow 23/2^-$	999.9	$0.12(6)$	$0.08(3)$	$E2$
4320.2	$31/2^- \rightarrow 27/2^-$	1075.2	$0.22(12)$	$0.08(5)$	$E2$
1928.4	$19/2^- \rightarrow 15/2^-$	1197.4	$0.12(11)$	$0.05(4)$	$E2$
2617.3	$23/2^- \rightarrow 19/2^-$	1225.9	$0.11(7)$	$0.09(5)$	$E2$
2754.8	$23/2^- \rightarrow 19/2^-$	1363.7	$0.09(5)$	$0.08(5)$	$E2$

^a Δ_{Old} : Earlier reported polarization asymmetry in the original publication.

^b Δ_{New} : Polarization asymmetry using the correction factor $a(E_\gamma) = 1.01229 + (1.17083 \times 10^{-6})E_\gamma$ (with E_γ in keV), deduced from the data from three 90 degree clover detectors.

For completeness, the polarization asymmetry of all the relevant transitions have been reevaluated and the results are found to be consistent with the recent measurement on the same nucleus [1]. The new findings do not affect the earlier results and interpretations therefore.

- [1] J. T. Matta *et al.*, [Phys. Rev. Lett. **114**, 082501 \(2015\)](#).