In considering the $\Delta$ quartet electromagnetic properties in $SU(2)$ QCD and $SU(4|2)$ partially quenched QCD (PQQCD) (in Appendix B), additional local counterterms that involve the supertrace of the charge matrix were omitted.$^1$ Using the general form of the charge matrix equation (B1), we have an additional dimension-5 magnetic moment operator in partially quenched chiral perturbation theory (PQ/$\chi$PT)

$$\mathcal{L} = \mu \frac{3ie}{M_B} (\bar{T}^{\mu} T^{\nu}) F_{\mu \nu} \text{str}(Q^{SU(2)}),$$  \hspace{1cm} (1)

that matches onto the $\chi$PT operator

$$\mathcal{L} = \mu \frac{3ie}{M_B} \bar{T}^{\mu} T^{\nu} F_{\mu \nu} \text{str}(Q^{SU(2)}).$$  \hspace{1cm} (2)

There is an additional dimension-6 electric quadrupole operator in PQ/$\chi$PT

$$\mathcal{L} = -\xi \frac{3e}{\Lambda^2} (\bar{T}^{\mu} T^{\nu}) u^a \partial_{\mu} F_{\nu a} \text{str}(Q^{SU(2)}),$$  \hspace{1cm} (3)

that matches onto the $\chi$PT operator

$$\mathcal{L} = -\xi \frac{3e}{\Lambda^2} \bar{T}^{\mu} T^{\nu} u^a \partial_{\mu} F_{\nu a} \text{str}(Q^{SU(2)}).$$  \hspace{1cm} (4)

Finally in PQ/$\chi$PT there is an additional dimension-6 charge radius operator

$$\mathcal{L} = -\xi \frac{3e}{\Lambda^2} \bar{T}^{\mu} T^{\nu} u^a \partial_{\mu} F_{\nu a} \text{str}(Q^{SU(2)}).$$  \hspace{1cm} (5)

that matches onto

$$\mathcal{L} = c_\gamma \frac{3e}{\Lambda^2} \bar{T}^{\mu} T^{\nu} u^a \partial_{\mu} F_{\nu a} \text{str}(Q^{SU(2)}).$$  \hspace{1cm} (6)

in $\chi$PT. Notice the PQ/$\chi$PT low-energy constants $\mu_\gamma$, $Q_\gamma$, and $c_\gamma$ are identical at tree level to those in $\chi$PT.

Inclusion of the above operators leads to tree-level contributions to the $\Delta$ quartet electromagnetic properties. Since these contributions are proportional to the supertrace of the charge matrix, the corrections are identical for each member of the quartet. The charge radius should include an additive correction

$$\delta r_E = \frac{2\mu_\gamma}{M_B^2} + \frac{\xi_\gamma}{\Lambda^2} + 6c_\gamma,$$  \hspace{1cm} (7)

while for the magnetic moment

$$\delta \mu = 2\mu_\gamma,$$  \hspace{1cm} (8)

and for the electric quadrupole moment

$$\delta \xi = -2\mu_\gamma - \xi_\gamma \frac{M_B^2}{\Lambda^2}.$$  \hspace{1cm} (9)

Notice that these corrections only affect the counterterm structure of the results. Moreover, they only apply to the case of $SU(2)$ flavor considered in Appendix B.

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$^1$In $SU(2|2)$ QQCD, the charge matrix is supertraceless.