Tensor term (eq. HE X 13)

$$E_5 = 4\sqrt{\frac{15}{\pi}} \sum_{\substack{n_2 l_2 j_2 t_2 \\ n_2' l_2' j_2}} a^{t_2}_{n_2 l_2 j_2} a^{t_2}_{n_2' l_2' j_2} \sum_{L L' \delta} (-i)^{L-L'} (-)^{\delta} \left[\hat{l}_1 \hat{l}_2 \hat{j}_2 \hat{\delta} \hat{L} \hat{L}'\right]^2$$

$$\begin{Bmatrix} L & L' & 2 \\ 1 & 1 & \delta \end{Bmatrix} \begin{pmatrix} L' & L & 2 \\ 0 & 0 & 0 \end{pmatrix} \begin{Bmatrix} l_1 & \frac{1}{2} & j_1 \\ l_2 & \frac{1}{2} & j_2 \\ L & 1 & \delta \end{Bmatrix} \begin{pmatrix} l_1 & l_2 & L \\ 0 & 0 & 0 \end{pmatrix} \begin{Bmatrix} l_1 & \frac{1}{2} & j_1 \\ l_2 & \frac{1}{2} & j_2 \\ L' & 1 & \delta \end{Bmatrix} \begin{pmatrix} l_1 & l_2 & L' \\ 0 & 0 & 0 \end{pmatrix}$$

$$\int dr_1 r_1^2 h_{n_1 l_1}(r_1) h_{n_2 l_2}(r_1) \int dr_2 r_2^2 h_{n_1' l_1}(r_2) h_{n_2' l_2}(r_2) \int dq q^2 V_5(q) j_L(qr_1) j_{L'}(qr_2) \quad (14)$$

Coulomb term:

$$E_c = e^2 \sum_{\substack{n_2 l_2 j_2 \\ n_2'}} a^{t_2}_{n_2 l_2 j_2} a^{t_2}_{n_2' l_2 j_2} \sum_{L} (2j_2+1) \begin{pmatrix} j_2 & L & j_1 \\ \frac{1}{2} & 0 & -\frac{1}{2} \end{pmatrix}^2 \delta(l_1+l_2+L)$$

$$\int dr_1 r_1^2 h_{n_1 l_1}(r_1) h_{n_2 l_2}(r_1) \left[\frac{1}{r_1^{L+1}} \int_0^{r_1} dr_2 r_2^{L+2} h_{n_1' l_1}(r_2) h_{n_2' l_2}(r_2) + r_1^L \int_{r_1}^{\infty} dr_2 \frac{1}{r_2^{L-1}} h_{n_2' l_2}(r_2) h_{n_1' l_1}(r_2) \right] \quad (15)$$

Isospin dependent terms*

D_3 - has the structure of D_1 with $2t_1 2t_2$ ($t_1 = \pm 1/2$, $t_2 = \pm 1/2$)

E_3, E_4 and E_6 have the structure of E_1, E_2 and E_5 respectively with $(2\delta_{t_1,-t_2} + \delta_{t_1,t_2})$.