$$C_{H\square} \to \hbar \left(-\frac{3}{128}\frac{1}{m_2^2} s_{4\gamma}^2 (g_1^2+g_2^2)^2 + \frac{1}{6} g_2^4 LF_{3,0}[m_2] + \frac{1}{4} g_2^4 LF_{4,-1}[m_2] - \frac{4}{15} g_2^4 LF_{5,-2}[m_2] +\right.$$
$$\frac{1}{216}\sum_p g_1^4 (4+9c_{2\gamma}^2) LF_{3,0}[m_{\tilde d}^p] - \frac{1}{144}\sum_p g_1^4 (5+6c_{2\gamma}^2) LF_{4,-1}[m_{\tilde d}^p] +$$
$$\frac{2}{135}\sum_p g_1^4 LF_{5,-2}[m_{\tilde d}^p] - \frac{1}{2} c_{2\gamma} g_1^2 c_\gamma^2 \overline{y_d}^{pr} y_d^{pr} LF_{3,0}[m_{\tilde d}^r] + \frac{1}{2} c_{2\gamma} g_1^2 c_\gamma^2 \overline{y_d}^{pr} y_d^{pr} LF_{4,-1}[m_{\tilde d}^r] +$$
$$\frac{1}{72}\sum_p g_1^4 (4+9c_{2\gamma}^2) LF_{3,0}[m_{\tilde e}^p] - \frac{1}{48}\sum_p g_1^4 (5+6c_{2\gamma}^2) LF_{4,-1}[m_{\tilde e}^p] + \frac{2}{45}\sum_p g_1^4 LF_{5,-2}[m_{\tilde e}^p] -$$
$$\frac{1}{2} c_{2\gamma} g_1^2 c_\gamma^2 \overline{y_e}^{pr} y_e^{pr} LF_{3,0}[m_{\tilde e}^r] + \frac{1}{2} c_{2\gamma} g_1^2 c_\gamma^2 \overline{y_e}^{pr} y_e^{pr} LF_{4,-1}[m_{\tilde e}^r] +$$
$$\frac{1}{144}\left(36 c_{2\gamma} c_\gamma^2 \overline{y_e}^{pr} y_e^{pr} (g_1^2+g_2^2) + \sum_p \left(g_1^4 (4+9c_{2\gamma}^2) + 3 g_2^4 (4-3c_{2\gamma}^2)\right)\right) LF_{3,0}[m_{\tilde l}^p] +$$
$$\left(-\frac{1}{4} c_{2\gamma} c_\gamma^2 \overline{y_e}^{pr} y_e^{pr} (g_1^2+g_2^2) - \frac{1}{96}\sum_p \left(g_1^4 (5+6c_{2\gamma}^2) + 3 g_2^4 (5-2c_{2\gamma}^2)\right)\right) LF_{4,-1}[m_{\tilde l}^p] +$$
$$\frac{1}{45}\sum_p (g_1^4+3g_2^4) LF_{5,-2}[m_{\tilde l}^p] + \left(-\frac{1}{4} c_{2\gamma} c_\gamma^2 \overline{y_d}^{pr} y_d^{pr} (g_1^2-3g_2^2) -\right.$$
$$\frac{1}{4} c_{2\gamma} s_\gamma^2 \overline{y_u}^{pr} y_u^{pr} (g_1^2+3g_2^2) + \frac{1}{432}\sum_p \left(g_1^4 (4+9c_{2\gamma}^2) + 27 g_2^4 (4-3c_{2\gamma}^2)\right)\Big)$$
$$LF_{3,0}[m_{\tilde q}^p] + \left(\frac{1}{4} c_{2\gamma}\left(c_\gamma^2 \overline{y_d}^{pr} y_d^{pr} (g_1^2-3g_2^2) + s_\gamma^2 \overline{y_u}^{pr} y_u^{pr} (g_1^2+3g_2^2)\right) -\right.$$
$$\frac{1}{288}\sum_p \left(g_1^4 (5+6c_{2\gamma}^2) + 27 g_2^4 (5-2c_{2\gamma}^2)\right)\Big) LF_{4,-1}[m_{\tilde q}^p] +$$
$$\frac{1}{135}\sum_p (g_1^4+27g_2^4) LF_{5,-2}[m_{\tilde q}^p] + \frac{1}{54}\sum_p g_1^4 (4+9c_{2\gamma}^2) LF_{3,0}[m_{\tilde u}^p] -$$
$$\frac{1}{36}\sum_p g_1^4 (5+6c_{2\gamma}^2) LF_{4,-1}[m_{\tilde u}^p] + \frac{8}{135}\sum_p g_1^4 LF_{5,-2}[m_{\tilde u}^p] +$$
$$c_{2\gamma} g_1^2 s_\gamma^2 \overline{y_u}^{pr} y_u^{pr} LF_{3,0}[m_{\tilde u}^r] - c_{2\gamma} g_1^2 s_\gamma^2 \overline{y_u}^{pr} y_u^{pr} LF_{4,-1}[m_{\tilde u}^r] +$$
$$\frac{1}{288}\left(g_1^4 \left(8+9c_{4\gamma}(1+c_{4\gamma}) - 9 s_{2\gamma}^4\right) + 3 g_2^4 \left(8+3c_{4\gamma}(-3+c_{4\gamma}) - 3 s_{2\gamma}^4\right) +\right.$$
$$\left.18 g_1^2 g_2^2 \left(c_{4\gamma}(-1+c_{4\gamma}) - s_{2\gamma}^4\right)\right) LF_{3,0}[m_\Phi] + \frac{1}{96}\left(-g_1^4 \left(5+3c_{4\gamma}(1+c_{4\gamma}) - 3 s_{2\gamma}^4\right) +\right.$$
$$\left.3 g_2^4 \left(-5 - c_{4\gamma}(-3+c_{4\gamma}) + s_{2\gamma}^4\right) + 6 g_1^2 g_2^2 \left(c_{4\gamma} - c_{4\gamma}^2 + s_{2\gamma}^4\right)\right) LF_{4,-1}[m_\Phi] +$$
$$\frac{1}{45}(g_1^4+3g_2^4) LF_{5,-2}[m_\Phi] + \frac{1}{36}(g_1^4+3g_2^4) LF_{3,0}[\tilde\mu] + \frac{1}{24}(g_1^4+3g_2^4) LF_{4,-1}[\tilde\mu] -$$
$$\frac{2}{45}(g_1^4+3g_2^4) LF_{5,-2}[\tilde\mu] + \frac{1}{8} g_1^4 (2c_\gamma^4 + 3 s_\gamma^2 c_\gamma^2 + 2 s_\gamma^4) LF_{2,2,-1}[m_1,\tilde\mu] +$$
$$\frac{1}{8} m_1 g_1^4 \left(m_1 (c_\gamma^4+s_\gamma^4) + 4 s_\gamma \tilde\mu c_\gamma (c_\gamma^2+s_\gamma^2)\right) LF_{2,2,0}[m_1,\tilde\mu] -$$
$$\frac{1}{2} g_1^4 LF_{3,2,-2}[m_1,\tilde\mu] (c_\gamma^2+s_\gamma^2)^2 +$$
$$\frac{3}{8} g_1^4 \left(-m_1^2 (c_\gamma^2+s_\gamma^2)^2 - 8 m_1 s_\gamma \tilde\mu c_\gamma (c_\gamma^2+s_\gamma^2) - 4 s_\gamma^2 \tilde\mu^2 c_\gamma^2\right) LF_{3,2,-1}[m_1,\tilde\mu] -$$
$$g_1^4 m_1^2 s_\gamma^2 \tilde\mu^2 c_\gamma^2 LF_{3,2,0}[m_1,\tilde\mu] + \frac{1}{4} g_1^4 LF_{3,3,-3}[m_1,\tilde\mu] (c_\gamma^2+s_\gamma^2)^2 +$$
$$\frac{1}{4} g_1^4 \left(m_1^2 (c_\gamma^2+s_\gamma^2)^2 + 8 m_1 s_\gamma \tilde\mu c_\gamma (c_\gamma^2+s_\gamma^2) + 4 s_\gamma^2 \tilde\mu^2 c_\gamma^2\right) LF_{3,3,-2}[m_1,\tilde\mu] +$$
$$g_1^4 m_1^2 s_\gamma^2 \tilde\mu^2 c_\gamma^2 LF_{3,3,-1}[m_1,\tilde\mu] + \frac{1}{4} g_1^4 LF_{4,2,-3}[m_1,\tilde\mu] (c_\gamma^2+s_\gamma^2)^2 +$$
$$\frac{1}{4} g_1^4 \left(m_1^2 (c_\gamma^2+s_\gamma^2)^2 + 8 m_1 s_\gamma \tilde\mu c_\gamma (c_\gamma^2+s_\gamma^2) + 4 s_\gamma^2 \tilde\mu^2 c_\gamma^2\right) LF_{4,2,-2}[m_1,\tilde\mu] +$$
$$g_1^4 m_1^2 s_\gamma^2 \tilde\mu^2 c_\gamma^2 LF_{4,2,-1}[m_1,\tilde\mu] - g_2^4 (c_\gamma^2+s_\gamma^2) LF_{2,1,0}[m_2,\tilde\mu] +$$
$$\frac{1}{8} g_2^4 \left(4c_\gamma^4 + 4 s_\gamma^2 (-2+s_\gamma^2) + c_\gamma^2 (-8+19 s_\gamma^2)\right) LF_{2,2,-1}[m_2,\tilde\mu] +$$
$$\frac{1}{8} m_2 g_2^4 \left(m_2 (c_\gamma^4 - 8 s_\gamma^2 c_\gamma^2 + s_\gamma^4) + 4 s_\gamma \tilde\mu c_\gamma (-4+3c_\gamma^2+3s_\gamma^2)\right) LF_{2,2,0}[m_2,\tilde\mu] +$$
$$\frac{1}{2} g_2^4 (c_\gamma^2+s_\gamma^2) LF_{3,1,-1}[m_2,\tilde\mu] - \frac{1}{2} g_2^4 \left(c_\gamma^4 - s_\gamma^2 + s_\gamma^4 + c_\gamma^2 (-1+10 s_\gamma^2)\right) LF_{3,2,-2}[m_2,\tilde\mu] +$$
$$\frac{1}{8} g_2^4 \left(-3 m_2^2 (5c_\gamma^4 + 2 s_\gamma^2 c_\gamma^2 + 5 s_\gamma^4) - 8 m_2 s_\gamma \tilde\mu c_\gamma (-1+9c_\gamma^2+9s_\gamma^2) - 36 s_\gamma^2 \tilde\mu^2 c_\gamma^2\right)$$
$$LF_{3,2,-1}[m_2,\tilde\mu] - 3 g_2^4 m_2^2 s_\gamma^2 \tilde\mu^2 c_\gamma^2 LF_{3,2,0}[m_2,\tilde\mu] +$$
$$\frac{1}{4} g_2^4 (c_\gamma^4 + 10 s_\gamma^2 c_\gamma^2 + s_\gamma^4) LF_{3,3,-3}[m_2,\tilde\mu] +$$
$$\frac{1}{4} g_2^4 \left(m_2^2 (5c_\gamma^4 + 2 s_\gamma^2 c_\gamma^2 + 5 s_\gamma^4) + 24 m_2 s_\gamma \tilde\mu c_\gamma (c_\gamma^2+s_\gamma^2) + 12 s_\gamma^2 \tilde\mu^2 c_\gamma^2\right) LF_{3,3,-2}[m_2,\tilde\mu] +$$
$$3 g_2^4 m_2^2 s_\gamma^2 \tilde\mu^2 c_\gamma^2 LF_{3,3,-1}[m_2,\tilde\mu] + \frac{1}{4} g_2^4 (c_\gamma^4 + 10 s_\gamma^2 c_\gamma^2 + s_\gamma^4) LF_{4,2,-3}[m_2,\tilde\mu] +$$
$$\frac{1}{4} g_2^4 \left(m_2^2 (5c_\gamma^4 + 2 s_\gamma^2 c_\gamma^2 + 5 s_\gamma^4) + 24 m_2 s_\gamma \tilde\mu c_\gamma (c_\gamma^2+s_\gamma^2) + 12 s_\gamma^2 \tilde\mu^2 c_\gamma^2\right) LF_{4,2,-2}[m_2,\tilde\mu] +$$
$$3 g_2^4 m_2^2 s_\gamma^2 \tilde\mu^2 c_\gamma^2 LF_{4,2,-1}[m_2,\tilde\mu] + \frac{3}{2} c_\gamma^4 \overline{y_d}^{pr} \overline{y_d}^{st} y_d^{pt} y_d^{sr} LF_{2,1,0}[m_{\tilde d}^r, m_{\tilde d}^t] -$$
$$\frac{3}{2} c_\gamma^4 \overline{y_d}^{pr} \overline{y_d}^{st} y_d^{pt} y_d^{sr} LF_{3,1,-1}[m_{\tilde d}^r, m_{\tilde d}^t] +$$
$$\frac{1}{6} g_1^2 (c_\gamma \overline{a_d}^{pr} - s_\gamma \tilde\mu \overline{y_d}^{pr}) (c_\gamma a_d^{pr} - s_\gamma \tilde\mu y_d^{pr}) LF_{2,2,0}[m_{\tilde d}^r, m_{\tilde q}^p] -$$
$$\frac{1}{2} c_{2\gamma} g_1^2 (c_\gamma \overline{a_d}^{pr} - s_\gamma \tilde\mu \overline{y_d}^{pr}) (c_\gamma a_d^{pr} - s_\gamma \tilde\mu y_d^{pr}) LF_{3,1,0}[m_{\tilde d}^r, m_{\tilde q}^p] +$$
$$\frac{1}{12} g_1^2 (-1+3c_{2\gamma}) (c_\gamma \overline{a_d}^{pr} - s_\gamma \tilde\mu \overline{y_d}^{pr}) (c_\gamma a_d^{pr} - s_\gamma \tilde\mu y_d^{pr}) LF_{3,2,-1}[m_{\tilde d}^r, m_{\tilde q}^p] +$$
$$\frac{1}{2} c_{2\gamma} g_1^2 (c_\gamma \overline{a_d}^{pr} - s_\gamma \tilde\mu \overline{y_d}^{pr}) (c_\gamma a_d^{pr} - s_\gamma \tilde\mu y_d^{pr}) LF_{4,1,-1}[m_{\tilde d}^r, m_{\tilde q}^p] +$$
$$\frac{1}{2} c_\gamma^4 \overline{y_e}^{pr} \overline{y_e}^{st} y_e^{pt} y_e^{sr} LF_{2,1,0}[m_{\tilde e}^r, m_{\tilde e}^t] - \frac{1}{2} c_\gamma^4 \overline{y_e}^{pr} \overline{y_e}^{st} y_e^{pt} y_e^{sr} LF_{3,1,-1}[m_{\tilde e}^r, m_{\tilde e}^t] +$$
$$\frac{1}{6} g_1^2 (c_\gamma \overline{a_e}^{pr} - s_\gamma \tilde\mu \overline{y_e}^{pr}) (c_\gamma a_e^{pr} - s_\gamma \tilde\mu y_e^{pr}) LF_{2,2,0}[m_{\tilde e}^r, m_{\tilde l}^p] -$$
$$\frac{1}{2} c_{2\gamma} g_1^2 (c_\gamma \overline{a_e}^{pr} - s_\gamma \tilde\mu \overline{y_e}^{pr}) (c_\gamma a_e^{pr} - s_\gamma \tilde\mu y_e^{pr}) LF_{3,1,0}[m_{\tilde e}^r, m_{\tilde l}^p] +$$
$$\frac{1}{12} g_1^2 (-1+3c_{2\gamma}) (c_\gamma \overline{a_e}^{pr} - s_\gamma \tilde\mu \overline{y_e}^{pr}) (c_\gamma a_e^{pr} - s_\gamma \tilde\mu y_e^{pr}) LF_{3,2,-1}[m_{\tilde e}^r, m_{\tilde l}^p] +$$
$$\frac{1}{2} c_{2\gamma} g_1^2 (c_\gamma \overline{a_e}^{pr} - s_\gamma \tilde\mu \overline{y_e}^{pr}) (c_\gamma a_e^{pr} - s_\gamma \tilde\mu y_e^{pr}) LF_{4,1,-1}[m_{\tilde e}^r, m_{\tilde l}^p] -$$
$$\frac{1}{6} g_1^2 (c_\gamma \overline{a_e}^{pr} - s_\gamma \tilde\mu \overline{y_e}^{pr}) (c_\gamma a_e^{pr} - s_\gamma \tilde\mu y_e^{pr}) LF_{3,1,0}[m_{\tilde l}^p, m_{\tilde e}^r] -$$
$$\frac{1}{6} g_1^2 (c_\gamma \overline{a_e}^{pr} - s_\gamma \tilde\mu \overline{y_e}^{pr}) (c_\gamma a_e^{pr} - s_\gamma \tilde\mu y_e^{pr}) LF_{3,2,-1}[m_{\tilde l}^p, m_{\tilde e}^r] +$$
$$\frac{1}{8} (3+c_{2\gamma}) (g_1^2+g_2^2) (c_\gamma \overline{a_e}^{pr} - s_\gamma \tilde\mu \overline{y_e}^{pr}) (c_\gamma a_e^{pr} - s_\gamma \tilde\mu y_e^{pr}) LF_{4,1,-1}[m_{\tilde l}^p, m_{\tilde e}^r] -$$
$$\frac{1}{6} (g_1^2+3g_2^2) (c_\gamma \overline{a_e}^{pr} - s_\gamma \tilde\mu \overline{y_e}^{pr}) (c_\gamma a_e^{pr} - s_\gamma \tilde\mu y_e^{pr}) LF_{5,1,-2}[m_{\tilde l}^p, m_{\tilde e}^r] -$$
$$\frac{1}{6} g_1^2 (c_\gamma \overline{a_d}^{pr} - s_\gamma \tilde\mu \overline{y_d}^{pr}) (c_\gamma a_d^{pr} - s_\gamma \tilde\mu y_d^{pr}) LF_{3,1,0}[m_{\tilde q}^p, m_{\tilde d}^r] -$$
$$\frac{1}{6} g_1^2 (c_\gamma \overline{a_d}^{pr} - s_\gamma \tilde\mu \overline{y_d}^{pr}) (c_\gamma a_d^{pr} - s_\gamma \tilde\mu y_d^{pr}) LF_{3,2,-1}[m_{\tilde q}^p, m_{\tilde d}^r] -$$
$$\frac{1}{8} \left(g_1^2 (-5+c_{2\gamma}) - 3 g_2^2 (3+c_{2\gamma})\right) (c_\gamma \overline{a_d}^{pr} - s_\gamma \tilde\mu \overline{y_d}^{pr}) (c_\gamma a_d^{pr} - s_\gamma \tilde\mu y_d^{pr}) LF_{4,1,-1}[m_{\tilde q}^p, m_{\tilde d}^r] -$$
$$\frac{1}{2} (g_1^2+3g_2^2) (c_\gamma \overline{a_d}^{pr} - s_\gamma \tilde\mu \overline{y_d}^{pr}) (c_\gamma a_d^{pr} - s_\gamma \tilde\mu y_d^{pr}) LF_{5,1,-2}[m_{\tilde q}^p, m_{\tilde d}^r] +$$
$$\frac{3}{2} s_\gamma^2 c_\gamma^2 \overline{y_d}^{pr} y_d^{sr} \overline{y_u}^{st} y_u^{pt} LF_{2,1,0}[m_{\tilde q}^p, m_{\tilde q}^s] - \frac{3}{2} s_\gamma^2 c_\gamma^2 \overline{y_d}^{pr} y_d^{sr} \overline{y_u}^{st} y_u^{pt} LF_{3,1,-1}[m_{\tilde q}^p, m_{\tilde q}^s] -$$
$$\frac{1}{12} (g_1^2-9g_2^2) (s_\gamma \overline{a_u}^{pr} - \tilde\mu c_\gamma \overline{y_u}^{pr}) (s_\gamma a_u^{pr} - \tilde\mu c_\gamma y_u^{pr}) LF_{2,2,0}[m_{\tilde q}^p, m_{\tilde u}^r] -$$
$$\frac{1}{4} c_{2\gamma} (g_1^2+3g_2^2) (s_\gamma \overline{a_u}^{pr} - \tilde\mu c_\gamma \overline{y_u}^{pr}) (s_\gamma a_u^{pr} - \tilde\mu c_\gamma y_u^{pr}) LF_{3,1,0}[m_{\tilde q}^p, m_{\tilde u}^r] +$$
$$\frac{1}{24} \left(g_1^2 (1+3c_{2\gamma}) + 9 g_2^2 (-1+c_{2\gamma})\right)$$
$$(s_\gamma \overline{a_u}^{pr} - \tilde\mu c_\gamma \overline{y_u}^{pr}) (s_\gamma a_u^{pr} - \tilde\mu c_\gamma y_u^{pr}) LF_{3,2,-1}[m_{\tilde q}^p, m_{\tilde u}^r] +$$
$$\frac{1}{4} c_{2\gamma} (g_1^2+3g_2^2) (s_\gamma \overline{a_u}^{pr} - \tilde\mu c_\gamma \overline{y_u}^{pr}) (s_\gamma a_u^{pr} - \tilde\mu c_\gamma y_u^{pr}) LF_{4,1,-1}[m_{\tilde q}^p, m_{\tilde u}^r] +$$
$$\frac{3}{2} s_\gamma^2 c_\gamma^2 \overline{y_d}^{pr} y_d^{sr} \overline{y_u}^{st} y_u^{pt} LF_{2,1,0}[m_{\tilde q}^s, m_{\tilde q}^p] - \frac{3}{2} s_\gamma^2 c_\gamma^2 \overline{y_d}^{pr} y_d^{sr} \overline{y_u}^{st} y_u^{pt} LF_{3,1,-1}[m_{\tilde q}^s, m_{\tilde q}^p] +$$
$$\frac{1}{12} (g_1^2-9g_2^2) (s_\gamma \overline{a_u}^{pr} - \tilde\mu c_\gamma \overline{y_u}^{pr}) (s_\gamma a_u^{pr} - \tilde\mu c_\gamma y_u^{pr}) LF_{3,1,0}[m_{\tilde u}^r, m_{\tilde q}^p] +$$
$$\frac{1}{12} (g_1^2-9g_2^2) (s_\gamma \overline{a_u}^{pr} - \tilde\mu c_\gamma \overline{y_u}^{pr}) (s_\gamma a_u^{pr} - \tilde\mu c_\gamma y_u^{pr}) LF_{3,2,-1}[m_{\tilde u}^r, m_{\tilde q}^p] +$$
$$\frac{1}{4} \left(g_1^2 (1+2c_{2\gamma}) + 9 g_2^2\right) (s_\gamma \overline{a_u}^{pr} - \tilde\mu c_\gamma \overline{y_u}^{pr}) (s_\gamma a_u^{pr} - \tilde\mu c_\gamma y_u^{pr}) LF_{4,1,-1}[m_{\tilde u}^r, m_{\tilde q}^p] -$$
$$\frac{1}{2} (g_1^2+3g_2^2) (s_\gamma \overline{a_u}^{pr} - \tilde\mu c_\gamma \overline{y_u}^{pr}) (s_\gamma a_u^{pr} - \tilde\mu c_\gamma y_u^{pr}) LF_{5,1,-2}[m_{\tilde u}^r, m_{\tilde q}^p] +$$
$$\frac{3}{2} s_\gamma^4 \overline{y_u}^{pr} \overline{y_u}^{st} y_u^{pt} y_u^{sr} LF_{2,1,0}[m_{\tilde u}^r, m_{\tilde u}^t] - \frac{3}{2} s_\gamma^4 \overline{y_u}^{pr} \overline{y_u}^{st} y_u^{pt} y_u^{sr} LF_{3,1,-1}[m_{\tilde u}^r, m_{\tilde u}^t] -$$
$$\frac{1}{8} g_1^4 (c_\gamma^4 + 4 s_\gamma^2 c_\gamma^2 + s_\gamma^4) LF_{3,2,-2}[\tilde\mu, m_1] -$$
$$\frac{1}{8} g_1^4 \left(m_1^2 (c_\gamma^4+s_\gamma^4) + 6 m_1 s_\gamma \tilde\mu c_\gamma (c_\gamma^2+s_\gamma^2) + 4 s_\gamma^2 \tilde\mu^2 c_\gamma^2\right) LF_{3,2,-1}[\tilde\mu, m_1] -$$
$$\frac{5}{24} g_1^2 (g_1^2+3g_2^2) (c_\gamma^2+s_\gamma^2) LF_{4,1,-2}[\tilde\mu, m_1] -$$
$$\frac{1}{4} m_1 s_\gamma \tilde\mu c_\gamma g_1^2 (g_1^2+3g_2^2) LF_{4,1,-1}[\tilde\mu, m_1] + \frac{1}{4} g_1^4 s_\gamma^2 c_\gamma^2 LF_{4,2,-3}[\tilde\mu, m_1] +$$
$$\frac{1}{8} g_1^4 \left(m_1^2 (c_\gamma^4+s_\gamma^4) + 4 m_1 s_\gamma \tilde\mu c_\gamma (c_\gamma^2+s_\gamma^2) + 2 s_\gamma^2 \tilde\mu^2 c_\gamma^2\right) LF_{4,2,-2}[\tilde\mu, m_1] +$$
$$\frac{1}{4} g_1^4 m_1^2 s_\gamma^2 \tilde\mu^2 c_\gamma^2 LF_{4,2,-1}[\tilde\mu, m_1] + \frac{1}{6} g_1^2 (g_1^2+3g_2^2) (c_\gamma^2+s_\gamma^2) LF_{5,1,-3}[\tilde\mu, m_1] +$$
$$\frac{1}{3} m_1 s_\gamma \tilde\mu c_\gamma g_1^2 (g_1^2+3g_2^2) LF_{5,1,-2}[\tilde\mu, m_1] + 2 g_2^4 (c_\gamma^2+s_\gamma^2) LF_{3,1,-1}[\tilde\mu, m_2] +$$
$$2 m_2 s_\gamma \tilde\mu c_\gamma g_2^4 LF_{3,1,0}[\tilde\mu, m_2] + \frac{1}{8} g_2^4 \left(3c_\gamma^4 + 8 s_\gamma^2 + 3 s_\gamma^4 + c_\gamma^2 (8-12 s_\gamma^2)\right) LF_{3,2,-2}[\tilde\mu, m_2] +$$
$$\frac{1}{8} g_2^4 \left(-m_2^2 (c_\gamma^4 - 8 s_\gamma^2 c_\gamma^2 + s_\gamma^4) - 2 m_2 s_\gamma \tilde\mu c_\gamma (-8+3c_\gamma^2+3s_\gamma^2) - 12 s_\gamma^2 \tilde\mu^2 c_\gamma^2\right)$$
$$LF_{3,2,-1}[\tilde\mu, m_2] - \frac{1}{8} g_2^2 (5 g_1^2 + 27 g_2^2) (c_\gamma^2+s_\gamma^2) LF_{4,1,-2}[\tilde\mu, m_2] -$$
$$\frac{3}{4} m_2 s_\gamma \tilde\mu c_\gamma g_2^2 (g_1^2+7g_2^2) LF_{4,1,-1}[\tilde\mu, m_2] + \frac{1}{4} g_2^4 (-2c_\gamma^4 + s_\gamma^2 c_\gamma^2 - 2 s_\gamma^4) LF_{4,2,-3}[\tilde\mu, m_2] +$$
$$\frac{1}{8} g_2^4 \left(m_2^2 (c_\gamma^4 - 8 s_\gamma^2 c_\gamma^2 + s_\gamma^4) - 12 m_2 s_\gamma \tilde\mu c_\gamma (c_\gamma^2+s_\gamma^2) - 6 s_\gamma^2 \tilde\mu^2 c_\gamma^2\right) LF_{4,2,-2}[\tilde\mu, m_2] -$$
$$\frac{3}{4} g_2^4 m_2^2 s_\gamma^2 \tilde\mu^2 c_\gamma^2 LF_{4,2,-1}[\tilde\mu, m_2] + \frac{1}{2} g_2^2 (g_1^2+3g_2^2) (c_\gamma^2+s_\gamma^2) LF_{5,1,-3}[\tilde\mu, m_2] +$$
$$m_2 s_\gamma \tilde\mu c_\gamma g_2^2 (g_1^2+3g_2^2) LF_{5,1,-2}[\tilde\mu, m_2] + g_1^2 g_2^2 LF_{2,2,1,-2}[m_2, \tilde\mu, m_1] (c_\gamma^2+s_\gamma^2)^2 + \frac{1}{4} g_1^2 g_2^2$$
$$\left(3 m_1 m_2 (c_\gamma^2+s_\gamma^2)^2 + 2 s_\gamma \tilde\mu c_\gamma (7 m_1 + 5 m_2) (c_\gamma^2+s_\gamma^2) + 12 s_\gamma^2 \tilde\mu^2 c_\gamma^2\right) LF_{2,2,1,-1}[m_2, \tilde\mu, m_1] +$$
$$2 m_1 m_2 g_1^2 g_2^2 s_\gamma^2 \tilde\mu^2 c_\gamma^2 LF_{2,2,1,0}[m_2, \tilde\mu, m_1] - \frac{1}{2} g_1^2 g_2^2 LF_{3,2,1,-3}[m_2, \tilde\mu, m_1] (c_\gamma^2+s_\gamma^2)^2 +$$
$$\frac{1}{2} g_1^2 g_2^2 \left(-m_1 m_2 (c_\gamma^2+s_\gamma^2)^2 - 4 s_\gamma \tilde\mu c_\gamma (m_1+m_2) (c_\gamma^2+s_\gamma^2) - 4 s_\gamma^2 \tilde\mu^2 c_\gamma^2\right)$$
$$LF_{3,2,1,-2}[m_2, \tilde\mu, m_1] - 2 m_1 m_2 g_1^2 g_2^2 s_\gamma^2 \tilde\mu^2 c_\gamma^2 LF_{3,2,1,-1}[m_2, \tilde\mu, m_1] +$$
$$\frac{3}{2} c_\gamma^3 \overline{y_d}^{st} y_d^{sr} \left(-s_\gamma \tilde\mu \overline{y_d}^{pr} a_d^{pt} + \overline{a_d}^{pr} (c_\gamma a_d^{pt} - s_\gamma \tilde\mu y_d^{pt})\right) LF_{2,1,1,0}[m_{\tilde d}^r, m_{\tilde d}^t, m_{\tilde q}^p] +$$
$$\frac{3}{2} c_\gamma^3 \overline{y_d}^{st} y_d^{sr} \left(s_\gamma \tilde\mu \overline{y_d}^{pr} a_d^{pt} + \overline{a_d}^{pr} (-c_\gamma a_d^{pt} + s_\gamma \tilde\mu y_d^{pt})\right) LF_{3,1,1,-1}[m_{\tilde d}^r, m_{\tilde d}^t, m_{\tilde q}^p] +$$
$$\frac{3}{2} s_\gamma^2 \tilde\mu^2 c_\gamma^2 \overline{y_d}^{pr} \overline{y_d}^{st} y_d^{pt} y_d^{sr} LF_{2,1,1,0}[m_{\tilde d}^r, m_{\tilde d}^t, m_{\tilde q}^s] -$$
$$\frac{3}{2} s_\gamma^2 \tilde\mu^2 c_\gamma^2 \overline{y_d}^{pr} \overline{y_d}^{st} y_d^{pt} y_d^{sr} LF_{3,1,1,-1}[m_{\tilde d}^r, m_{\tilde d}^t, m_{\tilde q}^s] +$$
$$\frac{3}{4} c_\gamma^3 \overline{y_d}^{st} y_d^{sr} \left(s_\gamma \tilde\mu \overline{y_d}^{pr} a_d^{pt} + \overline{a_d}^{pr} (-c_\gamma a_d^{pt} + s_\gamma \tilde\mu y_d^{pt})\right) LF_{2,2,1,-1}[m_{\tilde d}^r, m_{\tilde q}^p, m_{\tilde d}^t] -$$
$$\frac{3}{4} s_\gamma^2 \tilde\mu^2 c_\gamma^2 \overline{y_d}^{pr} \overline{y_d}^{st} y_d^{pt} y_d^{sr} LF_{2,2,1,-1}[m_{\tilde d}^r, m_{\tilde q}^s, m_{\tilde d}^t] +$$
$$\frac{3}{2} c_\gamma^3 \overline{y_d}^{st} y_d^{sr} \left(-s_\gamma \tilde\mu \overline{y_d}^{pr} a_d^{pt} + \overline{a_d}^{pr} (c_\gamma a_d^{pt} - s_\gamma \tilde\mu y_d^{pt})\right) LF_{2,1,1,0}[m_{\tilde d}^t, m_{\tilde d}^r, m_{\tilde q}^p] +$$
$$\frac{3}{2} c_\gamma^3 \overline{y_d}^{st} y_d^{sr} \left(s_\gamma \tilde\mu \overline{y_d}^{pr} a_d^{pt} + \overline{a_d}^{pr} (-c_\gamma a_d^{pt} + s_\gamma \tilde\mu y_d^{pt})\right) LF_{3,1,1,-1}[m_{\tilde d}^t, m_{\tilde d}^r, m_{\tilde q}^p] +$$
$$\frac{3}{2} s_\gamma^2 \tilde\mu^2 c_\gamma^2 \overline{y_d}^{pr} \overline{y_d}^{st} y_d^{pt} y_d^{sr} LF_{2,1,1,0}[m_{\tilde d}^t, m_{\tilde d}^r, m_{\tilde q}^s] -$$
$$\frac{3}{2} s_\gamma^2 \tilde\mu^2 c_\gamma^2 \overline{y_d}^{pr} \overline{y_d}^{st} y_d^{pt} y_d^{sr} LF_{3,1,1,-1}[m_{\tilde d}^t, m_{\tilde d}^r, m_{\tilde q}^s] +$$
$$\frac{3}{4} c_\gamma^3 \overline{y_d}^{st} y_d^{sr} \left(s_\gamma \tilde\mu \overline{y_d}^{pr} a_d^{pt} + \overline{a_d}^{pr} (-c_\gamma a_d^{pt} + s_\gamma \tilde\mu y_d^{pt})\right) LF_{2,2,1,-1}[m_{\tilde d}^t, m_{\tilde q}^p, m_{\tilde d}^r] -$$
$$\frac{3}{4} s_\gamma^2 \tilde\mu^2 c_\gamma^2 \overline{y_d}^{pr} \overline{y_d}^{st} y_d^{pt} y_d^{sr} LF_{2,2,1,-1}[m_{\tilde d}^t, m_{\tilde q}^s, m_{\tilde d}^r] +$$
$$\frac{1}{2} c_\gamma^3 \overline{y_e}^{st} y_e^{sr} \left(-s_\gamma \tilde\mu \overline{y_e}^{pr} a_e^{pt} + \overline{a_e}^{pr} (c_\gamma a_e^{pt} - s_\gamma \tilde\mu y_e^{pt})\right) LF_{2,1,1,0}[m_{\tilde e}^r, m_{\tilde e}^t, m_{\tilde l}^p] +$$
$$\frac{1}{2} c_\gamma^3 \overline{y_e}^{st} y_e^{sr} \left(s_\gamma \tilde\mu \overline{y_e}^{pr} a_e^{pt} + \overline{a_e}^{pr} (-c_\gamma a_e^{pt} + s_\gamma \tilde\mu y_e^{pt})\right) LF_{3,1,1,-1}[m_{\tilde e}^r, m_{\tilde e}^t, m_{\tilde l}^p] +$$
$$\frac{1}{2} s_\gamma^2 \tilde\mu^2 c_\gamma^2 \overline{y_e}^{pr} \overline{y_e}^{st} y_e^{pt} y_e^{sr} LF_{2,1,1,0}[m_{\tilde e}^r, m_{\tilde e}^t, m_{\tilde l}^s] -$$
$$\frac{1}{2} s_\gamma^2 \tilde\mu^2 c_\gamma^2 \overline{y_e}^{pr} \overline{y_e}^{st} y_e^{pt} y_e^{sr} LF_{3,1,1,-1}[m_{\tilde e}^r, m_{\tilde e}^t, m_{\tilde l}^s] +$$
$$\frac{1}{4} c_\gamma^3 \overline{y_e}^{st} y_e^{sr} \left(s_\gamma \tilde\mu \overline{y_e}^{pr} a_e^{pt} + \overline{a_e}^{pr} (-c_\gamma a_e^{pt} + s_\gamma \tilde\mu y_e^{pt})\right) LF_{2,2,1,-1}[m_{\tilde e}^r, m_{\tilde l}^p, m_{\tilde e}^t] -$$
$$\frac{1}{4} s_\gamma^2 \tilde\mu^2 c_\gamma^2 \overline{y_e}^{pr} \overline{y_e}^{st} y_e^{pt} y_e^{sr} LF_{2,2,1,-1}[m_{\tilde e}^r, m_{\tilde l}^s, m_{\tilde e}^t] +$$
$$\frac{1}{2} c_\gamma^3 \overline{y_e}^{st} y_e^{sr} \left(-s_\gamma \tilde\mu \overline{y_e}^{pr} a_e^{pt} + \overline{a_e}^{pr} (c_\gamma a_e^{pt} - s_\gamma \tilde\mu y_e^{pt})\right) LF_{2,1,1,0}[m_{\tilde e}^t, m_{\tilde e}^r, m_{\tilde l}^p] +$$
$$\frac{1}{2} c_\gamma^3 \overline{y_e}^{st} y_e^{sr} \left(s_\gamma \tilde\mu \overline{y_e}^{pr} a_e^{pt} + \overline{a_e}^{pr} (-c_\gamma a_e^{pt} + s_\gamma \tilde\mu y_e^{pt})\right) LF_{3,1,1,-1}[m_{\tilde e}^t, m_{\tilde e}^r, m_{\tilde l}^p] +$$
$$\frac{1}{2} s_\gamma^2 \tilde\mu^2 c_\gamma^2 \overline{y_e}^{pr} \overline{y_e}^{st} y_e^{pt} y_e^{sr} LF_{2,1,1,0}[m_{\tilde e}^t, m_{\tilde e}^r, m_{\tilde l}^s] -$$
$$\frac{1}{2} s_\gamma^2 \tilde\mu^2 c_\gamma^2 \overline{y_e}^{pr} \overline{y_e}^{st} y_e^{pt} y_e^{sr} LF_{3,1,1,-1}[m_{\tilde e}^t, m_{\tilde e}^r, m_{\tilde l}^s] +$$
$$\frac{1}{4} c_\gamma^3 \overline{y_e}^{st} y_e^{sr} \left(s_\gamma \tilde\mu \overline{y_e}^{pr} a_e^{pt} + \overline{a_e}^{pr} (-c_\gamma a_e^{pt} + s_\gamma \tilde\mu y_e^{pt})\right) LF_{2,2,1,-1}[m_{\tilde e}^t, m_{\tilde l}^p, m_{\tilde e}^r] -$$
$$\frac{1}{4} s_\gamma^2 \tilde\mu^2 c_\gamma^2 \overline{y_e}^{pr} \overline{y_e}^{st} y_e^{pt} y_e^{sr} LF_{2,2,1,-1}[m_{\tilde e}^t, m_{\tilde l}^s, m_{\tilde e}^r] +$$
$$\frac{3}{2} s_\gamma^2 \overline{y_u}^{st} y_u^{pt} (-c_\gamma \overline{a_d}^{pr} + s_\gamma \tilde\mu \overline{y_d}^{pr}) (-c_\gamma a_d^{sr} + s_\gamma \tilde\mu y_d^{sr}) LF_{2,2,1,-1}[m_{\tilde q}^p, m_{\tilde q}^s, m_{\tilde d}^r] +$$
$$\frac{3}{2} s_\gamma c_\gamma^2 \overline{y_d}^{st} y_d^{pt} \overline{a_u}^{pr} (s_\gamma a_u^{sr} - \tilde\mu c_\gamma y_u^{sr}) LF_{2,1,1,0}[m_{\tilde q}^p, m_{\tilde q}^s, m_{\tilde u}^r] +$$
$$\frac{3}{2} s_\gamma c_\gamma^2 \overline{y_d}^{st} y_d^{pt} \overline{a_u}^{pr} (-s_\gamma a_u^{sr} + \tilde\mu c_\gamma y_u^{sr}) LF_{3,1,1,-1}[m_{\tilde q}^p, m_{\tilde q}^s, m_{\tilde u}^r] +$$
$$\frac{3}{2} \tilde\mu c_\gamma^3 \overline{y_d}^{pr} y_d^{sr} \overline{y_u}^{st} (-s_\gamma a_u^{pt} + \tilde\mu c_\gamma y_u^{pt}) LF_{2,1,1,0}[m_{\tilde q}^p, m_{\tilde q}^s, m_{\tilde u}^t] +$$
$$\frac{3}{2} \tilde\mu c_\gamma^3 \overline{y_d}^{pr} y_d^{sr} \overline{y_u}^{st} (s_\gamma a_u^{pt} - \tilde\mu c_\gamma y_u^{pt}) LF_{3,1,1,-1}[m_{\tilde q}^p, m_{\tilde q}^s, m_{\tilde u}^t] +$$
$$\frac{3}{4} s_\gamma c_\gamma^2 \overline{y_d}^{st} y_d^{pt} \overline{a_u}^{pr} (-s_\gamma a_u^{sr} + \tilde\mu c_\gamma y_u^{sr}) LF_{2,2,1,-1}[m_{\tilde q}^p, m_{\tilde u}^r, m_{\tilde q}^s] +$$
$$\frac{3}{4} \tilde\mu c_\gamma^3 \overline{y_d}^{pr} y_d^{sr} \overline{y_u}^{st} (s_\gamma a_u^{pt} - \tilde\mu c_\gamma y_u^{pt}) LF_{2,2,1,-1}[m_{\tilde q}^p, m_{\tilde u}^t, m_{\tilde q}^s] +$$
$$\frac{3}{2} s_\gamma c_\gamma^2 \overline{y_d}^{st} y_d^{pt} \overline{a_u}^{pr} (s_\gamma a_u^{sr} - \tilde\mu c_\gamma y_u^{sr}) LF_{2,1,1,0}[m_{\tilde q}^s, m_{\tilde q}^p, m_{\tilde u}^r] +$$
$$\frac{3}{2} s_\gamma c_\gamma^2 \overline{y_d}^{st} y_d^{pt} \overline{a_u}^{pr} (-s_\gamma a_u^{sr} + \tilde\mu c_\gamma y_u^{sr}) LF_{3,1,1,-1}[m_{\tilde q}^s, m_{\tilde q}^p, m_{\tilde u}^r] +$$
$$\frac{3}{2} \tilde\mu c_\gamma^3 \overline{y_d}^{pr} y_d^{sr} \overline{y_u}^{st} (-s_\gamma a_u^{pt} + \tilde\mu c_\gamma y_u^{pt}) LF_{2,1,1,0}[m_{\tilde q}^s, m_{\tilde q}^p, m_{\tilde u}^t] +$$
$$\frac{3}{2} \tilde\mu c_\gamma^3 \overline{y_d}^{pr} y_d^{sr} \overline{y_u}^{st} (s_\gamma a_u^{pt} - \tilde\mu c_\gamma y_u^{pt}) LF_{3,1,1,-1}[m_{\tilde q}^s, m_{\tilde q}^p, m_{\tilde u}^t] +$$
$$\frac{3}{4} s_\gamma c_\gamma^2 \overline{y_d}^{st} y_d^{pt} \overline{a_u}^{pr} (-s_\gamma a_u^{sr} + \tilde\mu c_\gamma y_u^{sr}) LF_{2,2,1,-1}[m_{\tilde q}^s, m_{\tilde u}^r, m_{\tilde q}^p] +$$
$$\frac{3}{4} \tilde\mu c_\gamma^3 \overline{y_d}^{pr} y_d^{sr} \overline{y_u}^{st} (s_\gamma a_u^{pt} - \tilde\mu c_\gamma y_u^{pt}) LF_{2,2,1,-1}[m_{\tilde q}^s, m_{\tilde u}^t, m_{\tilde q}^p] +$$
$$\frac{3}{2} s_\gamma^3 \overline{y_u}^{st} y_u^{sr} \left(-\tilde\mu c_\gamma \overline{y_u}^{pr} a_u^{pt} + \overline{a_u}^{pr} (s_\gamma a_u^{pt} - \tilde\mu c_\gamma y_u^{pt})\right) LF_{2,2,1,-1}[m_{\tilde u}^r, m_{\tilde u}^t, m_{\tilde q}^p] +$$
$$\frac{3}{2} s_\gamma^2 \tilde\mu^2 c_\gamma^2 \overline{y_u}^{pr} \overline{y_u}^{st} y_u^{pt} y_u^{sr} LF_{2,2,1,-1}[m_{\tilde u}^r, m_{\tilde u}^t, m_{\tilde q}^s] -$$
$$\frac{1}{4} g_1^2 g_2^2 (c_\gamma^4 + 5 s_\gamma^2 c_\gamma^2 + s_\gamma^4) LF_{2,1,1,-1}[\tilde\mu, m_1, m_2] +$$
$$\frac{1}{4} m_1 g_1^2 g_2^2 \left(m_2 (c_\gamma^4 - 4 s_\gamma^2 c_\gamma^2 + s_\gamma^4) - 4 s_\gamma \tilde\mu c_\gamma (c_\gamma^2+s_\gamma^2)\right) LF_{2,1,1,0}[\tilde\mu, m_1, m_2] +$$
$$\frac{3}{4} g_1^2 g_2^2 (c_\gamma^4+s_\gamma^4) LF_{3,1,1,-2}[\tilde\mu, m_1, m_2] +$$
$$\frac{1}{4} g_1^2 g_2^2 \left(-m_1 m_2 (c_\gamma^4 - 4 s_\gamma^2 c_\gamma^2 + s_\gamma^4) + s_\gamma \tilde\mu c_\gamma (5 m_1 + m_2) (c_\gamma^2+s_\gamma^2) + 4 s_\gamma^2 \tilde\mu^2 c_\gamma^2\right)$$
$$LF_{3,1,1,-1}[\tilde\mu, m_1, m_2] - \frac{1}{2} g_1^2 g_2^2 (c_\gamma^4 - s_\gamma^2 c_\gamma^2 + s_\gamma^4) LF_{4,1,1,-3}[\tilde\mu, m_1, m_2] +$$
$$\frac{1}{4} g_1^2 g_2^2 \left(m_1 m_2 (c_\gamma^4 - 4 s_\gamma^2 c_\gamma^2 + s_\gamma^4) - 2 s_\gamma \tilde\mu c_\gamma (m_1+m_2) (c_\gamma^2+s_\gamma^2) - 2 s_\gamma^2 \tilde\mu^2 c_\gamma^2\right)$$
$$LF_{4,1,1,-2}[\tilde\mu, m_1, m_2] - \frac{1}{2} m_1 m_2 g_1^2 g_2^2 s_\gamma^2 \tilde\mu^2 c_\gamma^2 LF_{4,1,1,-1}[\tilde\mu, m_1, m_2] -$$
$$\frac{1}{2} g_1^2 g_2^2 LF_{3,2,1,-3}[\tilde\mu, m_2, m_1] (c_\gamma^2+s_\gamma^2)^2 +$$
$$\frac{1}{2} g_1^2 g_2^2 \left(-m_1 m_2 (c_\gamma^2+s_\gamma^2)^2 - 4 s_\gamma \tilde\mu c_\gamma (m_1+m_2) (c_\gamma^2+s_\gamma^2) - 4 s_\gamma^2 \tilde\mu^2 c_\gamma^2\right)$$
$$LF_{3,2,1,-2}[\tilde\mu, m_2, m_1] - 2 m_1 m_2 g_1^2 g_2^2 s_\gamma^2 \tilde\mu^2 c_\gamma^2 LF_{3,2,1,-1}[\tilde\mu, m_2, m_1] +$$
$$\frac{3}{2} \left(s_\gamma^2 \tilde\mu^2 \overline{y_d}^{pr} \overline{y_d}^{st} \left(s_\gamma^2 \tilde\mu^2 y_d^{pt} y_d^{sr} + c_\gamma a_d^{pt} (c_\gamma a_d^{sr} - s_\gamma \tilde\mu y_d^{sr})\right) +\right.$$
$$c_\gamma \overline{a_d}^{pr} \left(-s_\gamma \tilde\mu \overline{y_d}^{st} (-c_\gamma a_d^{pt} + s_\gamma \tilde\mu y_d^{pt}) (-c_\gamma a_d^{sr} + s_\gamma \tilde\mu y_d^{sr}) + c_\gamma \overline{a_d}^{st}\right.$$
$$\left.\left.\left(s_\gamma^2 \tilde\mu^2 y_d^{pt} y_d^{sr} + c_\gamma a_d^{pt} (c_\gamma a_d^{sr} - s_\gamma \tilde\mu y_d^{sr})\right)\right)\right) LF_{2,1,1,1,0}[m_{\tilde d}^r, m_{\tilde d}^t, m_{\tilde q}^p, m_{\tilde q}^s] -$$
$$\frac{3}{2} \left(s_\gamma^2 \tilde\mu^2 \overline{y_d}^{pr} \overline{y_d}^{st} \left(s_\gamma^2 \tilde\mu^2 y_d^{pt} y_d^{sr} + c_\gamma a_d^{pt} (c_\gamma a_d^{sr} - s_\gamma \tilde\mu y_d^{sr})\right) +\right.$$
$$c_\gamma \overline{a_d}^{pr} \left(-s_\gamma \tilde\mu \overline{y_d}^{st} (-c_\gamma a_d^{pt} + s_\gamma \tilde\mu y_d^{pt}) (-c_\gamma a_d^{sr} + s_\gamma \tilde\mu y_d^{sr}) + c_\gamma \overline{a_d}^{st}\right.$$
$$\left.\left.\left(s_\gamma^2 \tilde\mu^2 y_d^{pt} y_d^{sr} + c_\gamma a_d^{pt} (c_\gamma a_d^{sr} - s_\gamma \tilde\mu y_d^{sr})\right)\right)\right) LF_{3,1,1,1,-1}[m_{\tilde d}^r, m_{\tilde d}^t, m_{\tilde q}^p, m_{\tilde q}^s] -$$
$$\frac{3}{4} \left(s_\gamma^2 \tilde\mu^2 \overline{y_d}^{pr} \overline{y_d}^{st} \left(s_\gamma^2 \tilde\mu^2 y_d^{pt} y_d^{sr} + c_\gamma a_d^{pt} (c_\gamma a_d^{sr} - s_\gamma \tilde\mu y_d^{sr})\right) +\right.$$
$$c_\gamma \overline{a_d}^{pr} \left(-s_\gamma \tilde\mu \overline{y_d}^{st} (-c_\gamma a_d^{pt} + s_\gamma \tilde\mu y_d^{pt}) (-c_\gamma a_d^{sr} + s_\gamma \tilde\mu y_d^{sr}) + c_\gamma \overline{a_d}^{st}\right.$$
$$\left.\left.\left(s_\gamma^2 \tilde\mu^2 y_d^{pt} y_d^{sr} + c_\gamma a_d^{pt} (c_\gamma a_d^{sr} - s_\gamma \tilde\mu y_d^{sr})\right)\right)\right) LF_{2,2,1,1,-1}[m_{\tilde d}^r, m_{\tilde q}^p, m_{\tilde d}^t, m_{\tilde q}^s] -$$
$$\frac{3}{4} \left(s_\gamma^2 \tilde\mu^2 \overline{y_d}^{pr} \overline{y_d}^{st} \left(s_\gamma^2 \tilde\mu^2 y_d^{pt} y_d^{sr} + c_\gamma a_d^{pt} (c_\gamma a_d^{sr} - s_\gamma \tilde\mu y_d^{sr})\right) +\right.$$
$$c_\gamma \overline{a_d}^{pr} \left(-s_\gamma \tilde\mu \overline{y_d}^{st} (-c_\gamma a_d^{pt} + s_\gamma \tilde\mu y_d^{pt}) (-c_\gamma a_d^{sr} + s_\gamma \tilde\mu y_d^{sr}) +\right.$$
$$\left.\left.c_\gamma \overline{a_d}^{st} \left(s_\gamma^2 \tilde\mu^2 y_d^{pt} y_d^{sr} + c_\gamma a_d^{pt} (c_\gamma a_d^{sr} - s_\gamma \tilde\mu y_d^{sr})\right)\right)\right)$$
$$LF_{2,2,1,1,-1}[m_{\tilde d}^r, m_{\tilde q}^s, m_{\tilde d}^t, m_{\tilde q}^p] - \frac{3}{2} s_\gamma \tilde\mu c_\gamma \left(s_\gamma^2 \tilde\mu^2 \overline{y_d}^{pr} \overline{y_d}^{st} y_d^{sr} a_d^{pt} +\right.$$
$$\left.\overline{a_d}^{pr} \left(c_\gamma^2 y_d^{sr} \overline{a_d}^{st} a_d^{pt} + \overline{y_d}^{st} (c_\gamma a_d^{pt} - s_\gamma \tilde\mu y_d^{pt}) (c_\gamma a_d^{sr} - s_\gamma \tilde\mu y_d^{sr})\right)\right)$$
$$LF_{2,1,1,1,0}[m_{\tilde d}^t, m_{\tilde d}^r, m_{\tilde q}^p, m_{\tilde q}^s] + \frac{3}{2} s_\gamma \tilde\mu c_\gamma \left(s_\gamma^2 \tilde\mu^2 \overline{y_d}^{pr} \overline{y_d}^{st} y_d^{sr} a_d^{pt} +\right.$$
$$\left.\overline{a_d}^{pr} \left(c_\gamma^2 y_d^{sr} \overline{a_d}^{st} a_d^{pt} + \overline{y_d}^{st} (c_\gamma a_d^{pt} - s_\gamma \tilde\mu y_d^{pt}) (c_\gamma a_d^{sr} - s_\gamma \tilde\mu y_d^{sr})\right)\right)$$
$$LF_{3,1,1,1,-1}[m_{\tilde d}^t, m_{\tilde d}^r, m_{\tilde q}^p, m_{\tilde q}^s] + \frac{3}{4} s_\gamma \tilde\mu c_\gamma \left(s_\gamma^2 \tilde\mu^2 \overline{y_d}^{pr} \overline{y_d}^{st} y_d^{sr} a_d^{pt} +\right.$$
$$\left.\overline{a_d}^{pr} \left(c_\gamma^2 y_d^{sr} \overline{a_d}^{st} a_d^{pt} + \overline{y_d}^{st} (c_\gamma a_d^{pt} - s_\gamma \tilde\mu y_d^{pt}) (c_\gamma a_d^{sr} - s_\gamma \tilde\mu y_d^{sr})\right)\right)$$
$$LF_{2,2,1,1,-1}[m_{\tilde d}^t, m_{\tilde q}^p, m_{\tilde d}^r, m_{\tilde q}^s] + \frac{3}{4} s_\gamma \tilde\mu c_\gamma \left(s_\gamma^2 \tilde\mu^2 \overline{y_d}^{pr} \overline{y_d}^{st} y_d^{sr} a_d^{pt} +\right.$$
$$\left.\overline{a_d}^{pr} \left(c_\gamma^2 y_d^{sr} \overline{a_d}^{st} a_d^{pt} + \overline{y_d}^{st} (c_\gamma a_d^{pt} - s_\gamma \tilde\mu y_d^{pt}) (c_\gamma a_d^{sr} - s_\gamma \tilde\mu y_d^{sr})\right)\right) LF_{2,2,1,1,-1}[m_{\tilde d}^t,$$
$$m_{\tilde q}^s, m_{\tilde d}^r, m_{\tilde q}^p] + \frac{1}{2} \left(s_\gamma^2 \tilde\mu^2 \overline{y_e}^{pr} \overline{y_e}^{st} \left(s_\gamma^2 \tilde\mu^2 y_e^{pt} y_e^{sr} + c_\gamma a_e^{pt} (c_\gamma a_e^{sr} - s_\gamma \tilde\mu y_e^{sr})\right) +\right.$$
$$c_\gamma \overline{a_e}^{pr} \left(-s_\gamma \tilde\mu \overline{y_e}^{st} (-c_\gamma a_e^{pt} + s_\gamma \tilde\mu y_e^{pt}) (-c_\gamma a_e^{sr} + s_\gamma \tilde\mu y_e^{sr}) + c_\gamma \overline{a_e}^{st}\right.$$
$$\left.\left.\left(s_\gamma^2 \tilde\mu^2 y_e^{pt} y_e^{sr} + c_\gamma a_e^{pt} (c_\gamma a_e^{sr} - s_\gamma \tilde\mu y_e^{sr})\right)\right)\right) LF_{2,1,1,1,0}[m_{\tilde e}^r, m_{\tilde e}^t, m_{\tilde l}^p, m_{\tilde l}^s] +$$
$$\frac{1}{2} \left(-s_\gamma^2 \tilde\mu^2 \overline{y_e}^{pr} \overline{y_e}^{st} \left(s_\gamma^2 \tilde\mu^2 y_e^{pt} y_e^{sr} + c_\gamma a_e^{pt} (c_\gamma a_e^{sr} - s_\gamma \tilde\mu y_e^{sr})\right) +\right.$$
$$c_\gamma \overline{a_e}^{pr} \left(s_\gamma \tilde\mu \overline{y_e}^{st} (-c_\gamma a_e^{pt} + s_\gamma \tilde\mu y_e^{pt}) (-c_\gamma a_e^{sr} + s_\gamma \tilde\mu y_e^{sr}) - c_\gamma \overline{a_e}^{st}\right.$$
$$\left.\left.\left(s_\gamma^2 \tilde\mu^2 y_e^{pt} y_e^{sr} + c_\gamma a_e^{pt} (c_\gamma a_e^{sr} - s_\gamma \tilde\mu y_e^{sr})\right)\right)\right) LF_{3,1,1,1,-1}[m_{\tilde e}^r, m_{\tilde e}^t, m_{\tilde l}^p, m_{\tilde l}^s] +$$
$$\frac{1}{4} \left(-s_\gamma^2 \tilde\mu^2 \overline{y_e}^{pr} \overline{y_e}^{st} \left(s_\gamma^2 \tilde\mu^2 y_e^{pt} y_e^{sr} + c_\gamma a_e^{pt} (c_\gamma a_e^{sr} - s_\gamma \tilde\mu y_e^{sr})\right) +\right.$$
$$c_\gamma \overline{a_e}^{pr} \left(s_\gamma \tilde\mu \overline{y_e}^{st} (-c_\gamma a_e^{pt} + s_\gamma \tilde\mu y_e^{pt}) (-c_\gamma a_e^{sr} + s_\gamma \tilde\mu y_e^{sr}) - c_\gamma \overline{a_e}^{st}\right.$$
$$\left.\left.\left(s_\gamma^2 \tilde\mu^2 y_e^{pt} y_e^{sr} + c_\gamma a_e^{pt} (c_\gamma a_e^{sr} - s_\gamma \tilde\mu y_e^{sr})\right)\right)\right) LF_{2,2,1,1,-1}[m_{\tilde e}^r, m_{\tilde l}^p, m_{\tilde e}^t, m_{\tilde l}^s] +$$
$$\frac{1}{4} \left(-s_\gamma^2 \tilde\mu^2 \overline{y_e}^{pr} \overline{y_e}^{st} \left(s_\gamma^2 \tilde\mu^2 y_e^{pt} y_e^{sr} + c_\gamma a_e^{pt} (c_\gamma a_e^{sr} - s_\gamma \tilde\mu y_e^{sr})\right) +\right.$$
$$c_\gamma \overline{a_e}^{pr} \left(s_\gamma \tilde\mu \overline{y_e}^{st} (-c_\gamma a_e^{pt} + s_\gamma \tilde\mu y_e^{pt}) (-c_\gamma a_e^{sr} + s_\gamma \tilde\mu y_e^{sr}) -\right.$$
$$\left.\left.c_\gamma \overline{a_e}^{st} \left(s_\gamma^2 \tilde\mu^2 y_e^{pt} y_e^{sr} + c_\gamma a_e^{pt} (c_\gamma a_e^{sr} - s_\gamma \tilde\mu y_e^{sr})\right)\right)\right)$$
$$LF_{2,2,1,1,-1}[m_{\tilde e}^r, m_{\tilde l}^s, m_{\tilde e}^t, m_{\tilde l}^p] - \frac{1}{2} s_\gamma \tilde\mu c_\gamma \left(s_\gamma^2 \tilde\mu^2 \overline{y_e}^{pr} \overline{y_e}^{st} y_e^{sr} a_e^{pt} +\right.$$
$$\left.\overline{a_e}^{pr} \left(c_\gamma^2 y_e^{sr} \overline{a_e}^{st} a_e^{pt} + \overline{y_e}^{st} (c_\gamma a_e^{pt} - s_\gamma \tilde\mu y_e^{pt}) (c_\gamma a_e^{sr} - s_\gamma \tilde\mu y_e^{sr})\right)\right)$$
$$LF_{2,1,1,1,0}[m_{\tilde e}^t, m_{\tilde e}^r, m_{\tilde l}^p, m_{\tilde l}^s] + \frac{1}{2} s_\gamma \tilde\mu c_\gamma \left(s_\gamma^2 \tilde\mu^2 \overline{y_e}^{pr} \overline{y_e}^{st} y_e^{sr} a_e^{pt} +\right.$$
$$\left.\overline{a_e}^{pr} \left(c_\gamma^2 y_e^{sr} \overline{a_e}^{st} a_e^{pt} + \overline{y_e}^{st} (c_\gamma a_e^{pt} - s_\gamma \tilde\mu y_e^{pt}) (c_\gamma a_e^{sr} - s_\gamma \tilde\mu y_e^{sr})\right)\right)$$
$$LF_{3,1,1,1,-1}[m_{\tilde e}^t, m_{\tilde e}^r, m_{\tilde l}^p, m_{\tilde l}^s] + \frac{1}{4} s_\gamma \tilde\mu c_\gamma \left(s_\gamma^2 \tilde\mu^2 \overline{y_e}^{pr} \overline{y_e}^{st} y_e^{sr} a_e^{pt} +\right.$$
$$\left.\overline{a_e}^{pr} \left(c_\gamma^2 y_e^{sr} \overline{a_e}^{st} a_e^{pt} + \overline{y_e}^{st} (c_\gamma a_e^{pt} - s_\gamma \tilde\mu y_e^{pt}) (c_\gamma a_e^{sr} - s_\gamma \tilde\mu y_e^{sr})\right)\right)$$
$$LF_{2,2,1,1,-1}[m_{\tilde e}^t, m_{\tilde l}^p, m_{\tilde e}^r, m_{\tilde l}^s] + \frac{1}{4} s_\gamma \tilde\mu c_\gamma \left(s_\gamma^2 \tilde\mu^2 \overline{y_e}^{pr} \overline{y_e}^{st} y_e^{sr} a_e^{pt} +\right.$$
$$\left.\overline{a_e}^{pr} \left(c_\gamma^2 y_e^{sr} \overline{a_e}^{st} a_e^{pt} + \overline{y_e}^{st} (c_\gamma a_e^{pt} - s_\gamma \tilde\mu y_e^{pt}) (c_\gamma a_e^{sr} - s_\gamma \tilde\mu y_e^{sr})\right)\right)$$
$$LF_{2,2,1,1,-1}[m_{\tilde e}^t, m_{\tilde l}^s, m_{\tilde e}^r, m_{\tilde l}^p] + \frac{3}{2} c_\gamma (c_\gamma a_d^{sr} - s_\gamma \tilde\mu y_d^{sr}) (s_\gamma a_u^{pt} - \tilde\mu c_\gamma y_u^{pt})$$
$$\left(s_\gamma \tilde\mu^2 \overline{y_d}^{pr} \overline{y_u}^{st} + \overline{a_d}^{pr} (s_\gamma \overline{a_u}^{st} - \tilde\mu c_\gamma \overline{y_u}^{st})\right) LF_{2,2,1,1,-1}[m_{\tilde q}^p, m_{\tilde q}^s, m_{\tilde d}^r, m_{\tilde u}^t] +$$
$$\frac{3}{2} \tilde\mu s_\gamma^2 \overline{y_d}^{st} \overline{a_u}^{pr} (-c_\gamma a_d^{pt} + s_\gamma \tilde\mu y_d^{pt}) (s_\gamma a_u^{sr} - \tilde\mu c_\gamma y_u^{sr}) LF_{2,2,1,1,-1}[m_{\tilde q}^p, m_{\tilde q}^s, m_{\tilde d}^t, m_{\tilde u}^r] +$$
$$\frac{3}{4} \left(\tilde\mu^2 c_\gamma^2 \overline{y_u}^{pr} \overline{y_u}^{st} \left(\tilde\mu^2 c_\gamma^2 y_u^{pt} y_u^{sr} + s_\gamma a_u^{pt} (s_\gamma a_u^{sr} - 2 \tilde\mu c_\gamma y_u^{sr})\right) +\right.$$
$$s_\gamma \overline{a_u}^{pr} \left(-2 \tilde\mu c_\gamma \overline{y_u}^{st} (-s_\gamma a_u^{pt} + \tilde\mu c_\gamma y_u^{pt}) (-s_\gamma a_u^{sr} + \tilde\mu c_\gamma y_u^{sr}) + s_\gamma \overline{a_u}^{st}\right.$$
$$\left.\left.\left.\left(\tilde\mu^2 c_\gamma^2 y_u^{pt} y_u^{sr} + s_\gamma a_u^{pt} (s_\gamma a_u^{sr} - 2 \tilde\mu c_\gamma y_u^{sr})\right)\right)\right) LF_{2,2,1,1,1,-1}[m_{\tilde u}^r, m_{\tilde u}^t, m_{\tilde q}^p, m_{\tilde q}^s]\right)$$