

$$\begin{aligned}
 F_2 [\{-1, i_{\theta_}, j_{\theta_}\}, \{-1, i_{1_}, j_{1_}\}] &= \frac{(\tau_1 - 1) (\tau_3 - 1) g_{1,j_1,i_0} g_{2,i_1,i_0} g_{3,j_0,i_1}}{\tau_1^2 (\tau_2 - 1) \tau_2} - \frac{(\tau_1 - 1) (\tau_3 - 1) g_{1,j_1,i_0} g_{2,i_1,j_0} g_{3,j_0,i_1}}{\tau_1^2 (\tau_2 - 1)} \\
 &\quad - \frac{(\tau_1 - 1) (\tau_3 - 1) g_{1,j_1,i_0} g_{2,j_1,i_0} g_{3,j_0,i_1}}{\tau_1^2 (\tau_2 - 1) \tau_2} + \frac{(\tau_1 - 1) (\tau_3 - 1) g_{1,j_1,i_0} g_{2,j_1,j_0} g_{3,j_0,i_1}}{\tau_1^2 (\tau_2 - 1)} ;
 \end{aligned}$$