

$$\begin{aligned}
R_1[-1, i_-, j_-] = & -1/2 - T_1^{-1} g_{1ji} g_{2ii} - (1 - T_1^{-1} - T_2^{-1}) g_{1ji} g_{2ji} - \\
& g_{1jj} g_{2ji} - g_{1ji} g_{2jj} + g_{3ii} + T_1^{-1} g_{1ji} g_{3ii} - (1 - T_2^{-1}) g_{2ji} g_{3ii} - \\
& g_{2jj} g_{3ii} + (1 - T_3^{-1}) g_{1ji} g_{3ji} - (1 - T_3^{-1}) g_{2ii} g_{3ji} + \\
& (2 - T_2^{-1}) (1 - T_3^{-1}) g_{2ji} g_{3ji} + (1 - T_3^{-1}) g_{2jj} g_{3ji} + g_{1ji} g_{3jj} + \\
& g_{2ji} g_{3jj} + \\
& (T_1 (1 - T_2^{-1}) g_{1ii} g_{2ji} - g_{1jj} g_{2ii} + T_1 g_{1ii} g_{2jj} + g_{1jj} g_{3ii} - \\
& T_2^{-1} (T_3 - 1) g_{1ii} g_{3ji} - T_1 g_{1ii} g_{3jj}) / (T_1 - 1);
\end{aligned}$$