

$$\text{Simplify}[R_1[1, i, i^+] + (g_{i^+, i^+} - 1/2) // . \{ \quad (* R1r *)$$

$$g_{i\beta\_} \Rightarrow \delta_{i\beta} + T g_{i^+, \beta} + (1 - T) g_{i^{++}, \beta}, \quad g_{i^+, \beta\_} \Rightarrow \delta_{i^+, \beta} + g_{i^{++}, \beta},$$

$$g_{a\_ , i} \Rightarrow T^{-1} (g_{a, i^+} - \delta_{a, i^+}), \quad g_{a\_ , i^+} \Rightarrow T g_{a, i^{++}} - (1 - T) \delta_{a, i^+} - T \delta_{a, i^{++}} \} ]$$