$$=\sum_{\substack{\Gamma_{i-1} \\ \mathcal{F} \\ \rho}} \overline{(F_{\Gamma_{i}}^{\rho \mathcal{F} \Gamma_{i}})_{\rho \Gamma_{i}'}} (F_{\Gamma_{i+1}}^{\Gamma_{i} \mathcal{F} \rho^{*}})_{\rho^{*} \Gamma_{i}'}$$