(ii)
$$\begin{array}{c} p \\ \widehat{\mathcal{K}}_g \end{array} \equiv \begin{array}{c} p \\ \widehat{\mathcal{K}}_{g} \end{array} + \begin{array}{c} p \\ \widehat{\mathcal{K}}_{(\kappa(\chi)-1)^{-1}} \end{array}$$