$$\bigcap^{+m} \hbar_{\underset{\bullet}{\triangleright}}\mathbb{G} = \prod_{|\mathcal{M}|=1+m} \bigcap^{\mathcal{M}} U_{\underset{\bullet}{\triangleright}}\mathbb{G}$$

$$\bigcap^{+m} \hbar_{\underset{\bullet}{\triangleright}}\mathbb{G} = \frac{\mathcal{U} \supset \mathcal{M} \xrightarrow{\mathbf{4}} {}_{\mathcal{M}}\mathbf{4} \in \bigcap^{\mathcal{M}}_{U}{}_{\underset{\bullet}{\triangleright}}\mathbb{G}}{{}_{\sigma\mathcal{M}}\mathbf{4} = (\overset{\sigma}{-}1)_{\mathcal{M}}\mathbf{4}} = \frac{U_0 \cdots U_m \xrightarrow{\mathbf{4}} {}_{U_0\cdots U_m}\mathbf{4} \in {}^{U_0 \cap \cdots \cap U_m}{}_{\underset{\bullet}{\triangleright}}\mathbb{G}}{{}_{U_{\sigma_1}\cdots U_{\sigma_m}}\mathbf{4} = (\overset{\sigma}{-}1)_{U_0\cdots U_m}\mathbf{4}}$$

$$\bigcap^{+\mathbb{I}} \hbar_{\underset{\bullet}{\triangleright}}\mathbb{G} = \sum_{0 \leqslant m} \bigcap^{+m} \hbar_{\underset{\bullet}{\triangleright}}\mathbb{G}$$

$$\bigcap^{+m} \hbar_{\underset{\bullet}{\triangleright}}\mathbb{G} \ni {}_{\cdots}\mathbf{4} \text{ m-cochain } \Leftrightarrow \bigwedge_{|\mathcal{M}|=1+m} {}_{\mathcal{M}}\mathbf{4} \in \bigcap_{\mathcal{M}} U_{\underset{\bullet}{\triangleright}}\mathbb{G} \Leftrightarrow {}_{U_0\cdots U_m}\mathbf{4} \in {}^{U_0 \cap \cdots \cap U_m}{}_{\underset{\bullet}{\triangleright}}\mathbb{G}$$