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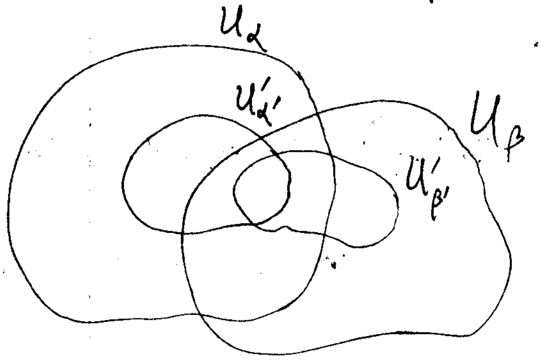
$\underline{\mathcal{U}}' = \{U'_{\beta'}\}_{\beta' \in I'} < \underline{\mathcal{U}} = \{U_\alpha\}_{\alpha \in I}$ $\Rightarrow$ let $\varphi : I' \longrightarrow I$, $\alpha' \longmapsto \alpha$.

$$H^1(\underline{\mathcal{U}}, \mathcal{O}^*) \xrightarrow{\varphi^*} H^1(\underline{\mathcal{U}}', \mathcal{O}^*) \quad \text{is injective.}$$

$$[g] = [(g_{\alpha\beta})] \longmapsto [g'] = [(g'_{\alpha'\beta'})]$$

defined by $\quad g'_{\alpha'\beta'} = g_{\alpha\beta}|_{U'_{\alpha'} \cap U'_{\beta'}}$



$\Rightarrow \quad g'_{\beta'\alpha'} \, g'_{\alpha'\beta'} = 1$

On $\quad U'_{\alpha'} \cap U'_{\beta'} \cap U'_{\gamma'} \neq \phi$

$g'_{\alpha'\beta'} = g_{\alpha\beta}|_{U'_{\alpha'} \cap U'_{\beta'}} \quad g'_{\beta'\gamma'} = g_{\beta\gamma}|_{U'_{\beta'} \cap U'_{\gamma'}}$

$g'_{\gamma'\alpha'} = g_{\gamma\alpha}|_{U'_{\gamma'} \cap U'_{\alpha'}}$

$\Longrightarrow \quad g'_{\alpha'\beta'} \, g'_{\beta'\gamma'} \, g'_{\gamma'\alpha'} = 1$

Note: If $\quad U'_{\alpha'} \subset U_\alpha \quad$ and $\quad U'_{\beta'} \subset U_\alpha$,
then

$g'_{\alpha'\beta'} = g_{\alpha\alpha}|_{U'_{\alpha'} \cap U'_{\beta'}} = 1 \quad$ since $\quad g_{\alpha\alpha} = 1 \quad$ by convention

and $g_{\alpha\alpha} = 0$ when considered additive group.