Explanation. For any open set $\mathcal{U} \subset S$, there is a restriction mapping

$$\mathrm{Ext}^*(S; \mathcal{F}, \mathcal{G}) \longrightarrow \mathrm{Ext}^*(\mathcal{U}; \mathcal{F}, \mathcal{G})$$

of global Ext's.

⌜ $\mathrm{Ext}^*(S; \mathcal{F}, \mathcal{G}) = \mathbb{H}^*(S, \mathrm{Hom}_{\mathcal{O}}(\mathcal{E}.(\mathcal{F}), \mathcal{G}))$

$$\mathcal{E}_3 \longrightarrow \mathcal{E}_2 \longrightarrow \mathcal{E}_1 \longrightarrow \mathcal{E}_0 \longrightarrow \mathcal{F} \longrightarrow 0$$

$$0 \longrightarrow \mathrm{Hom}(\mathcal{F}, \mathcal{G}) \longrightarrow \mathrm{Hom}(\mathcal{E}_0, \mathcal{G}) \longrightarrow \mathrm{Hom}(\mathcal{E}_1, \mathcal{G}) \longrightarrow \mathrm{Hom}(\mathcal{E}_2, \mathcal{G}) \rightarrow$$

For an open covering $\underline{V} = \{V_\alpha\}$,

$$C^n(\underline{V}, \mathrm{Hom}(\mathcal{E}.(\mathcal{F}), \mathcal{G})) = \sum_{p+q=n} C^p(\underline{V}, \mathrm{Hom}(\mathcal{E}_q, \mathcal{G})) \xrightarrow{\text{restriction}} \sum_{p+q=n} C^p(\underline{W}, \mathrm{Hom}(\mathcal{E}_q, \mathcal{G}))$$

where $\underline{W} = \{V_\alpha \cap \mathcal{U}\}$.

$\Rightarrow$ There is a restriction mapping

$$\mathrm{Ext}^*(S; \mathcal{F}, \mathcal{G}) \longrightarrow \mathrm{Ext}^*(\mathcal{U}; \mathcal{F}, \mathcal{G})$$

of global Ext's. ⌟

For $\mathcal{U}$ sufficiently small so that $H^q(\mathcal{U}, \underline{\mathrm{Ext}}^*_{\mathcal{O}}(\mathcal{F}, \mathcal{G})) = 0$ for $q > 0$,

$$\mathrm{Ext}^*(\mathcal{U}; \mathcal{F}, \mathcal{G}) \cong H^0(\mathcal{U}, \underline{\mathrm{Ext}}^*_{\mathcal{O}}(\mathcal{F}, \mathcal{G}))$$

by the spectral sequence relating local and global Ext's.

⌜ We will show that, for sufficiently small open set $\mathcal{U} \cong \mathbb{C}^n$ and a coherent sheaf $\mathcal{E}$,