$C^0(\underline{U}, \underline{Hom}_{\mathcal{O}}(\mathcal{E}_2, \mathcal{F})) \oplus C^1(\underline{U}, \underline{Hom}_{\mathcal{O}}(\mathcal{E}_1, \mathcal{F})) \oplus C^2(\underline{U}, \underline{Hom}_{\mathcal{O}}(\mathcal{E}_0, \mathcal{F}))$.

$De = 0 \iff \partial^*\varphi = 0, \ \delta\varphi + \partial^*\eta = 0$ and $\delta\eta = 0$.

$$\partial^*\varphi = 0 \Rightarrow \begin{array}{ccc} \prod \underline{Hom}_{\mathcal{O}}(\mathcal{E}_1, \mathcal{F})(U_\alpha) & \xrightarrow{\partial^*} & \prod \underline{Hom}_{\mathcal{O}}(\mathcal{E}_2, \mathcal{F})(U_\alpha) \\ \psi & & \\ \{\varphi_\alpha\} & \longmapsto & \{\varphi_\alpha \circ \partial\} = 0 \end{array}$$

$\Rightarrow \varphi_\alpha = 0$ on $\partial(\mathcal{E}_2(U_\alpha))$, i.e $\varphi_\alpha : \partial(\mathcal{E}_2)(U_\alpha) \to \mathcal{F}(U_\alpha)$ is a zero map.

Note: φ_α may be considered as a sheaf map over U_α, from $\mathcal{E}_1$ to $\mathcal{F}$.

Thus, over U_α, we have

$$0 \longrightarrow \mathcal{E}_1/\partial\mathcal{E}_2 \xrightarrow{\partial} \mathcal{E}_0 \xrightarrow{\psi} \mathcal{G} \to 0$$ an exact sequence of sheaves

and

$$\mathcal{E}_1/\partial\mathcal{E}_2 \xrightarrow{\varphi_\alpha} \mathcal{F}$$ a sheaf map.

Consider the following short complexes of sheaves over U_α.

$$0 \longrightarrow \mathcal{F} \overset{i}{\hookrightarrow} \mathcal{F}\oplus\mathcal{E}_0 \Big/ \mu(\mathcal{E}_1/\partial\mathcal{E}_2) \xrightarrow{\psi} \mathcal{G} \longrightarrow 0$$

$$(f, e_0) + \mathrm{Im}\,\mu \longmapsto \psi(e_0)$$

$$\mu : \mathcal{E}_1/\partial\mathcal{E}_2 \longrightarrow \mathcal{F}\oplus\mathcal{E}_0$$

Then, at each stalk, by the arguments on P723