DATE . . PAGE

Writing out the conditions that e be a cocycle gives the relations:

(1) $\partial^* \varphi = 0 \Rightarrow \varphi_\alpha \in H^0(U_\alpha, \underline{Hom}_{\mathcal{O}}(\mathcal{E}_1/\mathcal{E}_2, \mathcal{F}))$
$\Rightarrow \varphi_\alpha$ defines an extension

$(\mathcal{E}_\alpha) \qquad 0 \longrightarrow \mathcal{F}|U_\alpha \longrightarrow \mathcal{E}_\alpha \longrightarrow \mathcal{G}|U_\alpha \longrightarrow 0$

by the same argument as in the proof of the first lemma in the preceding section,

(2) $-\delta\varphi = \partial^*\eta \Rightarrow \varphi_\alpha - \varphi_\beta = \partial^*\eta_{\alpha\beta}$
$\Rightarrow$ the local extensions $(\mathcal{E}_\alpha)$ given above patch together in double intersections $U_\alpha \cap U_\beta$; and

(3) $\delta\eta = 0 \Rightarrow$ the cocycle rule for the patchings of the local extensions in double intersections.

Admittedly, step 3 needs some amplification, but the details to be checked are straightforward enough. Q. E. D.

$\Gamma \quad De = D(\varphi \oplus \eta) = D\varphi + D\eta$
$= (-\partial^*\varphi, \ \delta\varphi + \partial^*\eta, \ \delta\eta) \in$

MOOKEUK CO