$$g_{\alpha\beta} = \varphi_\alpha \circ \varphi_\beta^{-1}.$$

$$g_{\alpha\beta} = \left(\begin{array}{c|c} h_{\alpha\beta} & * \\ \hline 0 & \tilde{j}_{\alpha\beta} \end{array}\right) \qquad \{h_{\alpha\beta}\} \text{ transition functions for } F.$$

$$Q = E/F = \frac{\coprod U_\alpha \times \mathbb{C}^{n-k}}{\begin{array}{c}(x, \quad v) \\ \sim (x, \ \tilde{j}_{\alpha\beta}(x) v)\end{array}}$$

Consider
$$K = \frac{\coprod U_\alpha \times \mathbb{C}^n / \mathbb{C}^k}{\begin{array}{c}(x, \quad \omega + \mathbb{C}^k) \\ \sim (x, \ \underset{\displaystyle g_{\alpha\beta}(x)\,{}^t\omega}{\overset{\shortparallel}{g_{\alpha\beta}(x)(\omega)}} + \mathbb{C}^k)\end{array}}$$

Claim: $K \cong Q$.

pf) $\omega = \omega_1 + \omega_2 = (\overbrace{* \cdots *}^{k}\ 0 \cdots 0) + (0, \cdots 0, \overbrace{* \cdots *}^{n-k})$

$\Rightarrow \omega + \mathbb{C}^k = \omega_2 + \mathbb{C}^k$

$$\Rightarrow g_{\alpha\beta}(x)(\omega) = g_{\alpha\beta}\,{}^t\omega = \left(\begin{array}{c|c} h_{\alpha\beta} & * \\ \hline 0 & \tilde{j}_{\alpha\beta} \end{array}\right)\begin{pmatrix} * \\ \vdots \\ * \\ 0 \\ \vdots \\ 0 \end{pmatrix} +$$

$$\left(\begin{array}{c|c} h_{\alpha\beta} & * \\ \hline 0 & \tilde{j}_{\alpha\beta} \end{array}\right)\begin{pmatrix} 0 \\ \vdots \\ 0 \\ * \\ \vdots \\ * \end{pmatrix} = \begin{pmatrix} * \\ \vdots \\ * \\ 0 \\ \vdots \\ 0 \end{pmatrix} + \begin{pmatrix} * \\ \vdots \\ * \\ \tilde{j}_{\alpha\beta}\,{}^t\omega_2 \end{pmatrix}$$

$$= \begin{pmatrix} * \\ \vdots \\ * \\ 0 \\ \vdots \\ 0 \end{pmatrix} + \begin{pmatrix} 0 \\ \vdots \\ 0 \\ \tilde{j}_{\alpha\beta}\,{}^t\omega_2 \end{pmatrix}$$