where $l(v) = \langle v, \omega \rangle$. for all $v \in \mathbb{C}^n$.

Consider the following map which is isomorphic.

$$\begin{array}{ccc} S^* & \longrightarrow & Q \\ \downarrow & & \downarrow \\ G(n-k, n^*) & \longrightarrow & G(k,n) \\ \rotatebox{90}{$\in$} & & \rotatebox{90}{$\in$} \\ {}^*\Lambda & \longmapsto & \Lambda \end{array} \qquad \omega \perp \Lambda$$

$$\begin{array}{ccc} ({}^*\Lambda, \ \omega) & \longmapsto & (\Lambda, \ \omega + \Lambda) \\ \rotatebox{90}{$\in$} & & \rotatebox{90}{$\in$} \ ? \\ S^* & & Q \end{array}$$

It remains to show that

$$Q = \bigcup_{\Lambda \in G(k,n)} \mathbb{C}^n / \Lambda$$, which was proved above

" We want to express the dual bundle E^* of E in terms of transition functions of E. see p67

$$\varphi_\alpha : E|_{U_\alpha} \longrightarrow U_\alpha \times \mathbb{C}^n$$

$$\varphi_\alpha^* : E^*|_{U_\alpha} \longrightarrow U_\alpha \times \mathbb{C}^{n*}.$$ induced by φ_α naturally.

Let $g_{\alpha\beta} = \varphi_\alpha \circ \varphi_\beta^{-1}$, and

$$\psi_\alpha : E^*|_{U_\alpha} \longrightarrow U_\alpha \times \mathbb{C}^{n*} \xrightarrow[\cong]{f} U_\alpha \times \mathbb{C}^n$$

$f \leftarrow$ defined naturally

defined by $f \circ \varphi_\alpha^*$.