We want to prove that $\{\sigma(p) \cap F\}_{p \in \{[*,*,0,0]\}}$ is a linear system. $p = [p_0, p_1, 0, 0]$. $\Rightarrow$ Let $h = (-p_1 X_0 + p_0 X_1 + a_2 X_2 + a_3 X_3 = 0)$ be the plane containing every line in $\sigma(p)$. Assume that $p_1 \neq 0$. $\Rightarrow$ We choose a point $q = [\frac{p_0\alpha + a_2\beta + a_3\gamma}{p_1}, \alpha, \beta, \gamma] \in h$, $\alpha, \beta, \gamma \in \mathbb{C}$. $\Rightarrow \tilde{\Phi}(\overline{pq}) =$

$$(-p_1 e_1 + p_0 e_2) \wedge \left(\frac{p_0\alpha + a_2\beta + a_3\gamma}{p_0} e_1 + \alpha_2 e_2 + \beta e_3 + \gamma e_4 \right)$$

$$= \left(-p_1\alpha - \frac{p_0(p_0\alpha + a_2\beta + a_3\gamma)}{p_1}\right) e_1 \wedge e_2 - p_1\beta\, e_1 \wedge e_3 - p_1\gamma\, e_1 \wedge e_4$$

$$+ p_0\beta\, e_2 \wedge e_3 + p_0\gamma\, e_2 \wedge e_4.$$

$$\Rightarrow \left\{ \left[-p_1\alpha - \frac{p_0(p_0\alpha + a_2\beta + a_3\gamma)}{p_1}, -p_1\beta, -p_1\gamma, p_0\beta, p_0\gamma \right] \right\}$$

forms a 2-plane. Thus we can conclude that $(p_0 X_1 + p_1 X_3 + p_0 X_2 + p_1 X_4 = 0)$

$\cap\ (p_0 X_1 + p_1 X_3 = 0)$ is the 2-plane since the 2-plane is formed by almost all points $\alpha, \beta, \gamma \in \mathbb{C}$. $\Rightarrow \tau(p_0, p_1) = (p_0 X_1 + p_1 X_3 = 0)$

$\tau(p_0', p_1') = (p_0' X_1 + p_1' X_3 = 0) \Rightarrow \tau(p_0, p_1) + \tau(p_0', p_1') = ((p_0 + p_0') X_1 + (p_1 + p_1') X_3 = 0) \Rightarrow \tau$'s form a linear system. Similarly, $(p_0 X_1 + p_1 X_3 + p_0 X_2 + p_1 X_4 = 0)$'s is a linear system. $\Rightarrow \sigma(p)$'s is a linear system on $F \Rightarrow \{\sigma(p) \cap F\}_{p \in \ell_x}$ is a linear system on U.

In fact, we see that