

$$= (y_0 \alpha - y_1) e_1 \wedge e_2 + (y_0(z_1 + \alpha z_3) - y_2) e_1 \wedge e_3 + \\ (y_0(z_2 + \alpha z_4) - y_3) e_1 \wedge e_4 + (y_1(z_1 + \alpha z_3) - y_2 \alpha) e_2 \wedge e_3 \\ + (y_1(z_2 + \alpha z_4) - \alpha y_3) e_2 \wedge e_4 + (y_2(z_2 + \alpha z_4) - y_3(z_1 + \alpha z_3)) e_3 \wedge e_4$$

where  $y = [y_0, y_1, y_2, y_3] \in \mathbb{P}^3$ .

$\Rightarrow$  For all  $y \neq v_\alpha$ ,  $\tilde{\phi}(\overline{y v_\alpha}) \in \text{Tangent plane of } \tilde{H}$   
at  $x$ .  $\Rightarrow$  Since the tangent plane of  $\tilde{H}$  at  $x$  is  
given by  $\frac{\partial \tilde{H}}{\partial w_0}(x) w_0 + \dots + \frac{\partial \tilde{H}}{\partial w_5}(x) w_5 = 0$ ,

$$\frac{\partial \tilde{H}}{\partial w_0}(x) (y_0 \alpha - y_1) + \frac{\partial \tilde{H}}{\partial w_1}(x) (y_0(z_1 + \alpha z_3) - y_2) \\ + \frac{\partial \tilde{H}}{\partial w_2}(x) (y_0(z_2 + \alpha z_4) - y_3) + \frac{\partial \tilde{H}}{\partial w_3}(x) (y_1(z_1 + \alpha z_3) - y_2 \alpha) \\ + \frac{\partial \tilde{H}}{\partial w_4}(x) (y_1(z_2 + \alpha z_4) - \alpha y_3) + \frac{\partial \tilde{H}}{\partial w_5}(x) (y_2(z_2 + \alpha z_4) - y_3(z_1 + \alpha z_3)) \\ = 0.$$

$$\Rightarrow y_0 \left( \frac{\partial \tilde{H}}{\partial w_0} \alpha + \frac{\partial \tilde{H}}{\partial w_1} (z_1 + \alpha z_3) + \frac{\partial \tilde{H}}{\partial w_2} (z_2 + \alpha z_4) \right) +$$

$$y_1 \left( -\frac{\partial \tilde{H}}{\partial w_0} + \frac{\partial \tilde{H}}{\partial w_3} (z_1 + \alpha z_3) + \frac{\partial \tilde{H}}{\partial w_4} (z_2 + \alpha z_4) \right)$$

$$+ y_2 \left( -\frac{\partial \tilde{H}}{\partial w_1} - \frac{\partial \tilde{H}}{\partial w_5} \alpha + \frac{\partial \tilde{H}}{\partial w_5} (z_1 + \alpha z_3) \right)$$

$$+ y_3 \left( -\frac{\partial \tilde{H}}{\partial w_2} - \alpha \frac{\partial \tilde{H}}{\partial w_4} - \frac{\partial \tilde{H}}{\partial w_5} (z_2 + \alpha z_4) \right) = 0$$

$$\Rightarrow \frac{\partial \tilde{H}}{\partial w_0} \alpha + \frac{\partial \tilde{H}}{\partial w_1} (z_1 + \alpha z_3) + \frac{\partial \tilde{H}}{\partial w_2} (z_2 + \alpha z_4) = 0$$

$$\Rightarrow \alpha = \frac{-\frac{\partial \tilde{H}}{\partial w_1} z_1 - \frac{\partial \tilde{H}}{\partial w_2} z_2}{\frac{\partial \tilde{H}}{\partial w_0} + z_3 \frac{\partial \tilde{H}}{\partial w_1} + \frac{\partial \tilde{H}}{\partial w_2} z_4} \quad \text{holomorphic in } x \Rightarrow$$