$\Rightarrow$ σ_L has simple zero i.e $a_0 + \omega_1 a_1 + \omega_2 a_2 = 0$. //

In general, the fiber of a power H^d of H over a point X corresponds to the space of d-linear forms on the line $\{\lambda X\} \subset \mathbb{C}^{n+1}$, and so as before any d-linear form F on $\mathbb{C}^{n+1}$ induces by restriction a global section

$$\sigma_F(X) = F|_{\{\lambda X\}} \quad \text{of} \quad H^d.$$

Γ $d = 2$. $H^2 = H \otimes H$ whose fiber at $[X]$ is the tensor product of two spaces of linear functionals on the line $\{\lambda X\}$.

$$\Rightarrow (H \otimes H)_{[X]} = \{ f \otimes g \}. \quad g, f : \overbrace{\{\lambda X\}}^{=V} \longrightarrow \mathbb{C}.$$

$$\begin{tikzcd} f \otimes g : V \otimes V \arrow[r] & \mathbb{C} \\ V \times V \arrow[u, "\tau"] \arrow[ur, "f \times g"'] \end{tikzcd}$$

$\Rightarrow$ $f \otimes g$ is a <u>bilinear functional</u> on $V \otimes V$.
(2-linear functional)

In general, the fiber of H^d is the space of d-linear functionals. //

Since we are restricting F to one line at a time we see that $\sigma_F = 0$ if F is alternating in any two factors, and so we have a map

$$\mathrm{Sym}^d(\mathbb{C}^{n+1\,*}) \longrightarrow H^0(\mathbb{P}^n, \mathcal{O}(H^d))$$