$\Rightarrow i_{|\mathcal{O}(2)|} \circ \varphi : \mathbb{P}^2 \longrightarrow \mathbb{P}^5$

$[(X_0, X_1, X_2)] \longmapsto [(X_1^2X_2^2,\ X_0^2X_2^2,\ X_0^2X_1^2,\ X_0X_1X_2^2,\ X_0X_1^2X_2,\ X_0^2X_1X_2)]$.

$H^0(\mathbb{P}^2, \mathcal{J}_{P_1}\otimes\mathcal{J}_{P_2}\otimes\mathcal{J}_{P_3}(2))$ is the space of cubic curves passing $P_1, P_2, \&\ P_3$.

$\Rightarrow$ If $G \in H^0(\mathbb{P}^2, \mathcal{J}_{P_1}\otimes\mathcal{J}_{P_2}\otimes\mathcal{J}_{P_3}(2))$,

$G(X_0, X_1, X_2)$ is not of type $X_0^2 + X_0(\quad) + \cdots$ or $X_1^2 + X_1(\quad)+\cdots$, or $X_2^2 + X_2(\quad)+\cdots$

$\Rightarrow$ G is expressed as a linear combination of X_1X_2, X_0X_2, X_0X_1. $\Rightarrow$ $|\mathcal{J}_{P_1}\otimes\mathcal{J}_{P_2}\otimes\mathcal{J}_{P_3}(2)| = 2$.

Here we used the following:

In case P_1, P_2, P_3 are noncollinear and arbitrary.

$\Rightarrow$ $P_1 = a_0X_0 + a_1X_1 + a_2X_2 = Z_0$

$P_2 = b_0X_0 + b_1X_1 + b_2X_2 = Z_1$

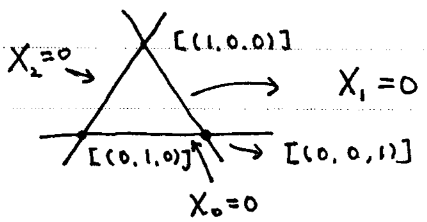
$P_3 = c_0X_0 + c_1X_1 + c_2X_2 = Z_2$

$\Rightarrow$ X_0^2, X_1^2, X_0X_1, are linearly independent, and $X_0^2 = f_0(Z_0, Z_1, Z_2)$, $X_1^2 = f_1(Z_0, Z_1, Z_2)$, & $X_0X_1 = f_2(Z_0, Z_1, Z_2)$ are linearly independent. $\Rightarrow$ Since $|\mathcal{J}_{[(1,0,0)]}\otimes\mathcal{J}_{[(0,1,0)]}\otimes\mathcal{J}_{[(0,0,1)]}(2)| = 2$, $|\mathcal{J}_{P_1}\otimes\mathcal{J}_{P_2}\otimes\mathcal{J}_{P_3}(2)| = 2$.

Thus the transform "φ" of $\mathbb{P}^2$ is given by the linear system $|\mathcal{J}_{P_1}\otimes\mathcal{J}_{P_2}\otimes\mathcal{J}_{P_3}(2)|$.

Let $G \in H^0(\mathbb{P}^2, \mathcal{J}_{P_1}^2\otimes\mathcal{J}_{P_2}^2\otimes\mathcal{J}_{P_3}^2(2))$.

Consider $H(X_0, X_1, X_2) = X_0^3X_1$.



$\Rightarrow$ H is represented

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