

We may take homogeneous coordinates $X = [X_0, X_1, \dots, X_n]$ on \mathbb{P}^n such that

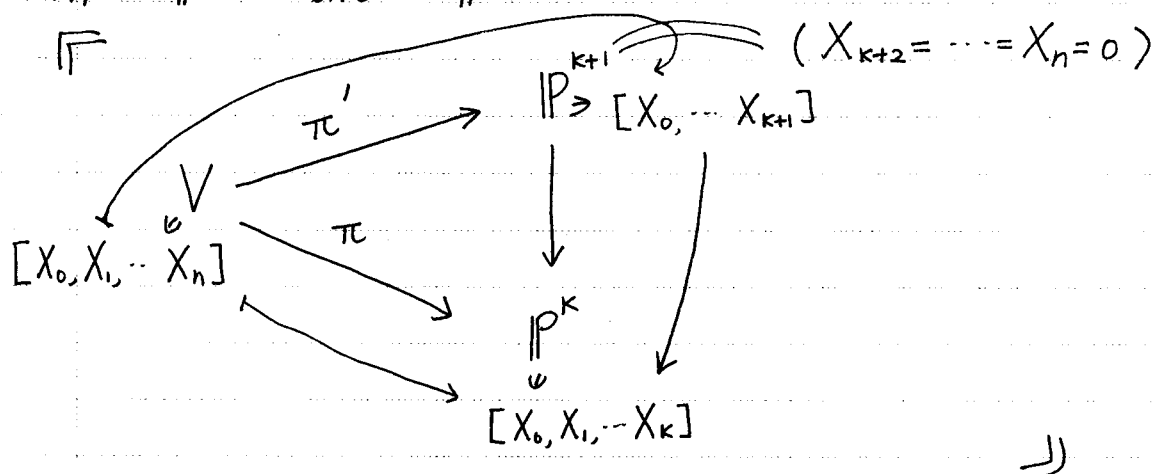
$$\mathbb{P}^{n-k-1} = (X_0 = \dots = X_k = 0), \quad \mathbb{P}^k = (X_{k+1} = \dots = X_n = 0),$$

$$\mathbb{P}^{n-k-2} = (X_0 = \dots = X_{k+1} = 0), \quad \mathbb{P}^{k+1} = (X_{k+2} = \dots = X_n = 0);$$

in terms of these coordinates, π is given as before and

$$\pi'([X_0, X_1, \dots, X_n]) = [X_0, X_1, \dots, X_{k+1}]$$

so that π is just the composition of π' with projection from the point $(X_0 = \dots = X_k = X_{k+2} = \dots = X_n = 0)$ in \mathbb{P}^{k+1} onto \mathbb{P}^k .



Note that, \mathbb{P}^{n-k-2} having been chosen generically, the map π' will be one-to-one over an open set in its image: this will be the case as long as for some point p in V the $(n-k-1)$ -plane \mathbb{P}^{n-k-2}, p meets V only at p — but for any p in V , the generic $(n-k-1)$ -plane through p meets V only at p .