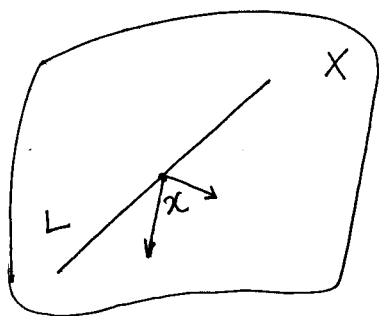


We can identify one of the rulings on the quadric $Q = \tilde{f}_L(F)$: first, for every $x \in L$, the image under \tilde{f}_L of $\pi^{-1}(x) \subset \tilde{X}_L$ is just the line $V_3 \cap T_x(X)$ lying on Q .

\mathbb{P}



$$\begin{aligned} \tilde{f}_L(\pi^{-1}(x)) &\subset \tilde{f}_L(\pi^{-1}(L)) = \tilde{f}_L(F) = Q \\ \Rightarrow \tilde{f}_L(\pi^{-1}(x)) &= T_x(X) \cap V_3 \subset Q \\ \Rightarrow T_x(X) \cap V_3 &\text{ is a line in } Q \end{aligned}$$

\Rightarrow

Note that since L is nonspecial, for $x \neq x' \in L$, $T_x(X)$ meets $T_{x'}(X)$ only in L , so that the corresponding lines $\tilde{f}_L(\pi^{-1}(x))$ and $\tilde{f}_L(\pi^{-1}(x'))$ are disjoint; thus Q is a smooth quadric.

\mathbb{P} Suppose $T_{x'}(X) \cap T_x(X) \not\supseteq L$, i.e., $T_x(X) \cap T_{x'}(X)$ is two-dimensional. \Rightarrow By the observations on P792,

$T_x(X) \cap T_{x'}(X)$ is 2-dim for all $x \neq x' \in L \Rightarrow L$ is special. \Rightarrow Since L is not special, $T_x(X) \cap T_{x'}(X) = L$.
 $\tilde{f}_L(\pi^{-1}(x)) \cap \tilde{f}_L(\pi^{-1}(x')) = (V_3 \cap T_x(X)) \cap (V_3 \cap T_{x'}(X))$
 $= V_3 \cap (T_x(X) \cap T_{x'}(X)) = V_3 \cap L = \emptyset$

If Q is not smooth, then $Q = (X_0^2 + X_1^2 + X_2^2 = 0)$
 or $Q = (X_0^2 + X_1^2 = 0) = \text{Union of two hyperplanes.}^{\text{or } Q = (X_0^2 = 0)}$
 $(X_0^2 + X_1^2 + X_2^2 = 0) = \text{Union of lines passing the singular}$