

$$\begin{array}{ccc}
 \mathbb{F}_{(p, \Lambda_n)} \in I \subset \mathbb{F} \times G(n+1, 2n+3) & & \\
 \downarrow & \downarrow \pi_2 & \\
 \Lambda_n \in \Sigma'_n \subset G(n+1, 2n+3) & \text{and } \Lambda_n \cong \mathbb{P}^n & \quad \quad \quad \Downarrow
 \end{array}$$

On the other hand, consider the fibers of the projection $\pi_1: I \longrightarrow \mathbb{F}$, that is, the n -planes on \mathbb{F} passing through a point p .

$$\begin{array}{ccc}
 \mathbb{F} & I \subset \mathbb{F} \times G(n+1, 2n+3) & \\
 & \downarrow \pi_1 & \Rightarrow \pi_1^{-1}(p) = \{ (p, \Lambda) \mid p \in \Lambda, \\
 p \in \mathbb{F} & & \Lambda \text{ } n\text{-plane on } \mathbb{F} \} \quad \Downarrow
 \end{array}$$

Clearly, any such n -plane Λ lies in the tangent plane to \mathbb{F} at p , and hence in the intersection $\mathbb{F} \cap T_p(\mathbb{F})$.

\mathbb{F} Quite clear. Since $\Lambda \subset \mathbb{F}$, $T_p(\mathbb{F}) \supset \Lambda$, and $\Lambda \subset \mathbb{F} \cap T_p(\mathbb{F})$. \(\Downarrow\)

But we have seen that $\mathbb{F} \cap T_p(\mathbb{F})$ is just the cone through p over a smooth quadric $\tilde{\mathbb{F}}_{2n-1} \subset \mathbb{P}^{2n}$, and so the n -planes in \mathbb{F} through p are exactly the n -planes spanned by p together with $(n-1)$ -planes in $\tilde{\mathbb{F}}$.