$c_2 = 2 \Rightarrow \sigma_1 \cdot \sigma_{2,1} = \sigma_{2,2}$

Note that $\underset{1}{\overset{\|}{a_1}} = 2 - b_2 = 2-1$ and $a_2 = 0 = 2 - b_1 = 0$.

$\Rightarrow$ By the result on P198, $\sigma_1 \cdot \sigma_{2,1} = 1$.

⑦ $\sigma_2 \cdot \sigma_{1,1} = ?$

$a = 2, 0 \quad b = 1, 1 \Rightarrow c_1 + c_2 = 4 \quad 1 \le c_1 \le 2$

(i) $c_1 = 1, \Rightarrow c_2 = 3 \Rightarrow *$

(ii) $c_1 = 2 \Rightarrow c_2 = 2 \Rightarrow \underset{1}{\overset{\|}{b_2}} \le \underset{2}{\overset{\|}{c_2}} \le b_1 = 1 \quad *$

$\Rightarrow \sigma_2 \cdot \sigma_{1,1} = 0$

In a different way, we can see as follows.

codim of σ_2 and $\sigma_{1,1} = 2$.

But $\underset{2}{\overset{\|}{a_1}} \ne 2 - b_2 = 2-1=1 \quad \underset{0}{\overset{\|}{a_2}} \ne 2 - b_1 = 1$

$\Rightarrow$ By the result on P197 & P198, $\sigma_2 \cdot \sigma_{1,1} = 0$.

Note ! $\sigma_{2,2} = \{ \Lambda ; \dim(\Lambda \cap V_{2+i-a_i}) \ge i \}$

$\Rightarrow \dim(\Lambda \cap V_1) \ge 1$ and $\dim(\Lambda \cap V_2) \ge 2$

$\Rightarrow \Lambda = V_2 \Rightarrow \sigma_{2,2}$ is a point.

$\Rightarrow \sigma_1 \cdot \sigma_{2,1} = 1$

We have seen in the preceding discussion that the variety $V(F)$ of lines lying on a smooth quadric $F \subset \mathbb{P}^3$ is homologous to $4\sigma_{2,1}$: consider now the variety $V_0(L)$ of lines in $\mathbb{P}^3$ lying on some quadric of a generic pencil $L = \{F_\lambda\}$ of quadrics.