Let $x_i = n-k+i-a_i$. $y_i = n-i+1-b_{k-i+1}$

Since $x_1+y_1 \le n$. $x_i < x_{i+1}$. $y_i > y_{i+1}$.

we can find vector spaces. V_{x_1} $W_{y_1} \subset \mathbb{C}^n$ s.t

$$V_{x_1} \cap W_{y_1} = (0).$$

Choose any subspace $W_{y_2} \subset W_{y_1}$ since $y_2 < y_1$.

$\Rightarrow$ $V_{x_1} \cap W_{y_2} = (0)$. Always we can find V_{x_2} s.t

$V_{x_2} \supset V_{x_1}$ and $V_{x_2} \cap W_{y_2} = (0)$. since $x_2+y_2 \le n$.

Continue this procedure, then we get flags V. W

s.t V_{x_i} and W_{y_i} intersect only at the origin.

" $V_{x_1} \cap W_{y_2} = (0)$ $W_{y_2} = \langle w_1 \cdots w_{y_2} \rangle$, $w_1 \cdots w_{y_2}$ lin. inde.

$\Rightarrow \exists$ $v_1 \cdots v_{x_1} \cdots v_{n-y_2}$ s.t they are linear indep- and $\langle v_1 \cdots v_{x_1} \rangle = V_{x_1}$ $\{v_1 \cdots v_{x_1} \cdots v_{n-y_2}, w_1 \cdots w_{y_2}\}$ is a basis for $\mathbb{C}^n$. $\Rightarrow$ Choose $v_1, v_2 \cdots v_{x_1} \cdots v_{x_2}$. so that $\langle v_1 \cdots v_{x_2} \rangle = V_{x_2}$ since $x_2 \le n-y_2$. "

Consequently the cycles $\sigma_a(V)$ and $\sigma_b(V')$ can be made disjoint, i.e.,

$$\#(\sigma_a \cdot \sigma_b) = 0 \quad \text{unless } a_i + b_{k-i+1} \le n-k, \text{ for all } i.$$

「 If $a_i + b_{k-i+1} > n-k$ for some i, by the computation on P197, since $x_i + y_i$

$= n-k+i-a_i + n-i+1-b_{k-i+1} \le n$, we can find

V_{x_i}. V'_{y_i} s.t $V_{x_i} \cap V'_{y_i} = (0)$.