3·penna − 2 gomma ~~$\neq$~~ corrisponde a $\bar f$

$\bar f : \{\text{penna}, \text{gomma}\} \to (\mathbb{Z}, +)$

$\text{penna} \mapsto 3$

$\text{gomma} \mapsto -2$

Identifico penna con f_{penna} : $\text{penna} \mapsto 1$, $\text{gomma} \mapsto 0$

gomma con f_{gomma} : $\text{penna} \mapsto 0$, $\text{gomma} \mapsto 1$

$\bar f = 3 f_{\text{penna}} - 2 f_{\text{gomma}}$

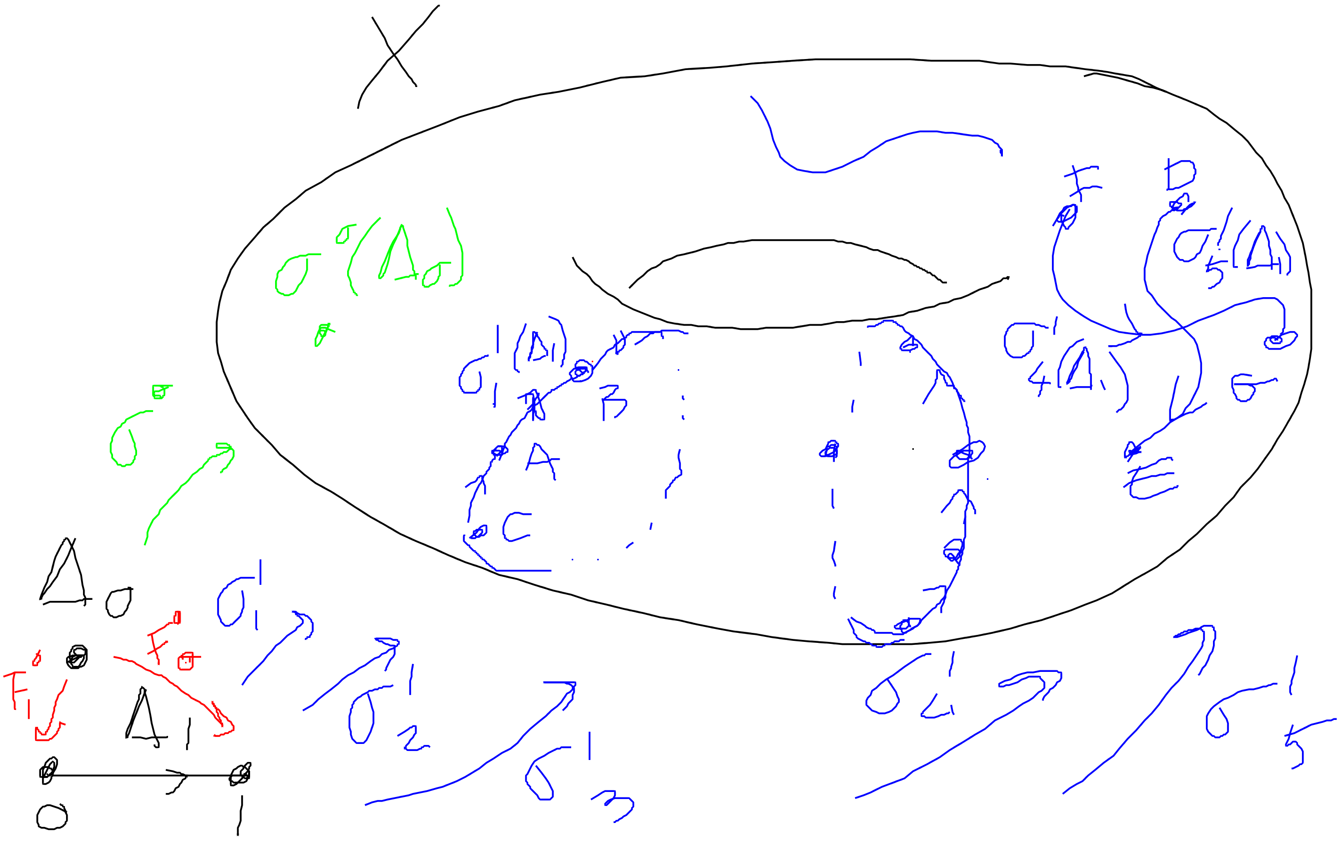
$\bar g$ corrispondente a $-\text{penna} + 5\,\text{gomma}$

$$\bar{g} = -f_{penna} + 5 f_{gamma}$$

$$\bar{f} + \bar{g} = (3-1) f_{penna} + (-2+5) f_{gamma}$$

$$\left(3\,penna - 2\,gamma\right) + \left(-\,penna + 5\,gamma\right) =$$

$$= 2\,penna + 3\,gamma$$



$$\partial(\sigma_1^1+\sigma_2^1+\sigma_3^1) = \cancel{B}-\cancel{A}+\cancel{C}-\cancel{B}+\cancel{A}-\cancel{C} = 0$$

$$\partial(\sigma_4^1+\sigma_5^1) = E-D+G-F \neq 0$$

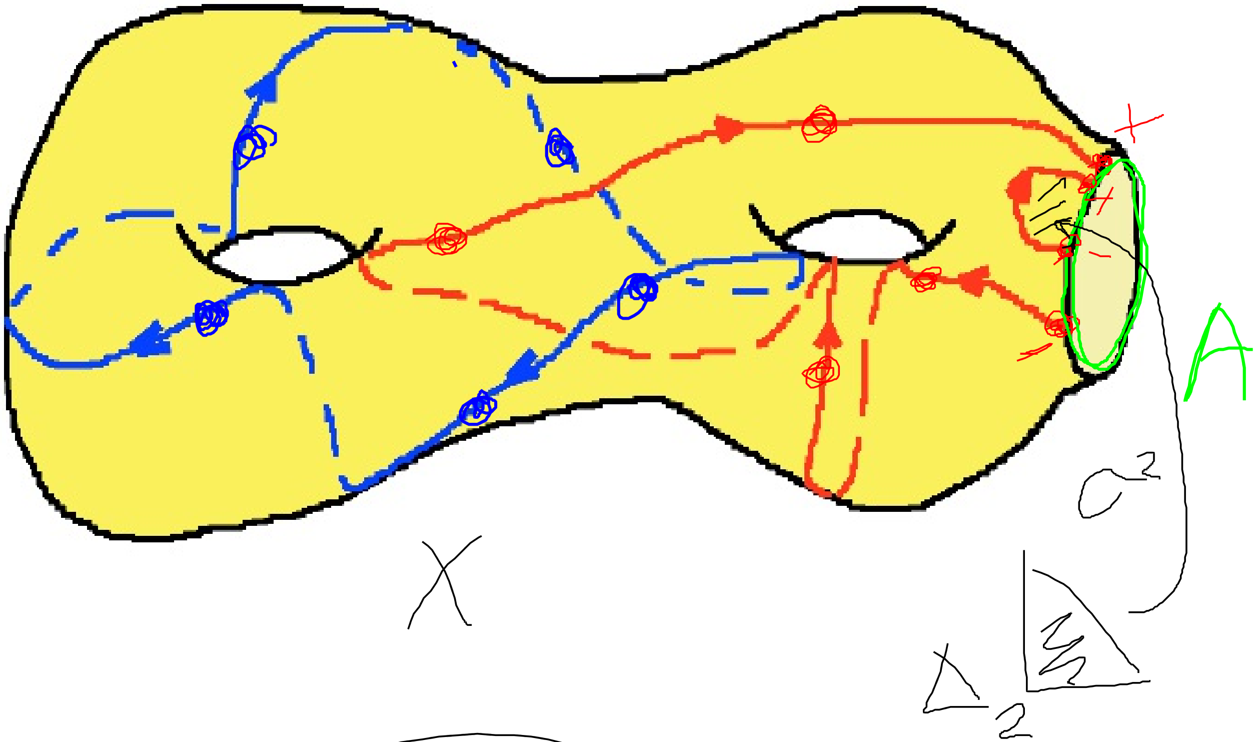
$$= \sum_{s<r} (-1)^{r+s}\sigma F_r^{k-1} F_s^{k-2} + \sum_{r\le s} (-1)^{r+s}\sigma F_r^{k-1} F_s^{k-2} =$$

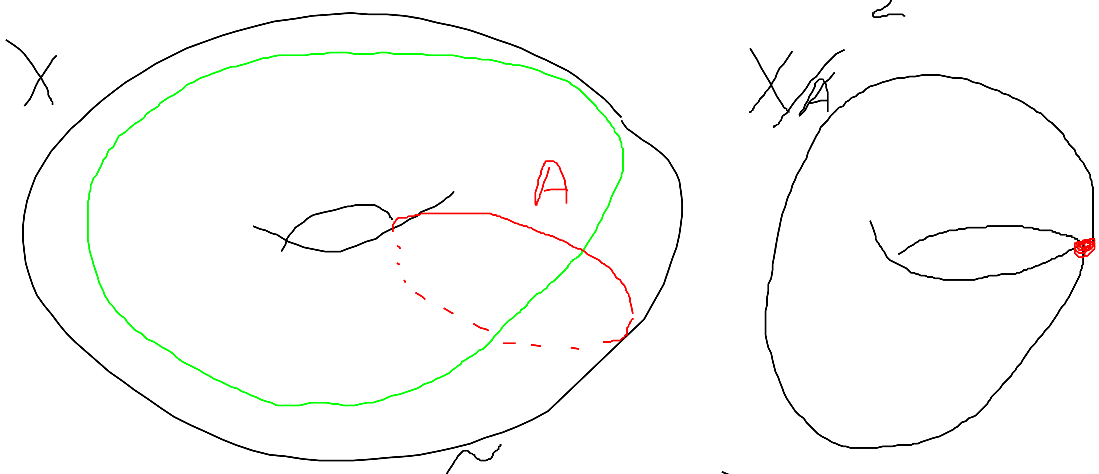
$$= \sum_{s<r} (-1)^{r+s}\sigma F_s^{k-1} F_{r-1}^{k-2} + \sum_{r\le s} (-1)^{r+s}\sigma F_r^{k-1} F_s^{k-2} = 0$$

$$m = s$$

$$n = r-1 \qquad r = n+1$$

$$\sum_{\substack{\cancel{m<n+1} \\ m \le n}} (-1)^{m+n+1}\sigma F_m^{k-1} F_n^{k-2}$$





$$H_k(X,A) \cong \tilde{H}_k(X/A)$$

(sotto opportune ipotesi)