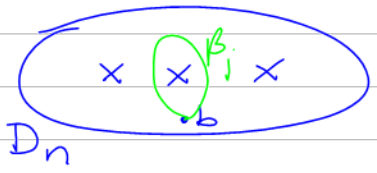
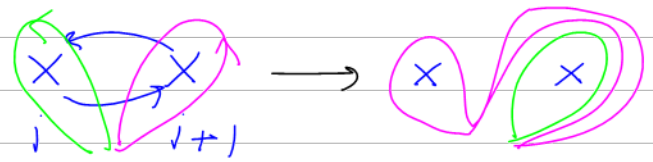


$$H_1(\widetilde{D}_n) \longrightarrow H_1(\widetilde{D}_n, \widetilde{b}) \xrightarrow{\partial} H_0(\widetilde{b}) = \mathbb{Z}[t^{\pm 1}]$$

$$\widetilde{\gamma}_i \longrightarrow \widetilde{\beta}_{i+1} - \widetilde{\beta}_i \qquad \widetilde{\beta}_i \longrightarrow t-1$$

$$\sum_{i<j} \widetilde{\gamma}_j \longleftarrow \widetilde{\beta}_j$$

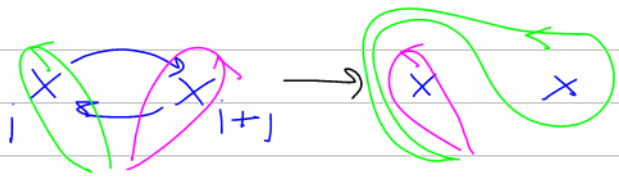
σ_i:



$$\widetilde{\beta}_j \longmapsto \widetilde{\beta}_{j+1}$$

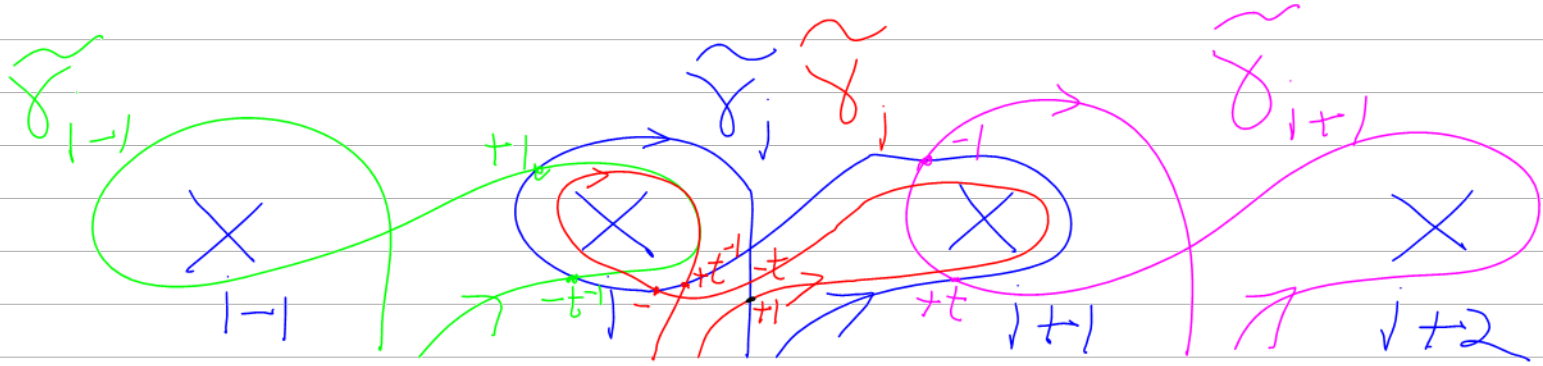
$$\widetilde{\beta}_{i+1} \longmapsto t\widetilde{\beta}_i + (1-t)\widetilde{\beta}_{i+1}$$

σ_i^{-1}:



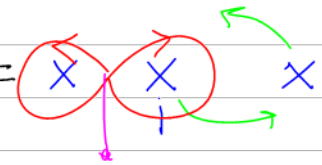
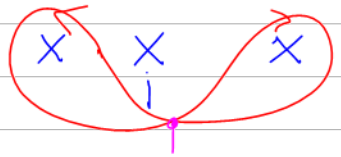
$$\widetilde{\beta}_j \longmapsto t^{-1}\widetilde{\beta}_{i+1} + (1-t^{-1})\beta_j$$

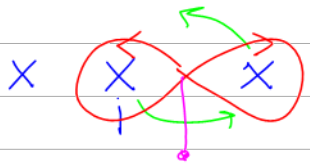
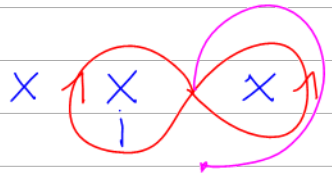
$$\widetilde{\beta}_{i+1} \longmapsto \widetilde{\beta}_i$$

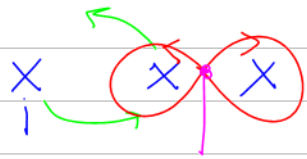
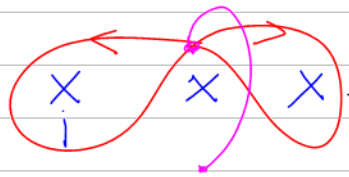


$$\xi(\widetilde{\gamma}_i, \widetilde{\gamma}_{i-1}) = 1 - t^{-1} \qquad \xi(\widetilde{\gamma}_i, \widetilde{\gamma}_{i+1}) = t - 1$$

$$\xi(\widetilde{\gamma}_j, \widetilde{\gamma}_j) = 1 - t + t^{-1} - 1$$

$\gamma_{i-1} =$  $\xrightarrow{\sigma_i}$  $= \gamma_{i-1} - t\gamma_i$

$\gamma_i =$  $\xrightarrow{\sigma_i}$  $=$

$\gamma_{i+1} =$  $\xrightarrow{\sigma_i}$  $=$