

Lecture 18: main exercises

Exercise 18.1. For each n , find a braid β on n strands such that the cluster structure on $X(\beta)$ has $\binom{n}{2}$ frozen variables. *Hint:* see the next exercise

Exercise 18.2. Let $\beta = 112211$. Recall the torus T that is the quotient of the torus of diagonal matrices in $\mathrm{GL}(3)$ by the torus of scalar matrices. Show that T acts freely on $X(\beta)$, but neither β nor βw_0 project to a 3-cycle. For a description on when T acts freely on $X(\beta)$, see 6.3 in <https://arxiv.org/pdf/2402.16970>.