

Overview: upper bound methods

- Construct an algorithm for computing rank in the free group.
- Adapt the algorithm for braid groups.
- Test its effectiveness on braids in the KnotInfo database.

Rank in the free group?

- A **band** in the free group is a conjugate of a generator. Rank rk_F is defined similarly.
- rk_F gives upper bound on rk
- Suggests how to approach computational questions.
- Identify free words with positive band presentations [Orekov, 2004].