Remarks on the braid index of singular links

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During the talk, we consider singular links in the 3-space up to a suitable equivalence relation defined by isotopy of 3-space. It is well known that every such link L can be represented as the closer $\hat{b}$ of a singular braid b. The minimal possible number k of strands in a braid for such representation is called the braid index of L.

There are known different methods of estimating the braid index of classical links: the Morton-Frank-Williams inequalities (MFW-inequalities) or their cable versions (in terms of HOMFLYPT polynomial); the KR-MFW-inequalities (in terms of Khowanov-Rozansky homology), combinatorial methods *etc.*

We address a question of whether the methods mentioned above can be used for estimating the braid index of singular links. In this relation, we consider the extended versions of HOMFLYPT polynomial for singular links, described by L. Paris and L. Rabenda, and L. H. Kauffman and P. Vogel. We also analyze some combinatorial tools, such as graphs associated with diagrams of singular links. The question of whether computing the braid index of a singular link L can be reduced (may be partially) to estimating the stabilized braid index for a family of classical links associated with L is also discussed.

References

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