Grigsby in Iowa

March 12, 2016 9:33 AM

B_n: The braid group: mapping classes

$\sigma \in \mathrm{Diff}^+(D, \Delta)$ / isotopy

$\hat{\sigma}$: it's closure $\subset D \times S^1 = A \times I$

Notions of positivity of braids: (important in contact/symp. 9 wom)

0. Positivity: all crossings are positive.

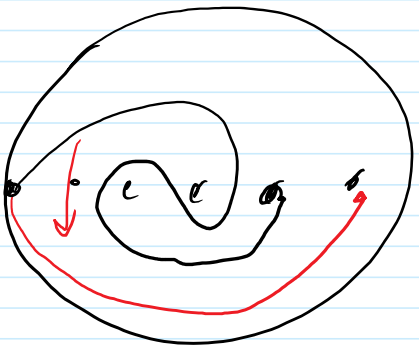
1. Quasi-positive: The braid is a product of conjugates of positive braids.

Rudolph

Boileau

the closure of the braid is the intersection of $[f(z,w)=0]$ with the 3-sphere.

2. σ is right veering (RV)



arcs are sent to the right.

Birman-Hilden: ... related to tightness of contact structures on double branch covers.

$QP \subseteq \cdots\cdots P? \cdots\cdots \subseteq RV$

$\Downarrow$ tight $=$ tight $\Uparrow$ tight

$$LCS^3 \xrightarrow{\text{Khovanov}} (\mathcal{C}, \partial) \xrightarrow{\text{homology}} \underset{\text{Link Inv.}}{Kh(L)}$$

$$\xrightarrow{Lee} (\mathcal{C}, \partial + \Phi) \xrightarrow{\text{homology}} Lee(L) \cong \mathbb{F}^{2^\ell}$$

$\ell = \#$ of components.

Lee identifies a basis. . . .

Rasmussen: $\mathcal{C}^{Lee}$ is a $\mathbb{Z}$-filtered complex

. . . . the Rasmussen invt. s.