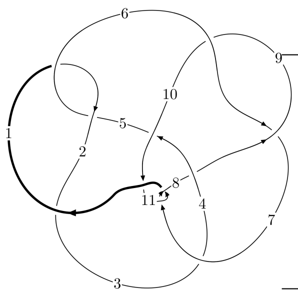
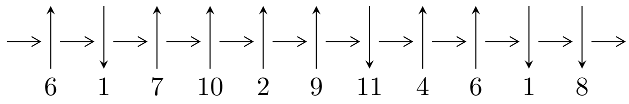
$11n_{50}$ ($K11n_{50}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$1,6 \xrightarrow[c_1]{} 2 \xrightarrow[c_2]{} 3 \xrightarrow[c_5]{} 5,8 \xrightarrow[c_{11}]{} 11 \xrightarrow[c_7]{} 7 \xrightarrow[c_{10}]{} 10 \xrightarrow[c_4]{} 4 \xrightarrow[c_9]{} 9 \twoheadrightarrow c_3, c_6, c_8$

Ideals for irreducible components[2] of $X_{\mathbf{par}}$

$I_1^u = \langle 37910139708041u^{19} - 201150163381549u^{18} + \cdots + 6011452100077376b - 7292662285169845,$
$\quad - 4.50097 \times 10^{15}u^{19} - 1.28986 \times 10^{16}u^{18} + \cdots + 3.00573 \times 10^{15}a - 7.74836 \times 10^{15},\ u^{20} + 3u^{19} + \cdots + 6u -$
$I_2^u = \langle -au + b - u - 1,\ a^2 - 2au - u,\ u^2 + u + 1\rangle$
$I_3^u = \langle au + b + a - u - 1,\ a^2 - 2a + 2,\ u^2 + u + 1\rangle$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 28 representations.

[1]The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

[2]All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I.

$\boldsymbol{I_1^u = \langle 3.79\times 10^{13}u^{19} - 2.01\times 10^{14}u^{18} + \cdots + 6.01\times 10^{15}b - 7.29\times 10^{15},\ -4.50\times 10^{15}u^{19} - 1.29\times 10^{16}u^{18} + \cdots + 3.01\times 10^{15}a - 7.75\times 10^{15},\ u^{20} + 3u^{19} + \cdots + 6u + 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^2+1 \\ -u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ u^3+u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1.49747u^{19} + 4.29134u^{18} + \cdots + 24.6486u + 2.57787 \\ -0.00630632u^{19} + 0.0334612u^{18} + \cdots + 3.09219u + 1.21313 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -1.01016u^{19} - 2.81974u^{18} + \cdots - 13.1176u + 2.12976 \\ -0.147188u^{19} - 0.390662u^{18} + \cdots - 5.99436u - 1.23581 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1.20441u^{19} + 3.56367u^{18} + \cdots + 29.2504u + 7.54341 \\ -0.127524u^{19} - 0.273202u^{18} + \cdots - 3.26181u + 0.411467 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -1.15735u^{19} - 3.21040u^{18} + \cdots - 19.1120u + 0.893945 \\ -0.147188u^{19} - 0.390662u^{18} + \cdots - 5.99436u - 1.23581 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -1.07688u^{19} - 3.29047u^{18} + \cdots - 25.9886u - 7.95487 \\ 0.115875u^{19} + 0.263182u^{18} + \cdots + 4.66274u - 0.262787 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -1.15735u^{19} - 3.21040u^{18} + \cdots - 19.1120u + 0.893945 \\ -0.201060u^{19} - 0.575464u^{18} + \cdots - 6.40693u - 1.49747 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -1.15735u^{19} - 3.21040u^{18} + \cdots - 19.1120u + 0.893945 \\ -0.201060u^{19} - 0.575464u^{18} + \cdots - 6.40693u - 1.49747 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= \frac{4709825960466509}{3005726050038688}u^{19} + \frac{3061022262562929}{751431512509672}u^{18} + \cdots + \frac{627320126092444425}{3005726050038688}u + \frac{4116636408312339}{751431512509672}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{20} - 3u^{19} + \cdots - 6u + 1$
c_2	$u^{20} + 33u^{19} + \cdots - 6u + 1$
c_3	$u^{20} + u^{19} + \cdots + 1264u + 517$
c_4	$u^{20} + u^{19} + \cdots + 1876u + 647$
c_6, c_9	$u^{20} + u^{19} + \cdots + 12u + 4$
c_7, c_{11}	$u^{20} + u^{19} + \cdots + 6u + 1$
c_8	$u^{20} + u^{19} + \cdots + 4u + 1$
c_{10}	$u^{20} + 15u^{19} + \cdots + 22u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{20} + 33y^{19} + \cdots - 6y + 1$
c_2	$y^{20} - 87y^{19} + \cdots + 770y + 1$
c_3	$y^{20} + 27y^{19} + \cdots + 842544y + 267289$
c_4	$y^{20} + 55y^{19} + \cdots - 892556y + 418609$
c_6, c_9	$y^{20} + 33y^{19} + \cdots - 120y + 16$
c_7, c_{11}	$y^{20} - 15y^{19} + \cdots - 22y + 1$
c_8	$y^{20} - 3y^{19} + \cdots - 6y + 1$
c_{10}	$y^{20} - 15y^{19} + \cdots + 50y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.562478+0.702926I$ $a=-0.164935+1.014010I$ $b=-0.932716-0.491902I$	$0.10443-4.15417I$	$5.96079+7.41844I$
$u=-0.562478-0.702926I$ $a=-0.164935-1.014010I$ $b=-0.932716+0.491902I$	$0.10443+4.15417I$	$5.96079-7.41844I$
$u=-0.345261+0.774594I$ $a=-0.178688+1.067020I$ $b=\ \ 0.262517+0.119217I$	$-1.78458-2.08707I$	$-0.67504+3.91538I$
$u=-0.345261-0.774594I$ $a=-0.178688-1.067020I$ $b=\ \ 0.262517-0.119217I$	$-1.78458+2.08707I$	$-0.67504-3.91538I$
$u=-0.546407+0.261165I$ $a=-0.016518-0.458675I$ $b=-0.503419+0.405661I$	$1.204440-0.232928I$	$9.01931+0.79005I$
$u=-0.546407-0.261165I$ $a=-0.016518+0.458675I$ $b=-0.503419-0.405661I$	$1.204440+0.232928I$	$9.01931-0.79005I$
$u=\ \ 0.55309+1.41617I$ $a=\ \ 0.152667-0.289034I$ $b=-1.369770-0.179262I$	$-7.00299-3.90150I$	$-2.54860+3.27736I$
$u=\ \ 0.55309-1.41617I$ $a=\ \ 0.152667+0.289034I$ $b=-1.369770+0.179262I$	$-7.00299+3.90150I$	$-2.54860-3.27736I$
$u=\ \ 0.368558+0.047969I$ $a=-1.78216+1.81771I$ $b=\ \ 1.053190-0.370537I$	$-1.82190+1.34830I$	$-1.59816-0.61194I$
$u=\ \ 0.368558-0.047969I$ $a=-1.78216-1.81771I$ $b=\ \ 1.053190+0.370537I$	$-1.82190-1.34830I$	$-1.59816+0.61194I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.140514+0.165365I$ $a=-1.96129+4.14993I$ $b=\ \ 0.715874+0.509667I$	$-1.42072-2.15124I$	$1.64791+3.40317I$
$u=-0.140514-0.165365I$ $a=-1.96129-4.14993I$ $b=\ \ 0.715874-0.509667I$	$-1.42072+2.15124I$	$1.64791-3.40317I$
$u=-0.93727+1.53815I$ $a=-0.097983-0.641269I$ $b=\ \ 1.281060+0.067311I$	$-5.23226-2.45917I$	$-1.69714+1.89268I$
$u=-0.93727-1.53815I$ $a=-0.097983+0.641269I$ $b=\ \ 1.281060-0.067311I$	$-5.23226+2.45917I$	$-1.69714-1.89268I$
$u=-0.00083+2.05851I$ $a=-0.027063+1.246070I$ $b=\ \ 0.076044-1.204780I$	$-13.59470-3.72129I$	$0.72655+1.99965I$
$u=-0.00083-2.05851I$ $a=-0.027063-1.246070I$ $b=\ \ 0.076044+1.204780I$	$-13.59470+3.72129I$	$0.72655-1.99965I$
$u=\ \ 0.48389+2.08874I$ $a=\ \ 0.342044-1.052760I$ $b=-1.48289+0.54439I$	$-18.5347+2.5424I$	$-1.82827+0.I$
$u=\ \ 0.48389-2.08874I$ $a=\ \ 0.342044+1.052760I$ $b=-1.48289-0.54439I$	$-18.5347-2.5424I$	$-1.82827+0.I$
$u=-0.37279+2.18713I$ $a=-0.266075-1.115660I$ $b=\ \ 1.40011+0.62778I$	$-17.7144-10.2068I$	$0.+4.81283I$
$u=-0.37279-2.18713I$ $a=-0.266075+1.115660I$ $b=\ \ 1.40011-0.62778I$	$-17.7144+10.2068I$	$0.-4.81283I$

II. $I_2^u = \langle -au + b - u - 1,\ a^2 - 2au - u,\ u^2 + u + 1 \rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ u+1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ u+1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ u+1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} a \\ au+u+1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} au+a+u+2 \\ -u-1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u+1 \\ au+a+1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} au+a+1 \\ -u-1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -au-a-u-2 \\ -a+3u+2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} au+a+1 \\ -au-2u-2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} au+a+1 \\ -au-2u-2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 8u + 4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u^2+u+1)^2$
c_3	$u^4-2u^3+5u^2-4u+1$
c_4	$u^4+4u^3+5u^2+2u+1$
c_5, c_{10}	$(u^2-u+1)^2$
c_6, c_9	$(u^2+1)^2$
c_7, c_8, c_{11}	u^4-u^2+1

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5 c_{10}	$(y^2+y+1)^2$
c_3	$y^4+6y^3+11y^2-6y+1$
c_4	$y^4-6y^3+11y^2+6y+1$
c_6, c_9	$(y+1)^4$
c_7, c_8, c_{11}	$(y^2-y+1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.500000+0.866025I$ $a=-0.500000-0.133975I$ $b=\ \ 0.866025+0.500000I$	$-1.64493-4.05977I$	$0.+6.92820I$
$u=-0.500000+0.866025I$ $a=-0.50000+1.86603I$ $b=-0.866025-0.500000I$	$-1.64493-4.05977I$	$0.+6.92820I$
$u=-0.500000-0.866025I$ $a=-0.500000+0.133975I$ $b=\ \ 0.866025-0.500000I$	$-1.64493+4.05977I$	$0.-6.92820I$
$u=-0.500000-0.866025I$ $a=-0.50000-1.86603I$ $b=-0.866025+0.500000I$	$-1.64493+4.05977I$	$0.-6.92820I$

III. $\boldsymbol{I_3^u = \langle au + b + a - u - 1,\ a^2 - 2a + 2,\ u^2 + u + 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1 \\ u+1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u \\ u+1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u \\ u+1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} a \\ -au - a + u + 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} au + a - 2u - 1 \\ u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u+1 \\ -au + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} au + a - u - 1 \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} au - 2u - 1 \\ au + a - 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} au + a - u - 1 \\ -au + 2u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} au + a - u - 1 \\ -au + 2u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u^2+u+1)^2$
c_3, c_4	$u^4-2u^3+2u^2+2u+1$
c_5, c_{10}	$(u^2-u+1)^2$
c_6, c_9	$(u^2+1)^2$
c_7, c_8, c_{11}	u^4-u^2+1

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5 c_{10}	$(y^2+y+1)^2$
c_3, c_4	y^4+14y^2+1
c_6, c_9	$(y+1)^4$
c_7, c_8, c_{11}	$(y^2-y+1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = 1.00000 + 1.00000I$ $b = 0.866025 - 0.500000I$	-1.64493	0
$u = -0.500000 + 0.866025I$ $a = 1.00000 - 1.00000I$ $b = -0.866025 + 0.500000I$	-1.64493	0
$u = -0.500000 - 0.866025I$ $a = 1.00000 + 1.00000I$ $b = -0.866025 - 0.500000I$	-1.64493	0
$u = -0.500000 - 0.866025I$ $a = 1.00000 - 1.00000I$ $b = 0.866025 + 0.500000I$	-1.64493	0

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2+u+1)^4)(u^{20}-3u^{19}+\cdots-6u+1)$
c_2	$((u^2+u+1)^4)(u^{20}+33u^{19}+\cdots-6u+1)$
c_3	$(u^4-2u^3+2u^2+2u+1)(u^4-2u^3+5u^2-4u+1)$ $\cdot(u^{20}+u^{19}+\cdots+1264u+517)$
c_4	$(u^4-2u^3+2u^2+2u+1)(u^4+4u^3+5u^2+2u+1)$ $\cdot(u^{20}+u^{19}+\cdots+1876u+647)$
c_5	$((u^2-u+1)^4)(u^{20}-3u^{19}+\cdots-6u+1)$
c_6, c_9	$((u^2+1)^4)(u^{20}+u^{19}+\cdots+12u+4)$
c_7, c_{11}	$((u^4-u^2+1)^2)(u^{20}+u^{19}+\cdots+6u+1)$
c_8	$((u^4-u^2+1)^2)(u^{20}+u^{19}+\cdots+4u+1)$
c_{10}	$((u^2-u+1)^4)(u^{20}+15u^{19}+\cdots+22u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$((y^2+y+1)^4)(y^{20}+33y^{19}+\cdots-6y+1)$
c_2	$((y^2+y+1)^4)(y^{20}-87y^{19}+\cdots+770y+1)$
c_3	$(y^4+14y^2+1)(y^4+6y^3+11y^2-6y+1)$ $\cdot\,(y^{20}+27y^{19}+\cdots+842544y+267289)$
c_4	$(y^4+14y^2+1)(y^4-6y^3+11y^2+6y+1)$ $\cdot\,(y^{20}+55y^{19}+\cdots-892556y+418609)$
c_6, c_9	$((y+1)^8)(y^{20}+33y^{19}+\cdots-120y+16)$
c_7, c_{11}	$((y^2-y+1)^4)(y^{20}-15y^{19}+\cdots-22y+1)$
c_8	$((y^2-y+1)^4)(y^{20}-3y^{19}+\cdots-6y+1)$
c_{10}	$((y^2+y+1)^4)(y^{20}-15y^{19}+\cdots+50y+1)$