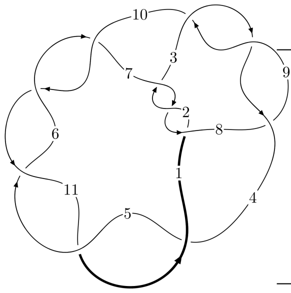
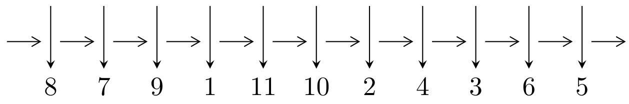
$11a_{362}$ ($K11a_{362}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle b-u,\ u^{10}-u^9+7u^8-8u^7+17u^6-20u^5+14u^4-12u^3+4a+9u+1, \\
&\quad u^{11}+8u^9-u^8+23u^7-5u^6+26u^5-6u^4+8u^3+u^2+2u-1\rangle \\
I_2^u &= \langle -5u^{11}-82u^{10}+\cdots+547b-41,\ 572u^{11}+957u^{10}+\cdots+2735a+3487, \\
&\quad u^{12}+u^{11}+6u^{10}+6u^9+13u^8+11u^7+15u^6+7u^5+17u^4+5u^3+16u^2+6u+5\rangle \\
I_3^u &= \langle b+u,\ a^2-a-1,\ u^2+1\rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 27 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. $\boldsymbol{I_1^u = \langle b - u,\ u^{10} - u^9 + \cdots + 4a + 1,\ u^{11} + 8u^9 + \cdots + 2u - 1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -\frac{1}{4}u^{10} + \frac{1}{4}u^9 + \cdots - \frac{9}{4}u - \frac{1}{4} \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -\frac{1}{2}u^{10} - 4u^8 + \cdots + 2u - \frac{1}{2} \\ \frac{1}{4}u^{10} - \frac{1}{4}u^9 + \cdots + \frac{1}{4}u + \frac{1}{4} \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -\frac{1}{2}u^{10} - \frac{1}{2}u^9 + \cdots - \frac{5}{2}u^2 - u \\ \frac{1}{4}u^{10} + \frac{1}{4}u^9 + \cdots - \frac{1}{4}u + \frac{1}{4} \end{pmatrix}$$
$$a_5 = \begin{pmatrix} \frac{1}{4}u^{10} + \frac{1}{4}u^9 + \cdots + \frac{1}{4}u + \frac{3}{4} \\ \frac{1}{4}u^{10} + \frac{1}{4}u^9 + \cdots + \frac{1}{4}u - \frac{1}{4} \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -\frac{1}{4}u^{10} + \frac{1}{4}u^9 + \cdots - \frac{5}{4}u - \frac{1}{4} \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} \frac{1}{4}u^{10} + \frac{1}{4}u^9 + \cdots + \frac{1}{4}u + \frac{3}{4} \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} \frac{1}{4}u^{10} + \frac{1}{4}u^9 + \cdots + \frac{1}{4}u + \frac{3}{4} \\ u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -3u^{10} - 2u^9 - 24u^8 - 12u^7 - 66u^6 - 25u^5 - 65u^4 - 23u^3 - 11u^2 - 14u - 13$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_3 c_7, c_8, c_9	$u^{11} + 8u^9 + u^8 + 23u^7 + 5u^6 + 26u^5 + 6u^4 + 8u^3 - u^2 + 2u + 1$
c_4, c_5, c_6 c_{10}, c_{11}	$u^{11} + 3u^{10} + \cdots + 13u + 2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_7, c_8, c_9	$y^{11} + 16y^{10} + \cdots + 6y - 1$
c_4, c_5, c_6 c_{10}, c_{11}	$y^{11} + 15y^{10} + \cdots + 37y - 4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.412939 + 0.618853I$ $a = -1.86851 - 1.24582I$ $b = 0.412939 + 0.618853I$	$10.82280 - 1.46957I$	$-5.57474 + 4.71346I$
$u = 0.412939 - 0.618853I$ $a = -1.86851 + 1.24582I$ $b = 0.412939 - 0.618853I$	$10.82280 + 1.46957I$	$-5.57474 - 4.71346I$
$u = -0.360154 + 0.393035I$ $a = 1.25715 - 0.93867I$ $b = -0.360154 + 0.393035I$	$1.95559 + 1.25455I$	$-6.26218 - 5.85654I$
$u = -0.360154 - 0.393035I$ $a = 1.25715 + 0.93867I$ $b = -0.360154 - 0.393035I$	$1.95559 - 1.25455I$	$-6.26218 + 5.85654I$
$u = -0.07033 + 1.59466I$ $a = 0.276929 + 0.448902I$ $b = -0.07033 + 1.59466I$	$10.55850 + 2.37127I$	$-3.60289 - 2.68530I$
$u = -0.07033 - 1.59466I$ $a = 0.276929 - 0.448902I$ $b = -0.07033 - 1.59466I$	$10.55850 - 2.37127I$	$-3.60289 + 2.68530I$
$u = 0.22374 + 1.62996I$ $a = -0.756490 + 0.157129I$ $b = 0.22374 + 1.62996I$	$15.5882 - 6.3668I$	$-0.98879 + 3.90232I$
$u = 0.22374 - 1.62996I$ $a = -0.756490 - 0.157129I$ $b = 0.22374 - 1.62996I$	$15.5882 + 6.3668I$	$-0.98879 - 3.90232I$
$u = 0.314433$ $a = -0.886718$ $b = 0.314433$	-0.496230	-19.9870
$u = -0.36341 + 1.67319I$ $a = 1.034280 - 0.155633I$ $b = -0.36341 + 1.67319I$	$-13.1804 + 8.7652I$	$-0.57808 - 3.37097I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.36341 - 1.67319I$ $a = \quad 1.034280 + 0.155633I$ $b = -0.36341 - 1.67319I$	$-13.1804 - 8.7652I$	$-0.57808 + 3.37097I$

II. $I_2^u = \langle -5u^{11} - 82u^{10} + \cdots + 547b - 41,\ 572u^{11} + 957u^{10} + \cdots + 2735a + 3487,\ u^{12} + u^{11} + \cdots + 6u + 5\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.209141u^{11} - 0.349909u^{10} + \cdots - 1.48702u - 1.27495 \\ 0.00914077u^{11} + 0.149909u^{10} + \cdots - 1.71298u + 0.0749543 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.0138940u^{11} - 0.0921389u^{10} + \cdots + 0.116271u - 0.646069 \\ -0.223035u^{11} - 0.257770u^{10} + \cdots - 0.603291u - 0.628885 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.0277879u^{11} - 0.184278u^{10} + \cdots - 0.767459u - 1.29214 \\ 0.0182815u^{11} + 0.299817u^{10} + \cdots - 0.425960u + 0.149909 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.0197441u^{11} - 0.236197u^{10} + \cdots + 0.0599634u - 0.918099 \\ -0.234004u^{11} - 0.237660u^{10} + \cdots - 0.747715u - 1.11883 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -\frac{1}{5}u^{11} - \frac{1}{5}u^{10} + \cdots - \frac{16}{5}u - \frac{6}{5} \\ 0.00914077u^{11} + 0.149909u^{10} + \cdots - 1.71298u + 0.0749543 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.0149909u^{11} - 0.00585009u^{10} + \cdots + 0.769287u - 0.802925 \\ -0.140768u^{11} + 0.0914077u^{10} + \cdots - 0.0201097u - 0.954296 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.0149909u^{11} - 0.00585009u^{10} + \cdots + 0.769287u - 0.802925 \\ -0.140768u^{11} + 0.0914077u^{10} + \cdots - 0.0201097u - 0.954296 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{828}{547}u^{11} + \frac{424}{547}u^{10} - \frac{3252}{547}u^9 + \frac{964}{547}u^8 - \frac{2920}{547}u^7 + \frac{624}{547}u^6 - \frac{3248}{547}u^5 + \frac{4136}{547}u^4 - \frac{9020}{547}u^3 + \frac{7924}{547}u^2 - \frac{3244}{547}u - \frac{882}{547}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_3 c_7, c_8, c_9	$u^{12} - u^{11} + \cdots - 6u + 5$
c_4, c_5, c_6 c_{10}, c_{11}	$(u^6 - u^5 + 5u^4 - 4u^3 + 6u^2 - 3u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_7, c_8, c_9	$y^{12} + 11y^{11} + \cdots + 124y + 25$
c_4, c_5, c_6 c_{10}, c_{11}	$(y^6 + 9y^5 + 29y^4 + 40y^3 + 22y^2 + 3y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.778448 + 0.629355I$ $a = 0.839269 + 0.810995I$ $b = -0.06243 - 1.43905I$	$7.93269 - 2.65597I$	$-2.41885 + 3.39809I$
$u = 0.778448 - 0.629355I$ $a = 0.839269 - 0.810995I$ $b = -0.06243 + 1.43905I$	$7.93269 + 2.65597I$	$-2.41885 - 3.39809I$
$u = 0.010658 + 1.201250I$ $a = 0.301274 - 0.265056I$ $b = -0.293888 - 0.567347I$	$3.03178 - 1.10871I$	$-7.53615 + 6.18117I$
$u = 0.010658 - 1.201250I$ $a = 0.301274 + 0.265056I$ $b = -0.293888 + 0.567347I$	$3.03178 + 1.10871I$	$-7.53615 - 6.18117I$
$u = -1.047750 + 0.669346I$ $a = -0.79276 + 1.18795I$ $b = 0.11496 - 1.62096I$	$18.6443 + 3.4272I$	$-2.04500 - 2.25224I$
$u = -1.047750 - 0.669346I$ $a = -0.79276 - 1.18795I$ $b = 0.11496 + 1.62096I$	$18.6443 - 3.4272I$	$-2.04500 + 2.25224I$
$u = -0.293888 + 0.567347I$ $a = -0.730525 - 0.188448I$ $b = 0.010658 - 1.201250I$	$3.03178 + 1.10871I$	$-7.53615 - 6.18117I$
$u = -0.293888 - 0.567347I$ $a = -0.730525 + 0.188448I$ $b = 0.010658 + 1.201250I$	$3.03178 - 1.10871I$	$-7.53615 + 6.18117I$
$u = -0.06243 + 1.43905I$ $a = -0.808537 - 0.064242I$ $b = 0.778448 - 0.629355I$	$7.93269 + 2.65597I$	$-2.41885 - 3.39809I$
$u = -0.06243 - 1.43905I$ $a = -0.808537 + 0.064242I$ $b = 0.778448 + 0.629355I$	$7.93269 - 2.65597I$	$-2.41885 + 3.39809I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.11496 + 1.62096I$ $a = 1.091280 + 0.055514I$ $b = -1.047750 - 0.669346I$	$18.6443 - 3.4272I$	$-2.04500 + 2.25224I$
$u = 0.11496 - 1.62096I$ $a = 1.091280 - 0.055514I$ $b = -1.047750 + 0.669346I$	$18.6443 + 3.4272I$	$-2.04500 - 2.25224I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.000000I$ $a = -0.618034$ $b = -1.000000I$	4.27683	0
$u = 1.000000I$ $a = 1.61803$ $b = -1.000000I$	12.1725	0
$u = -1.000000I$ $a = -0.618034$ $b = 1.000000I$	4.27683	0
$u = -1.000000I$ $a = 1.61803$ $b = 1.000000I$	12.1725	0

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_2, c_3 c_7, c_8, c_9	$((u^2+1)^2)(u^{11}+8u^9+\cdots+2u+1)$ $\cdot\,(u^{12}-u^{11}+\cdots-6u+5)$
c_4, c_5, c_6 c_{10}, c_{11}	$(u^4+3u^2+1)(u^6-u^5+5u^4-4u^3+6u^2-3u+1)^2$ $\cdot\,(u^{11}+3u^{10}+\cdots+13u+2)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_7, c_8, c_9	$((y+1)^4)(y^{11}+16y^{10}+\cdots+6y-1)(y^{12}+11y^{11}+\cdots+124y+25)$
c_4, c_5, c_6 c_{10}, c_{11}	$(y^2+3y+1)^2(y^6+9y^5+29y^4+40y^3+22y^2+3y+1)^2$ $\cdot(y^{11}+15y^{10}+\cdots+37y-4)$