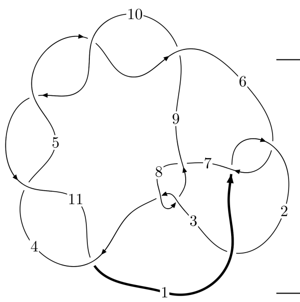
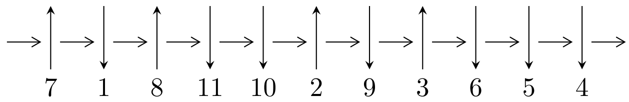
$11a_{214}$ ($K11a_{214}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & u^{15} - u^{14} + 2u^{13} - u^{12} + 5u^{11} - 5u^{10} + 4u^9 - 2u^8 + 7u^7 - 11u^6 + 4u^5 - 4u^4 + 5u^3 - 11u^2 + 4b - 1, \\
& - u^{15} + u^{14} - 2u^{13} + u^{12} - 5u^{11} + 5u^{10} - 4u^9 + 2u^8 - 7u^7 + 11u^6 - 4u^5 - 5u^3 + 7u^2 + 4a - 3, \\
& u^{16} + 3u^{14} + u^{13} + 8u^{12} + 2u^{11} + 11u^{10} + 4u^9 + 15u^8 + 2u^7 + 13u^6 + 2u^5 + 11u^4 + 5u^2 + u + 1\rangle \\
I_2^u = \langle & 24532u^{21} + 99990u^{20} + \cdots + 429733b + 160508, \\
& 1188174u^{21} - 128444u^{20} + \cdots + 2148665a + 5939931,\ u^{22} - u^{21} + \cdots - 6u + 5\rangle \\
I_3^u = \langle & b + a + 1,\ a^2 - au + 2a - u + 2,\ u^2 + 1\rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 42 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.

$\boldsymbol{I_1^u = \langle u^{15} - u^{14} + \cdots + 4b - 1,\ -u^{15} + u^{14} + \cdots + 4a - 3,\ u^{16} + 3u^{14} + \cdots + u + 1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} \frac{1}{4}u^{15} - \frac{1}{4}u^{14} + \cdots - \frac{7}{4}u^2 + \frac{3}{4} \\ -\frac{1}{4}u^{15} + \frac{1}{4}u^{14} + \cdots + \frac{11}{4}u^2 + \frac{1}{4} \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} \frac{1}{4}u^{15} - \frac{1}{4}u^{14} + \cdots - \frac{7}{4}u^2 + \frac{3}{4} \\ -\frac{1}{4}u^{15} + \frac{1}{4}u^{14} + \cdots + \frac{7}{4}u^2 + \frac{1}{4} \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} \frac{1}{4}u^{15} + \frac{1}{4}u^{14} + \cdots - \frac{1}{2}u + \frac{1}{4} \\ -\frac{1}{4}u^{15} - \frac{1}{4}u^{14} + \cdots + \frac{1}{2}u - \frac{1}{4} \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^4 + u^2 + 1 \\ -\frac{1}{4}u^{15} + \frac{1}{4}u^{14} + \cdots + \frac{11}{4}u^2 + \frac{1}{4} \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -\frac{1}{4}u^{15} + \frac{1}{4}u^{14} + \cdots + \frac{11}{4}u^2 + \frac{5}{4} \\ u^{15} + \frac{5}{2}u^{13} + \cdots + u - \frac{1}{2} \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} \frac{1}{4}u^{15} + \frac{3}{4}u^{14} + \cdots + u + \frac{5}{4} \\ -\frac{1}{2}u^{14} - \frac{1}{2}u^{13} + \cdots - \frac{5}{2}u - 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} \frac{1}{4}u^{15} + \frac{3}{4}u^{14} + \cdots + u + \frac{5}{4} \\ -\frac{1}{2}u^{14} - \frac{1}{2}u^{13} + \cdots - \frac{5}{2}u - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 3u^{15} - 2u^{14} + 9u^{13} - 2u^{12} + 21u^{11} - 9u^{10} + 27u^9 - 8u^8 + 32u^7 - 26u^6 + 30u^5 - 17u^4 + 23u^3 - 23u^2 + 11u - 3$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_6 c_8	$u^{16} + 3u^{14} + \cdots - u + 1$
c_2, c_7	$u^{16} + 6u^{15} + \cdots + 9u + 1$
c_4, c_5, c_9 c_{10}, c_{11}	$u^{16} - 3u^{15} + \cdots - 7u + 2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_6 c_8	$y^{16} + 6y^{15} + \cdots + 9y + 1$
c_2, c_7	$y^{16} + 14y^{15} + \cdots + 13y + 1$
c_4, c_5, c_9 c_{10}, c_{11}	$y^{16} + 21y^{15} + \cdots + 23y + 4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.739034 + 0.627334I$ $a = 0.206056 + 0.079796I$ $b = 0.110083 + 1.130490I$	$5.48130 + 1.05317I$	$4.45688 - 2.38990I$
$u = 0.739034 - 0.627334I$ $a = 0.206056 - 0.079796I$ $b = 0.110083 - 1.130490I$	$5.48130 - 1.05317I$	$4.45688 + 2.38990I$
$u = -0.555046 + 0.909908I$ $a = -0.752118 + 0.605011I$ $b = 0.482247 - 0.564899I$	$-0.19881 - 2.75301I$	$-1.57245 + 2.26508I$
$u = -0.555046 - 0.909908I$ $a = -0.752118 - 0.605011I$ $b = 0.482247 + 0.564899I$	$-0.19881 + 2.75301I$	$-1.57245 - 2.26508I$
$u = -0.926846 + 0.626361I$ $a = 0.304991 - 0.497485I$ $b = 0.03144 - 1.74738I$	$15.8152 - 0.4292I$	$4.82755 + 2.00465I$
$u = -0.926846 - 0.626361I$ $a = 0.304991 + 0.497485I$ $b = 0.03144 + 1.74738I$	$15.8152 + 0.4292I$	$4.82755 - 2.00465I$
$u = 0.317155 + 0.789225I$ $a = 0.47307 - 1.59041I$ $b = 0.02681 + 1.56809I$	$6.59915 + 1.30998I$	$1.95561 - 5.45778I$
$u = 0.317155 - 0.789225I$ $a = 0.47307 + 1.59041I$ $b = 0.02681 - 1.56809I$	$6.59915 - 1.30998I$	$1.95561 + 5.45778I$
$u = 0.596655 + 1.032140I$ $a = -1.346280 - 0.306488I$ $b = 0.623112 - 0.209109I$	$-1.29053 + 6.45307I$	$-4.44807 - 7.45131I$
$u = 0.596655 - 1.032140I$ $a = -1.346280 + 0.306488I$ $b = 0.623112 + 0.209109I$	$-1.29053 - 6.45307I$	$-4.44807 + 7.45131I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.652805+1.114230I$ $a=-1.64360-0.10173I$ $b=\ \ 0.376764+1.019230I$	$2.50481-9.84228I$	$-0.10556+8.25112I$
$u=-0.652805-1.114230I$ $a=-1.64360+0.10173I$ $b=\ \ 0.376764-1.019230I$	$2.50481+9.84228I$	$-0.10556-8.25112I$
$u=\ \ 0.691623+1.176670I$ $a=-1.83564+0.40291I$ $b=\ \ 0.10149-1.72523I$	$12.2077+11.7947I$	$0.96071-6.63599I$
$u=\ \ 0.691623-1.176670I$ $a=-1.83564-0.40291I$ $b=\ \ 0.10149+1.72523I$	$12.2077-11.7947I$	$0.96071+6.63599I$
$u=-0.209770+0.436269I$ $a=\ \ 1.093530+0.297205I$ $b=-0.251943-0.426672I$	$0.004513-0.990902I$	$-0.07468+7.34190I$
$u=-0.209770-0.436269I$ $a=\ \ 1.093530-0.297205I$ $b=-0.251943+0.426672I$	$0.004513+0.990902I$	$-0.07468-7.34190I$

II. $I_2^u = \langle 24532u^{21} + 99990u^{20} + \cdots + 429733b + 160508,\ 1.19 \times 10^6 u^{21} - 1.28 \times 10^5 u^{20} + \cdots + 2.15 \times 10^6 a + 5.94 \times 10^6,\ u^{22} - u^{21} + \cdots - 6u + 5\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.552982u^{21} + 0.0597785u^{20} + \cdots + 1.60210u - 2.76448 \\ -0.0570866u^{21} - 0.232679u^{20} + \cdots + 0.277416u - 0.373506 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.610069u^{21} - 0.172901u^{20} + \cdots + 1.87951u - 2.13798 \\ -0.295974u^{21} - 0.109836u^{20} + \cdots - 0.426602u - 0.137709 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.857671u^{21} + 1.08755u^{20} + \cdots - 5.92382u + 3.22114 \\ -0.358651u^{21} + 0.737100u^{20} + \cdots - 1.13075u + 1.90093 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.610069u^{21} - 0.172901u^{20} + \cdots + 1.87951u - 3.13798 \\ -0.0570866u^{21} - 0.232679u^{20} + \cdots + 0.277416u - 0.373506 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.297712u^{21} - 0.0832768u^{20} + \cdots + 0.722951u - 1.80592 \\ -0.0824745u^{21} - 0.0617407u^{20} + \cdots + 0.677572u - 1.65554 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.116673u^{21} + 0.386783u^{20} + \cdots + 2.80778u + 0.179480 \\ 0.531833u^{21} - 0.160528u^{20} + \cdots + 2.45702u - 1.02872 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.116673u^{21} + 0.386783u^{20} + \cdots + 2.80778u + 0.179480 \\ 0.531833u^{21} - 0.160528u^{20} + \cdots + 2.45702u - 1.02872 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{412776}{429733}u^{21} - \frac{136152}{429733}u^{20} + \cdots + \frac{1938508}{429733}u - \frac{1667194}{429733}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_6 c_8	$u^{22} + u^{21} + \cdots + 6u + 5$
c_2, c_7	$u^{22} + 11u^{21} + \cdots + 124u + 25$
c_4, c_5, c_9 c_{10}, c_{11}	$(u^{11} + u^{10} + 8u^9 + 7u^8 + 22u^7 + 16u^6 + 24u^5 + 13u^4 + 9u^3 + 3u^2 - 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_6 c_8	$y^{22} + 11y^{21} + \cdots + 124y + 25$
c_2, c_7	$y^{22} - y^{21} + \cdots + 4824y + 625$
c_4, c_5, c_9 c_{10}, c_{11}	$(y^{11} + 15y^{10} + \cdots + 6y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.579803 + 0.857238I$ $a = -1.85524 - 1.12681I$ $b = 0.03037 - 1.69780I$	$7.95553 + 2.30219I$	$0.32022 - 2.86330I$
$u = 0.579803 - 0.857238I$ $a = -1.85524 + 1.12681I$ $b = 0.03037 + 1.69780I$	$7.95553 - 2.30219I$	$0.32022 + 2.86330I$
$u = -0.399913 + 0.875160I$ $a = -1.65574 + 0.96794I$ $b = 0.147502 + 0.884325I$	$-1.26759 - 1.65848I$	$-0.54419 + 4.72916I$
$u = -0.399913 - 0.875160I$ $a = -1.65574 - 0.96794I$ $b = 0.147502 - 0.884325I$	$-1.26759 + 1.65848I$	$-0.54419 - 4.72916I$
$u = -0.529162 + 0.802687I$ $a = 1.204780 - 0.193673I$ $b = -0.499488 - 0.319159I$	$0.18031 - 1.62554I$	$-1.42199 + 3.91435I$
$u = -0.529162 - 0.802687I$ $a = 1.204780 + 0.193673I$ $b = -0.499488 + 0.319159I$	$0.18031 + 1.62554I$	$-1.42199 - 3.91435I$
$u = -0.848321 + 0.450725I$ $a = 0.353490 + 0.072972I$ $b = -0.275765 + 1.061690I$	$4.47712 + 4.26374I$	$2.95029 - 4.02329I$
$u = -0.848321 - 0.450725I$ $a = 0.353490 - 0.072972I$ $b = -0.275765 - 1.061690I$	$4.47712 - 4.26374I$	$2.95029 + 4.02329I$
$u = 0.197868 + 1.057100I$ $a = -1.010600 - 0.780021I$ $b = 0.337740$	-3.92670	$-11.69818 + 0.I$
$u = 0.197868 - 1.057100I$ $a = -1.010600 + 0.780021I$ $b = 0.337740$	-3.92670	$-11.69818 + 0.I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.986171 + 0.439556I$ $a = 0.194359 - 0.406737I$ $b = -0.07149 - 1.73688I$	$14.4695 - 5.6984I$	$3.54476 + 2.83577I$
$u = 0.986171 - 0.439556I$ $a = 0.194359 + 0.406737I$ $b = -0.07149 + 1.73688I$	$14.4695 + 5.6984I$	$3.54476 - 2.83577I$
$u = 0.662778 + 0.976432I$ $a = 1.42879 + 0.04455I$ $b = -0.275765 + 1.061690I$	$4.47712 + 4.26374I$	$2.95029 - 4.02329I$
$u = 0.662778 - 0.976432I$ $a = 1.42879 - 0.04455I$ $b = -0.275765 - 1.061690I$	$4.47712 - 4.26374I$	$2.95029 + 4.02329I$
$u = 0.610796 + 0.518790I$ $a = 0.780853 + 0.341379I$ $b = -0.499488 - 0.319159I$	$0.18031 - 1.62554I$	$-1.42199 + 3.91435I$
$u = 0.610796 - 0.518790I$ $a = 0.780853 - 0.341379I$ $b = -0.499488 + 0.319159I$	$0.18031 + 1.62554I$	$-1.42199 - 3.91435I$
$u = -0.125296 + 1.244620I$ $a = -0.270054 + 1.088140I$ $b = 0.147502 - 0.884325I$	$-1.26759 + 1.65848I$	$-0.54419 - 4.72916I$
$u = -0.125296 - 1.244620I$ $a = -0.270054 - 1.088140I$ $b = 0.147502 + 0.884325I$	$-1.26759 - 1.65848I$	$-0.54419 + 4.72916I$
$u = -0.746289 + 1.064200I$ $a = 1.62058 + 0.05160I$ $b = -0.07149 - 1.73688I$	$14.4695 - 5.6984I$	$3.54476 + 2.83577I$
$u = -0.746289 - 1.064200I$ $a = 1.62058 - 0.05160I$ $b = -0.07149 + 1.73688I$	$14.4695 + 5.6984I$	$3.54476 - 2.83577I$

	Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.111564+1.357150I$		
$a=$	$0.00879-1.46999I$	$7.95553-2.30219I$	$0.32022+2.86330I$
$b=$	$0.03037+1.69780I$		
$u=$	$0.111564-1.357150I$		
$a=$	$0.00879+1.46999I$	$7.95553+2.30219I$	$0.32022-2.86330I$
$b=$	$0.03037-1.69780I$		

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

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} a \\ -a - 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u \\ 0 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} a + 1 \\ -a - 2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} au \\ -au - u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -1 \\ -a - 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} a + 2 \\ au + u - 1 \end{pmatrix}$$

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_6 c_8	$(y+1)^4$
c_2, c_7	$(y-1)^4$
c_4, c_5, c_9 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
$u = 1.000000I$ $a = -1.000000 - 0.618034I$ $b = 0.618034I$	-2.30291	-4.00000
$u = 1.000000I$ $a = -1.00000 + 1.61803I$ $b = -1.61803I$	5.59278	-4.00000
$u = -1.000000I$ $a = -1.000000 + 0.618034I$ $b = -0.618034I$	-2.30291	-4.00000
$u = -1.000000I$ $a = -1.00000 - 1.61803I$ $b = 1.61803I$	5.59278	-4.00000

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_3, c_6 c_8	$((u^2+1)^2)(u^{16}+3u^{14}+\cdots-u+1)(u^{22}+u^{21}+\cdots+6u+5)$
c_2	$((u+1)^4)(u^{16}+6u^{15}+\cdots+9u+1)(u^{22}+11u^{21}+\cdots+124u+25)$
c_4, c_5, c_9 c_{10}, c_{11}	(u^4+3u^2+1) $\cdot(u^{11}+u^{10}+8u^9+7u^8+22u^7+16u^6+24u^5+13u^4+9u^3+3u^2-1)^2$ $\cdot(u^{16}-3u^{15}+\cdots-7u+2)$
c_7	$((u-1)^4)(u^{16}+6u^{15}+\cdots+9u+1)(u^{22}+11u^{21}+\cdots+124u+25)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_6 c_8	$((y+1)^4)(y^{16}+6y^{15}+\cdots+9y+1)(y^{22}+11y^{21}+\cdots+124y+25)$
c_2, c_7	$((y-1)^4)(y^{16}+14y^{15}+\cdots+13y+1)(y^{22}-y^{21}+\cdots+4824y+625)$
c_4, c_5, c_9 c_{10}, c_{11}	$((y^2+3y+1)^2)(y^{11}+15y^{10}+\cdots+6y-1)^2$ $\cdot\,(y^{16}+21y^{15}+\cdots+23y+4)$