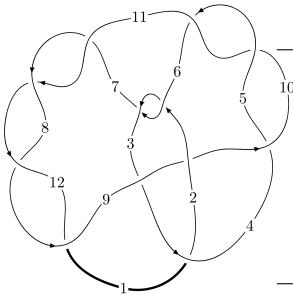
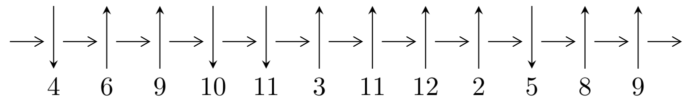
$12n_{0767}$ ($K12n_{0767}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$7{,}11 \underset{c_7}{\rightarrow} 8 \underset{c_{11}}{\rightarrow} 12 \underset{c_8}{\rightarrow} 3{,}9 \underset{c_6}{\rightarrow} 6 \underset{c_2}{\longrightarrow} 2 \underset{c_5}{\longrightarrow} 5 \underset{c_{10}}{\rightarrow} 10 \underset{c_4}{\rightarrow} 4 \underset{c_1}{\longrightarrow} 1 \twoheadrightarrow c_3, c_9, c_{12}$$

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

$$\begin{aligned}
I_1^u = \langle &-3.23603 \times 10^{37} u^{44} + 1.33966 \times 10^{38} u^{43} + \cdots + 1.65382 \times 10^{39} b - 3.21123 \times 10^{39}, \\
&- 6.36572 \times 10^{38} u^{44} + 8.22571 \times 10^{38} u^{43} + \cdots + 3.30764 \times 10^{39} a + 1.07047 \times 10^{40}, \\
&u^{45} - 3u^{44} + \cdots + 50u - 4\rangle \\
I_2^u = \langle &-u^9 + 5u^7 - 9u^5 + u^4 + 7u^3 - 3u^2 + b - u + 2,\ 2u^9 - 12u^7 - u^6 + 26u^5 + 3u^4 - 23u^3 + a + 5u - 4, \\
&u^{10} - 6u^8 + 13u^6 - u^5 - 12u^4 + 4u^3 + 3u^2 - 4u + 1\rangle \\
I_3^u = \langle &u^2 + b + u - 1,\ a,\ u^3 + u^2 - 2u - 1\rangle \\
I_4^u = \langle &a^2 + 2b + a + 1,\ a^4 + a^2 - 4a + 1,\ u + 1\rangle \\
I_5^u = \langle &b + 1,\ a,\ u + 1\rangle
\end{aligned}$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 63 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. $\boldsymbol{I^u_1 = \langle -3.24\times 10^{37}u^{44} + 1.34\times 10^{38}u^{43} + \cdots + 1.65\times 10^{39}b - 3.21\times 10^{39},\ -6.37\times 10^{38}u^{44} + 8.23\times 10^{38}u^{43} + \cdots + 3.31\times 10^{39}a + 1.07\times 10^{40},\ u^{45} - 3u^{44} + \cdots + 50u - 4\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.192455u^{44} - 0.248689u^{43} + \cdots - 8.80994u - 3.23636 \\ 0.0195670u^{44} - 0.0810038u^{43} + \cdots - 8.75930u + 1.94171 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.175770u^{44} + 0.507263u^{43} + \cdots + 42.4168u - 8.30175 \\ 0.0965165u^{44} - 0.317560u^{43} + \cdots - 9.44223u + 2.32132 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.440671u^{44} - 1.07384u^{43} + \cdots - 43.5785u + 5.01696 \\ 0.266201u^{44} - 0.416972u^{43} + \cdots - 9.52908u - 0.181638 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.175770u^{44} + 0.507263u^{43} + \cdots + 42.4168u - 8.30175 \\ 0.157017u^{44} - 0.419492u^{43} + \cdots - 9.74149u + 2.40151 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.0526459u^{44} - 0.238843u^{43} + \cdots - 36.4630u + 5.97165 \\ -0.213158u^{44} + 0.494391u^{43} + \cdots + 7.97003u - 1.44277 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.111781u^{44} - 0.130627u^{43} + \cdots - 11.0582u - 1.93976 \\ -0.246633u^{44} + 0.420180u^{43} + \cdots + 1.66318u + 1.02808 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 - 2u \\ -u^5 + 3u^3 - u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2.59706u^{44} + 5.33204u^{43} + \cdots + 112.471u - 14.4760$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{45} + u^{44} + \cdots + 279u - 13$
c_2, c_6	$u^{45} - 4u^{44} + \cdots + 2u + 1$
c_3	$u^{45} - 2u^{44} + \cdots + 413u - 43$
c_4, c_5, c_{10}	$u^{45} - 27u^{43} + \cdots + 104u + 1$
c_7, c_8, c_{11} c_{12}	$u^{45} + 3u^{44} + \cdots + 50u + 4$
c_9	$u^{45} + 2u^{44} + \cdots + 113u - 29$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{45} - 35y^{44} + \cdots + 35279y - 169$
c_2, c_6	$y^{45} - 8y^{44} + \cdots + 92y - 1$
c_3	$y^{45} + 38y^{44} + \cdots - 1603y - 1849$
c_4, c_5, c_{10}	$y^{45} - 54y^{44} + \cdots + 10150y - 1$
c_7, c_8, c_{11} c_{12}	$y^{45} - 37y^{44} + \cdots + 812y - 16$
c_9	$y^{45} + 4y^{44} + \cdots - 1615y - 841$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.041408 + 1.014500I$ $a = -0.544128 + 0.813587I$ $b = -0.668184 + 0.559705I$	$-3.13407 - 4.15263I$	$3.01706 + 7.91785I$
$u = 0.041408 - 1.014500I$ $a = -0.544128 - 0.813587I$ $b = -0.668184 - 0.559705I$	$-3.13407 + 4.15263I$	$3.01706 - 7.91785I$
$u = -0.174430 + 1.008960I$ $a = 0.104541 - 1.265410I$ $b = 1.09285 - 1.10386I$	$-11.19940 + 0.59411I$	$-0.389790 + 0.117454I$
$u = -0.174430 - 1.008960I$ $a = 0.104541 + 1.265410I$ $b = 1.09285 + 1.10386I$	$-11.19940 - 0.59411I$	$-0.389790 - 0.117454I$
$u = 0.924387 + 0.268290I$ $a = 1.30873 - 1.48625I$ $b = -1.103840 - 0.669054I$	$-4.20645 + 4.64825I$	$2.38480 - 4.16816I$
$u = 0.924387 - 0.268290I$ $a = 1.30873 + 1.48625I$ $b = -1.103840 + 0.669054I$	$-4.20645 - 4.64825I$	$2.38480 + 4.16816I$
$u = -1.04388$ $a = 0.114632$ $b = -0.831047$	1.64144	6.13540
$u = 0.172930 + 1.107670I$ $a = 0.302565 + 1.166110I$ $b = 0.99663 + 1.10399I$	$-11.4488 + 8.5525I$	$0. - 5.01890I$
$u = 0.172930 - 1.107670I$ $a = 0.302565 - 1.166110I$ $b = 0.99663 - 1.10399I$	$-11.4488 - 8.5525I$	$0. + 5.01890I$
$u = 1.183020 + 0.194269I$ $a = -0.324146 + 0.894691I$ $b = 0.919413 + 0.825208I$	$4.00704 + 3.18534I$	$11.68963 - 6.13531I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.183020 - 0.194269I$ $a = -0.324146 - 0.894691I$ $b = 0.919413 - 0.825208I$	$4.00704 - 3.18534I$	$11.68963 + 6.13531I$
$u = 0.534356 + 0.586253I$ $a = -1.101580 + 0.538647I$ $b = -0.795649 + 0.846239I$	$-5.13534 - 1.11726I$	$0.73798 - 1.28105I$
$u = 0.534356 - 0.586253I$ $a = -1.101580 - 0.538647I$ $b = -0.795649 - 0.846239I$	$-5.13534 + 1.11726I$	$0.73798 + 1.28105I$
$u = 1.167650 + 0.322960I$ $a = -0.240809 + 0.733906I$ $b = -0.313834 + 0.831062I$	$-0.68736 + 4.21030I$	$4.00000 - 5.02071I$
$u = 1.167650 - 0.322960I$ $a = -0.240809 - 0.733906I$ $b = -0.313834 - 0.831062I$	$-0.68736 - 4.21030I$	$4.00000 + 5.02071I$
$u = 0.097797 + 0.779729I$ $a = 0.06028 - 1.52878I$ $b = -0.464144 - 0.749358I$	$-3.97386 - 0.23348I$	$-1.018556 - 0.405241I$
$u = 0.097797 - 0.779729I$ $a = 0.06028 + 1.52878I$ $b = -0.464144 + 0.749358I$	$-3.97386 + 0.23348I$	$-1.018556 + 0.405241I$
$u = 1.22285$ $a = -0.616977$ $b = 1.60763$	6.34821	19.0110
$u = -1.091580 + 0.620522I$ $a = 0.258135 - 0.780615I$ $b = 0.607158 - 0.350869I$	$1.16029 - 2.81472I$	$0. + 13.05919I$
$u = -1.091580 - 0.620522I$ $a = 0.258135 + 0.780615I$ $b = 0.607158 + 0.350869I$	$1.16029 + 2.81472I$	$0. - 13.05919I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.273640 + 0.133753I$ $a = -0.45180 + 1.46446I$ $b = -0.145492 + 0.099772I$	$-1.17659 + 4.15233I$	0
$u = 1.273640 - 0.133753I$ $a = -0.45180 - 1.46446I$ $b = -0.145492 - 0.099772I$	$-1.17659 - 4.15233I$	0
$u = -1.271760 + 0.215202I$ $a = 0.646150 + 1.192530I$ $b = -0.92299 + 1.17785I$	$-0.67716 - 6.28448I$	0
$u = -1.271760 - 0.215202I$ $a = 0.646150 - 1.192530I$ $b = -0.92299 - 1.17785I$	$-0.67716 + 6.28448I$	0
$u = -1.186450 + 0.545831I$ $a = 0.346861 + 0.155289I$ $b = 0.73612 + 1.35462I$	$-8.09139 - 6.07854I$	0
$u = -1.186450 - 0.545831I$ $a = 0.346861 - 0.155289I$ $b = 0.73612 - 1.35462I$	$-8.09139 + 6.07854I$	0
$u = -1.34838$ $a = 0.0600852$ $b = -0.938079$	1.78156	0
$u = -1.355850 + 0.355471I$ $a = 0.829889 + 0.927938I$ $b = -0.780033 + 0.657789I$	$0.61158 - 3.87330I$	0
$u = -1.355850 - 0.355471I$ $a = 0.829889 - 0.927938I$ $b = -0.780033 - 0.657789I$	$0.61158 + 3.87330I$	0
$u = 1.209790 + 0.720141I$ $a = 0.392103 - 0.127077I$ $b = 0.587982 - 1.074260I$	$-8.33246 - 2.24840I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.209790 - 0.720141I$ $a = 0.392103 + 0.127077I$ $b = 0.587982 + 1.074260I$	$-8.33246 + 2.24840I$	0
$u = 1.33029 + 0.50410I$ $a = 0.411973 - 1.081660I$ $b = -1.003550 - 0.717171I$	$0.92810 + 9.55627I$	0
$u = 1.33029 - 0.50410I$ $a = 0.411973 + 1.081660I$ $b = -1.003550 + 0.717171I$	$0.92810 - 9.55627I$	0
$u = -1.46627$ $a = -1.25063$ $b = 1.38819$	8.29347	0
$u = -1.44154 + 0.50693I$ $a = -0.735094 - 1.007510I$ $b = 1.26328 - 0.98250I$	$-6.3918 - 14.2928I$	0
$u = -1.44154 - 0.50693I$ $a = -0.735094 + 1.007510I$ $b = 1.26328 + 0.98250I$	$-6.3918 + 14.2928I$	0
$u = 1.45643 + 0.46943I$ $a = -0.956513 + 0.849625I$ $b = 1.31123 + 0.80369I$	$-6.04579 + 4.74034I$	0
$u = 1.45643 - 0.46943I$ $a = -0.956513 - 0.849625I$ $b = 1.31123 - 0.80369I$	$-6.04579 - 4.74034I$	0
$u = -0.134327 + 0.352329I$ $a = 1.36446 - 1.01479I$ $b = 0.455730 - 0.362630I$	$0.335623 - 1.031530I$	$5.27348 + 6.47148I$
$u = -0.134327 - 0.352329I$ $a = 1.36446 + 1.01479I$ $b = 0.455730 + 0.362630I$	$0.335623 + 1.031530I$	$5.27348 - 6.47148I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.63327$ $a = 0.749914$ $b = -0.994896$	10.4857	0
$u = 0.087790 + 0.304921I$ $a = -2.59328 - 3.84226I$ $b = -0.610911 - 0.807890I$	$-4.79980 + 4.02044I$	$0.46581 - 8.77034I$
$u = 0.087790 - 0.304921I$ $a = -2.59328 + 3.84226I$ $b = -0.610911 + 0.807890I$	$-4.79980 - 4.02044I$	$0.46581 + 8.77034I$
$u = -1.76260$ $a = -0.288186$ $b = 0.125896$	3.04144	0
$u = 0.117909$ $a = -4.42552$ $b = 1.31879$	2.93768	-5.76770

II. $\boldsymbol{I_2^u = \langle -u^9 + 5u^7 - 9u^5 + u^4 + 7u^3 - 3u^2 + b - u + 2,\ 2u^9 - 12u^7 + \cdots + a - 4,\ u^{10} - 6u^8 + \cdots - 4u + 1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -2u^9 + 12u^7 + u^6 - 26u^5 - 3u^4 + 23u^3 - 5u + 4 \\ u^9 - 5u^7 + 9u^5 - u^4 - 7u^3 + 3u^2 + u - 2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 2u^9 + u^8 - 12u^7 - 6u^6 + 26u^5 + 11u^4 - 24u^3 - 4u^2 + 7u - 5 \\ -u^9 - u^8 + 6u^7 + 5u^6 - 13u^5 - 7u^4 + 13u^3 + u^2 - 6u + 4 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^9 + u^8 - 5u^7 - 5u^6 + 8u^5 + 7u^4 - 5u^3 - u^2 + u - 3 \\ -2u^9 + 11u^7 + u^6 - 21u^5 - 2u^4 + 16u^3 - 2u^2 - 3u + 3 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 2u^9 + u^8 - 12u^7 - 6u^6 + 26u^5 + 11u^4 - 24u^3 - 4u^2 + 7u - 5 \\ -u^9 - u^8 + 6u^7 + 5u^6 - 14u^5 - 7u^4 + 16u^3 + u^2 - 8u + 5 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^9 + 6u^7 - 13u^5 + u^4 + 12u^3 - 5u^2 - 3u + 6 \\ 2u^9 + u^8 - 11u^7 - 5u^6 + 21u^5 + 8u^4 - 17u^3 - 2u^2 + 4u - 4 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -2u^9 + 12u^7 + u^6 - 26u^5 - 3u^4 + 24u^3 - 7u + 4 \\ u^9 - u^8 - 5u^7 + 5u^6 + 8u^5 - 9u^4 - 3u^3 + 7u^2 - 3u - 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^3 + 2u \\ u^5 - 3u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 2u^9 + 4u^8 - 8u^7 - 16u^6 + 11u^5 + 17u^4 - 9u^3 + u^2 + 6u - 3$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{10} - 2u^9 - u^8 + 9u^7 - 8u^6 - 9u^5 + 18u^4 - 2u^3 - 10u^2 + 4u + 1$
c_2	$u^{10} - 2u^9 - 2u^8 + 7u^7 - 3u^6 - 6u^5 + 6u^4 + u^3 - 2u^2 + 1$
c_3	$u^{10} - 2u^9 + 4u^8 - 8u^7 + 10u^6 - 12u^5 + 9u^4 - 5u^3 + u^2 + 2u - 1$
c_4, c_5	$u^{10} - 5u^8 - u^7 + 9u^6 + 5u^5 - 6u^4 - 8u^3 + u^2 + 4u - 1$
c_6	$u^{10} + 2u^9 - 2u^8 - 7u^7 - 3u^6 + 6u^5 + 6u^4 - u^3 - 2u^2 + 1$
c_7, c_8	$u^{10} - 6u^8 + 13u^6 - u^5 - 12u^4 + 4u^3 + 3u^2 - 4u + 1$
c_9	$u^{10} - 2u^9 - u^8 + 5u^7 - 9u^6 + 12u^5 - 10u^4 + 8u^3 - 4u^2 + 2u - 1$
c_{10}	$u^{10} - 5u^8 + u^7 + 9u^6 - 5u^5 - 6u^4 + 8u^3 + u^2 - 4u - 1$
c_{11}, c_{12}	$u^{10} - 6u^8 + 13u^6 + u^5 - 12u^4 - 4u^3 + 3u^2 + 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{10} - 6y^9 + \cdots - 36y + 1$
c_2, c_6	$y^{10} - 8y^9 + \cdots - 4y + 1$
c_3	$y^{10} + 4y^9 + 4y^8 - 14y^7 - 38y^6 - 30y^5 + 5y^4 + 21y^3 + 3y^2 - 6y + 1$
c_4, c_5, c_{10}	$y^{10} - 10y^9 + \cdots - 18y + 1$
c_7, c_8, c_{11} c_{12}	$y^{10} - 12y^9 + \cdots - 10y + 1$
c_9	$y^{10} - 6y^9 + 3y^8 + 21y^7 + 5y^6 - 30y^5 - 38y^4 - 14y^3 + 4y^2 + 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.20478$ $a = -0.980273$ $b = 1.51324$	5.82290	2.46150
$u = -1.195710 + 0.441090I$ $a = -0.078451 - 0.972048I$ $b = 0.500388 - 0.335058I$	$1.23645 - 2.22223I$	$7.15723 - 0.57453I$
$u = -1.195710 - 0.441090I$ $a = -0.078451 + 0.972048I$ $b = 0.500388 + 0.335058I$	$1.23645 + 2.22223I$	$7.15723 + 0.57453I$
$u = 1.283760 + 0.213392I$ $a = 1.01246 - 1.42425I$ $b = -0.808287 - 0.797110I$	$-1.62689 + 5.63070I$	$2.15370 - 5.54722I$
$u = 1.283760 - 0.213392I$ $a = 1.01246 + 1.42425I$ $b = -0.808287 + 0.797110I$	$-1.62689 - 5.63070I$	$2.15370 + 5.54722I$
$u = 0.327169 + 0.496307I$ $a = -2.25689 + 0.68510I$ $b = -0.520471 + 0.577536I$	$-4.94627 - 3.16167I$	$-1.44465 + 0.82842I$
$u = 0.327169 - 0.496307I$ $a = -2.25689 - 0.68510I$ $b = -0.520471 - 0.577536I$	$-4.94627 + 3.16167I$	$-1.44465 - 0.82842I$
$u = -1.56924$ $a = 1.33343$ $b = -1.37777$	7.07752	3.45960
$u = 1.60443$ $a = -0.760124$ $b = 1.08548$	10.7042	26.3010
$u = 0.339155$ $a = 3.05273$ $b = -1.56421$	0.228307	−0.954520

III. $I_3^u = \langle u^2 + b + u - 1,\ a,\ u^3 + u^2 - 2u - 1\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u \\ u^2 - u - 1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0 \\ -u^2 - u + 1 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 1 \\ u + 2 \end{pmatrix}$$

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

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

$$a_{10} = \begin{pmatrix} u \\ 2u^2 + u - 1 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} u^2 - 1 \\ -u^2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= u^2 - 4u + 16$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.24698$ $a = 0$ $b = -1.80194$	3.28987	12.5670
$u = -0.445042$ $a = 0$ $b = 1.24698$	3.28987	17.9780
$u = -1.80194$ $a = 0$ $b = -0.445042$	3.28987	26.4550

IV. $I_4^u = \langle a^2 + 2b + a + 1,\ a^4 + a^2 - 4a + 1,\ u + 1 \rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} a \\ -\frac{1}{2}a^2 - \frac{1}{2}a - \frac{1}{2} \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -\frac{1}{2}a^3 - \frac{1}{2}a^2 - \frac{1}{2}a + 1 \\ \frac{1}{2}a^3 + \frac{1}{2}a^2 + \frac{3}{2}a \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -\frac{1}{2}a^3 - \frac{1}{2}a^2 - \frac{1}{2}a + 1 \\ a^3 + a^2 + 2a - 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -\frac{1}{2}a^3 - \frac{1}{2}a^2 - \frac{1}{2}a + 1 \\ a^3 + a^2 + 2a - 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -\frac{1}{2}a^2 - \frac{1}{2}a - \frac{1}{2} \\ a^3 + \frac{3}{2}a^2 + \frac{5}{2}a - \frac{3}{2} \end{pmatrix}$$
$$a_4 = \begin{pmatrix} a \\ -\frac{1}{2}a^2 - \frac{3}{2}a - \frac{1}{2} \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_6	$y^4 - 5y^3 + 6y^2 - 4y + 1$
c_3	$y^4 + 2y^3 + 3y^2 - 14y + 1$
c_4, c_5, c_9 c_{10}	$y^4 - y^3 - 2y^2 + 1$
c_7, c_8, c_{11} c_{12}	$(y-1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = \quad 1.24938$ $b = -1.90517$	1.64493	6.00000
$u = -1.00000$ $a = -0.75943 + 1.54710I$ $b = \quad 0.788105 + 0.401358I$	1.64493	6.00000
$u = -1.00000$ $a = -0.75943 - 1.54710I$ $b = \quad 0.788105 - 0.401358I$	1.64493	6.00000
$u = -1.00000$ $a = \quad 0.269472$ $b = -0.671044$	1.64493	6.00000

V. $I_5^u = \langle b+1,\ a,\ u+1 \rangle$

(i) Arc colorings

$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$

$a_{11} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$

$a_8 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$

$a_{12} = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$

$a_3 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$

$a_9 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$

$a_6 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$

$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$

$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$

$a_{10} = \begin{pmatrix} -1 \\ -1 \end{pmatrix}$

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

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5 c_7, c_8, c_9 c_{10}, c_{11}, c_{12}	$u - 1$
c_2, c_6	$u + 1$
c_3	u

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5, c_6, c_7 c_8, c_9, c_{10} c_{11}, c_{12}	$y - 1$
c_3	y

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = \quad 0$ $b = -1.00000$	1.64493	6.00000

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)(u^3+2u^2-u-1)(u^4-u^3-2u^2+1)$ $\cdot(u^{10}-2u^9-u^8+9u^7-8u^6-9u^5+18u^4-2u^3-10u^2+4u+1)$ $\cdot(u^{45}+u^{44}+\cdots+279u-13)$
c_2	$(u+1)(u^3-u^2-2u+1)(u^4+u^3-2u^2+1)$ $\cdot(u^{10}-2u^9-2u^8+7u^7-3u^6-6u^5+6u^4+u^3-2u^2+1)$ $\cdot(u^{45}-4u^{44}+\cdots+2u+1)$
c_3	$u(u+1)^3(u^4+u^2-4u+1)$ $\cdot(u^{10}-2u^9+4u^8-8u^7+10u^6-12u^5+9u^4-5u^3+u^2+2u-1)$ $\cdot(u^{45}-2u^{44}+\cdots+413u-43)$
c_4, c_5	$(u-1)(u^3+u^2-2u-1)(u^4+u^3-1)$ $\cdot(u^{10}-5u^8-u^7+9u^6+5u^5-6u^4-8u^3+u^2+4u-1)$ $\cdot(u^{45}-27u^{43}+\cdots+104u+1)$
c_6	$(u+1)(u^3+u^2-2u-1)(u^4+u^3-2u^2+1)$ $\cdot(u^{10}+2u^9-2u^8-7u^7-3u^6+6u^5+6u^4-u^3-2u^2+1)$ $\cdot(u^{45}-4u^{44}+\cdots+2u+1)$
c_7, c_8	$(u-1)^5(u^3+u^2-2u-1)$ $\cdot(u^{10}-6u^8+13u^6-u^5-12u^4+4u^3+3u^2-4u+1)$ $\cdot(u^{45}+3u^{44}+\cdots+50u+4)$
c_9	$(u-1)(u+1)^3(u^4+u^3-1)$ $\cdot(u^{10}-2u^9-u^8+5u^7-9u^6+12u^5-10u^4+8u^3-4u^2+2u-1)$ $\cdot(u^{45}+2u^{44}+\cdots+113u-29)$
c_{10}	$(u-1)(u^3-u^2-2u+1)(u^4+u^3-1)$ $\cdot(u^{10}-5u^8+u^7+9u^6-5u^5-6u^4+8u^3+u^2-4u-1)$ $\cdot(u^{45}-27u^{43}+\cdots+104u+1)$
c_{11}, c_{12}	$(u-1)^5(u^3-u^2-2u+1)$ $\cdot(u^{10}-6u^8+13u^6+u^5-12u^4-4u^3+3u^2+4u+1)$ $\cdot(u^{45}+3u^{44}+\cdots+50u+4)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)(y^3-6y^2+5y-1)(y^4-5y^3+6y^2-4y+1)$ $\cdot(y^{10}-6y^9+\cdots-36y+1)(y^{45}-35y^{44}+\cdots+35279y-169)$
c_2, c_6	$(y-1)(y^3-5y^2+6y-1)(y^4-5y^3+6y^2-4y+1)$ $\cdot(y^{10}-8y^9+\cdots-4y+1)(y^{45}-8y^{44}+\cdots+92y-1)$
c_3	$y(y-1)^3(y^4+2y^3+3y^2-14y+1)$ $\cdot(y^{10}+4y^9+4y^8-14y^7-38y^6-30y^5+5y^4+21y^3+3y^2-6y+1)$ $\cdot(y^{45}+38y^{44}+\cdots-1603y-1849)$
c_4, c_5, c_{10}	$(y-1)(y^3-5y^2+6y-1)(y^4-y^3-2y^2+1)(y^{10}-10y^9+\cdots-18y+1)$ $\cdot(y^{45}-54y^{44}+\cdots+10150y-1)$
c_7, c_8, c_{11} c_{12}	$((y-1)^5)(y^3-5y^2+6y-1)(y^{10}-12y^9+\cdots-10y+1)$ $\cdot(y^{45}-37y^{44}+\cdots+812y-16)$
c_9	$(y-1)^4(y^4-y^3-2y^2+1)$ $\cdot(y^{10}-6y^9+3y^8+21y^7+5y^6-30y^5-38y^4-14y^3+4y^2+4y+1)$ $\cdot(y^{45}+4y^{44}+\cdots-1615y-841)$