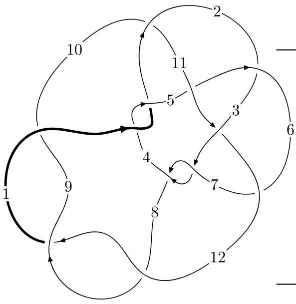
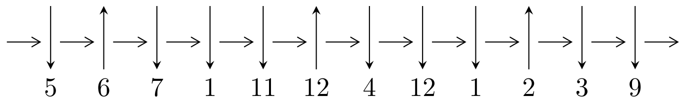
$12n_{0887}$ ($K12n_{0887}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

[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`).

$$
\begin{aligned}
I^u_1 &= \langle b+u,\ -u^4-2u^3-2u^2+a-2,\ u^5+3u^4+4u^3+2u^2+2u+1\rangle \\
I^u_2 &= \langle b+u,\ -270959u^{13}+772689u^{12}+\cdots+300046a-41334, \\
&\quad u^{14}-2u^{13}-u^{12}+2u^{11}+10u^{10}-9u^9-29u^8+46u^7+16u^6-61u^5+18u^4+22u^3-14u^2+3u-1\rangle \\
I^u_3 &= \langle -135792u^{13}+108799u^{12}+\cdots+300046b+457605, \\
&\quad -230771u^{13}+274896u^{12}+\cdots+300046a-29087, \\
&\quad u^{14}-2u^{13}-u^{12}+2u^{11}+10u^{10}-9u^9-29u^8+46u^7+16u^6-61u^5+18u^4+22u^3-14u^2+3u-1\rangle \\
I^u_4 &= \langle -104218005u^{13}+702274247u^{12}+\cdots+190982362b+773333180, \\
&\quad 544231529u^{13}-3353087149u^{12}+\cdots+763929448a-3082001714,\ u^{14}-7u^{13}+\cdots-8u+4\rangle \\
I^u_5 &= \langle -180047861u^{13}+1175460277u^{12}+\cdots+381964724b+1337790626, \\
&\quad 158399813u^{13}-1046466799u^{12}+\cdots+381964724a-2606371288,\ u^{14}-7u^{13}+\cdots-8u+4\rangle \\
I^u_6 &= \langle -103563766675u^{13}-565696363294u^{12}+\cdots+912579422726b+472806896800, \\
&\quad 218496302654u^{13}+1210683237470u^{12}+\cdots+912579422726a-6915383452949, \\
&\quad u^{14}+6u^{13}+\cdots-22u+4\rangle \\
I^u_7 &= \langle b+u,\ u^2+a-u+2,\ u^3-2u^2+3u-1\rangle \\
I^u_8 &= \langle b,\ a+u+1,\ u^2+u-1\rangle \\
I^u_9 &= \langle b,\ a^2-a-1,\ u-1\rangle \\
I^u_{10} &= \langle b+u,\ a+1,\ u^2+u-1\rangle
\end{aligned}
$$

$$
\begin{aligned}
I^v_1 &= \langle a,\ b+1,\ v^2-v-1\rangle \\
I^v_2 &= \langle a,\ b-v-1,\ v^2+v-1\rangle
\end{aligned}
$$

* 12 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 88 representations.

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

I. $I_1^u = \langle b + u,\ -u^4 - 2u^3 - 2u^2 + a - 2,\ u^5 + 3u^4 + 4u^3 + 2u^2 + 2u + 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^4 + 2u^3 + 2u^2 + 2 \\ -u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ u^4 + 2u^3 + u^2 + 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u \\ -u^4 - 3u^3 - 2u^2 - 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -2u^4 - 5u^3 - 5u^2 - u - 3 \\ -u^4 - 2u^3 - 2u^2 - 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -2u^4 - 5u^3 - 6u^2 - u - 3 \\ -u^4 - 3u^3 - 3u^2 - u - 2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^4 + 2u^3 + 2u^2 + u + 2 \\ u^2 + 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^4 + 3u^3 + 3u^2 + u + 2 \\ u^4 + u^3 + u^2 + u + 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^4 + 2u^3 + 2u^2 + u + 2 \\ -u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -2u^4 - 5u^3 - 5u^2 - u - 3 \\ -u^4 - 2u^3 - 3u^2 - u - 2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -5u^4 - 10u^3 - 10u^2 + 5u - 14$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.179794 + 0.731571I$ $a = 0.612209 - 0.379621I$ $b = -0.179794 - 0.731571I$	$-0.867863 - 1.011200I$	$-6.16207 + 5.55596I$
$u = 0.179794 - 0.731571I$ $a = 0.612209 + 0.379621I$ $b = -0.179794 + 0.731571I$	$-0.867863 + 1.011200I$	$-6.16207 - 5.55596I$
$u = -0.583195$ $a = 2.39920$ $b = 0.583195$	-12.9336	-18.9120
$u = -1.38820 + 1.04608I$ $a = -0.311811 - 0.840240I$ $b = 1.38820 - 1.04608I$	$-0.8900 - 17.3034I$	$-9.38193 + 9.43159I$
$u = -1.38820 - 1.04608I$ $a = -0.311811 + 0.840240I$ $b = 1.38820 + 1.04608I$	$-0.8900 + 17.3034I$	$-9.38193 - 9.43159I$

II. $\boldsymbol{I_2^u = \langle b+u,\ -2.71\times 10^5u^{13}+7.73\times 10^5u^{12}+\cdots+3.00\times 10^5a-4.13\times 10^4,\ u^{14}-2u^{13}+\cdots+3u-1\rangle}$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix}0.903058u^{13}-2.57524u^{12}+\cdots-24.1076u+0.137759\\-u\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}1.52512u^{13}-3.50280u^{12}+\cdots-26.3180u+0.906878\\-0.0795245u^{13}+0.200289u^{12}+\cdots-0.672414u-0.316548\end{pmatrix}$$

$$a_7 = \begin{pmatrix}2.15993u^{13}-4.52017u^{12}+\cdots-23.6907u-9.18261\\0.882721u^{13}-0.910147u^{12}+\cdots-2.84412u+0.797954\end{pmatrix}$$

$$a_5 = \begin{pmatrix}3.24733u^{13}-5.66143u^{12}+\cdots-27.2367u-6.98262\\0.622058u^{13}-0.927568u^{12}+\cdots-2.21041u+0.769119\end{pmatrix}$$

$$a_1 = \begin{pmatrix}2.48254u^{13}-4.44656u^{12}+\cdots-20.0427u+1.25212\\-1.00470u^{13}+1.07172u^{12}+\cdots+2.53232u-1.63459\end{pmatrix}$$

$$a_4 = \begin{pmatrix}4.54266u^{13}-6.82224u^{12}+\cdots-22.7975u-5.41276\\-1.44675u^{13}+2.26522u^{12}+\cdots+0.459690u-0.830456\end{pmatrix}$$

$$a_8 = \begin{pmatrix}0.842261u^{13}-0.940929u^{12}+\cdots-12.2541u-1.81451\\0.403411u^{13}-0.923072u^{12}+\cdots-1.22177u+0.811476\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}0.903058u^{13}-2.57524u^{12}+\cdots-23.1076u+0.137759\\-u\end{pmatrix}$$

$$a_9 = \begin{pmatrix}1.43263u^{13}-2.87432u^{12}+\cdots-11.5747u+2.51098\\-1.18195u^{13}+2.15844u^{12}+\cdots+0.00298621u-0.593296\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{5034313}{300046}u^{13}-\frac{7498729}{300046}u^{12}+\cdots-\frac{19035683}{300046}u-\frac{5404048}{150023}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_{11}	$u^{14} - 3u^{13} + \cdots + 4u - 1$
c_2, c_{10}	$u^{14} + 2u^{13} + \cdots - 3u - 1$
c_3, c_7, c_8 c_9, c_{12}	$u^{14} - 2u^{13} + \cdots + 3u + 1$
c_5	$u^{14} + 11u^{13} + \cdots + 32u + 16$
c_6	$u^{14} + 7u^{13} + \cdots + 8u + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_{11}	$y^{14} - 5y^{13} + \cdots - 12y + 1$
c_2, c_{10}	$y^{14} - 6y^{13} + \cdots + 19y + 1$
c_3, c_7, c_8 c_9, c_{12}	$y^{14} - 6y^{13} + \cdots - 29y + 1$
c_5	$y^{14} - 3y^{13} + \cdots - 1952y + 256$
c_6	$y^{14} - 3y^{13} + \cdots - 200y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.047510 + 0.114828I$ $a = -0.341221 - 0.956988I$ $b = 1.047510 - 0.114828I$	$4.40804 - 3.15243I$	$-3.06554 + 3.15957I$
$u = -1.047510 - 0.114828I$ $a = -0.341221 + 0.956988I$ $b = 1.047510 + 0.114828I$	$4.40804 + 3.15243I$	$-3.06554 - 3.15957I$
$u = -1.12842$ $a = 0.452479$ $b = 1.12842$	-9.22310	-8.50330
$u = 0.798926 + 0.304657I$ $a = 0.99674 + 1.31288I$ $b = -0.798926 - 0.304657I$	$1.89333 + 9.70124I$	$-6.29823 - 7.45288I$
$u = 0.798926 - 0.304657I$ $a = 0.99674 - 1.31288I$ $b = -0.798926 + 0.304657I$	$1.89333 - 9.70124I$	$-6.29823 + 7.45288I$
$u = 0.814809$ $a = -0.638076$ $b = -0.814809$	-2.25467	4.48040
$u = 0.952273 + 1.033700I$ $a = 0.055278 - 1.038740I$ $b = -0.952273 - 1.033700I$	$-3.68844 + 7.96253I$	$-13.0881 - 6.5287I$
$u = 0.952273 - 1.033700I$ $a = 0.055278 + 1.038740I$ $b = -0.952273 + 1.033700I$	$-3.68844 - 7.96253I$	$-13.0881 + 6.5287I$
$u = 1.48112 + 0.64101I$ $a = 0.584752 - 0.699870I$ $b = -1.48112 - 0.64101I$	$1.71371 + 2.93592I$	$-6.31999 - 3.15013I$
$u = 1.48112 - 0.64101I$ $a = 0.584752 + 0.699870I$ $b = -1.48112 + 0.64101I$	$1.71371 - 2.93592I$	$-6.31999 + 3.15013I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.033817 + 0.274663I$ $a = -4.04711 - 6.52748I$ $b = -0.033817 - 0.274663I$	$-2.83399 + 0.18487I$	$-71.9536 - 3.7001I$
$u = 0.033817 - 0.274663I$ $a = -4.04711 + 6.52748I$ $b = -0.033817 + 0.274663I$	$-2.83399 - 0.18487I$	$-71.9536 + 3.7001I$
$u = -1.06182 + 1.50747I$ $a = -0.155646 - 0.589873I$ $b = 1.06182 - 1.50747I$	$-2.33351 - 1.82562I$	$-14.2631 + 3.2385I$
$u = -1.06182 - 1.50747I$ $a = -0.155646 + 0.589873I$ $b = 1.06182 + 1.50747I$	$-2.33351 + 1.82562I$	$-14.2631 - 3.2385I$

III.

$\boldsymbol{I^u_3 = \langle -1.36\times 10^5 u^{13} + 1.09\times 10^5 u^{12} + \cdots + 3.00\times 10^5 b + 4.58\times 10^5,\ -2.31\times 10^5 u^{13} + 2.75\times 10^5 u^{12} + \cdots + 3.00\times 10^5 a - 2.91\times 10^4,\ u^{14} - 2u^{13} + \cdots + 3u - 1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.769119u^{13} - 0.916180u^{12} + \cdots + 2.57142u + 0.0969418 \\ 0.452571u^{13} - 0.362608u^{12} + \cdots + 3.66847u - 1.52512 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ 0.769119u^{13} - 0.916180u^{12} + \cdots + 2.57142u - 0.903058 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u \\ 0.622058u^{13} - 0.927568u^{12} + \cdots - 2.21041u + 0.769119 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1.63459u^{13} - 2.26449u^{12} + \cdots - 4.67318u + 2.37146 \\ 0.0748585u^{13} + 0.195667u^{12} + \cdots - 0.0832706u + 0.597648 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.593296u^{13} - 0.00463929u^{12} + \cdots - 1.94010u + 1.77690 \\ 0.00904861u^{13} - 0.187515u^{12} + \cdots + 1.78692u - 1.43263 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.316548u^{13} - 0.553572u^{12} + \cdots - 1.09706u + 1.62206 \\ 1.04594u^{13} - 1.11069u^{12} + \cdots - 2.61029u + 1.55507 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -1.55973u^{13} + 2.46016u^{12} + \cdots + 4.58991u - 1.77381 \\ -0.849263u^{13} + 0.915503u^{12} + \cdots + 0.0414870u - 0.171144 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.316548u^{13} - 0.553572u^{12} + \cdots - 1.09706u + 1.62206 \\ 0.452571u^{13} - 0.362608u^{12} + \cdots + 3.66847u - 1.52512 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1.63459u^{13} - 2.26449u^{12} + \cdots - 4.67318u + 2.37146 \\ -0.518507u^{13} + 0.943745u^{12} + \cdots + 6.19549u - 2.48254 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{5034313}{300046}u^{13} - \frac{7498729}{300046}u^{12} + \cdots - \frac{19035683}{300046}u - \frac{5404048}{150023}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_8 c_9, c_{12}	$u^{14} - 2u^{13} + \cdots + 3u + 1$
c_2, c_6	$u^{14} + 2u^{13} + \cdots - 3u - 1$
c_3, c_5, c_7	$u^{14} - 3u^{13} + \cdots + 4u - 1$
c_{10}	$u^{14} + 7u^{13} + \cdots + 8u + 4$
c_{11}	$u^{14} + 11u^{13} + \cdots + 32u + 16$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_8 c_9, c_{12}	$y^{14} - 6y^{13} + \cdots - 29y + 1$
c_2, c_6	$y^{14} - 6y^{13} + \cdots + 19y + 1$
c_3, c_5, c_7	$y^{14} - 5y^{13} + \cdots - 12y + 1$
c_{10}	$y^{14} - 3y^{13} + \cdots - 200y + 16$
c_{11}	$y^{14} - 3y^{13} + \cdots - 1952y + 256$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.047510 + 0.114828I$ $a = 0.532678 - 0.963275I$ $b = -0.813064 + 0.209153I$	$4.40804 - 3.15243I$	$-3.06554 + 3.15957I$
$u = -1.047510 - 0.114828I$ $a = 0.532678 + 0.963275I$ $b = -0.813064 - 0.209153I$	$4.40804 + 3.15243I$	$-3.06554 - 3.15957I$
$u = -1.12842$ $a = 1.51059$ $b = -1.41289$	-9.22310	-8.50330
$u = 0.798926 + 0.304657I$ $a = 0.60365 - 1.35256I$ $b = -1.38404 - 0.90864I$	$1.89333 + 9.70124I$	$-6.29823 - 7.45288I$
$u = 0.798926 - 0.304657I$ $a = 0.60365 + 1.35256I$ $b = -1.38404 + 0.90864I$	$1.89333 - 9.70124I$	$-6.29823 + 7.45288I$
$u = 0.814809$ $a = 1.51991$ $b = -0.489180$	-2.25467	4.48040
$u = 0.952273 + 1.033700I$ $a = -0.126389 + 0.932027I$ $b = 0.68808 + 1.33157I$	$-3.68844 + 7.96253I$	$-13.0881 - 6.5287I$
$u = 0.952273 - 1.033700I$ $a = -0.126389 - 0.932027I$ $b = 0.68808 - 1.33157I$	$-3.68844 - 7.96253I$	$-13.0881 + 6.5287I$
$u = 1.48112 + 0.64101I$ $a = -0.314710 + 0.661762I$ $b = 0.502930 + 0.079531I$	$1.71371 + 2.93592I$	$-6.31999 - 3.15013I$
$u = 1.48112 - 0.64101I$ $a = -0.314710 - 0.661762I$ $b = 0.502930 - 0.079531I$	$1.71371 - 2.93592I$	$-6.31999 + 3.15013I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.033817 + 0.274663I$ $a = -0.65600 + 1.33233I$ $b = -1.67998 + 1.44350I$	$-2.83399 + 0.18487I$	$-71.9536 - 3.7001I$
$u = 0.033817 - 0.274663I$ $a = -0.65600 - 1.33233I$ $b = -1.67998 - 1.44350I$	$-2.83399 - 0.18487I$	$-71.9536 + 3.7001I$
$u = -1.06182 + 1.50747I$ $a = -0.054484 - 0.391707I$ $b = 0.137112 - 1.014640I$	$-2.33351 - 1.82562I$	$-14.2631 + 3.2385I$
$u = -1.06182 - 1.50747I$ $a = -0.054484 + 0.391707I$ $b = 0.137112 + 1.014640I$	$-2.33351 + 1.82562I$	$-14.2631 - 3.2385I$

IV.

$\boldsymbol{I_4^u = \langle -1.04\times 10^8 u^{13} + 7.02\times 10^8 u^{12} + \cdots + 1.91\times 10^8 b + 7.73\times 10^8,\ 5.44\times 10^8 u^{13} - 3.35\times 10^9 u^{12} + \cdots + 7.64\times 10^8 a - 3.08\times 10^9,\ u^{14} - 7u^{13} + \cdots - 8u + 4\rangle}$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} -0.712411u^{13} + 4.38926u^{12} + \cdots - 2.59669u + 4.03441 \\ 0.545694u^{13} - 3.67717u^{12} + \cdots - 1.57476u - 4.04924 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.875598u^{13} + 5.65781u^{12} + \cdots + 0.909320u + 5.69320 \\ 0.385393u^{13} - 2.75155u^{12} + \cdots - 3.23742u - 3.54428 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.0219389u^{13} - 0.215291u^{12} + \cdots + 1.15937u + 1.25670 \\ 0.633512u^{13} - 3.93870u^{12} + \cdots + 0.183271u - 2.97735 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.755674u^{13} - 4.78868u^{12} + \cdots - 1.91812u - 0.628287 \\ -0.597612u^{13} + 3.80078u^{12} + \cdots - 1.66488u + 2.84964 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.260975u^{13} + 2.16396u^{12} + \cdots + 9.73485u - 0.384135 \\ -0.501039u^{13} + 2.86343u^{12} + \cdots - 5.41711u + 3.02270 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.704558u^{13} - 4.30612u^{12} + \cdots + 8.29987u - 4.60248 \\ -0.260478u^{13} + 1.67796u^{12} + \cdots - 5.13681u + 3.89354 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.335015u^{13} + 1.43202u^{12} + \cdots - 15.3126u + 7.02714 \\ 1.42679u^{13} - 8.60180u^{12} + \cdots + 12.2718u - 9.63626 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -1.25811u^{13} + 8.06643u^{12} + \cdots - 1.02194u + 8.08364 \\ 0.545694u^{13} - 3.67717u^{12} + \cdots - 1.57476u - 4.04924 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.347603u^{13} + 2.65881u^{12} + \cdots + 8.17214u - 0.167960 \\ -0.100728u^{13} + 0.305485u^{12} + \cdots - 5.18215u + 0.0153700 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{107270862}{95491181}u^{13} + \frac{727704385}{95491181}u^{12} + \cdots + \frac{409479316}{95491181}u + \frac{1040923639}{95491181}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5	$u^{14} - 2u^{13} + \cdots + 3u + 1$
c_2	$u^{14} + 7u^{13} + \cdots + 8u + 4$
c_3, c_7	$u^{14} + 11u^{13} + \cdots + 32u + 16$
c_6	$u^{14} + 2u^{13} + \cdots - 3u - 1$
c_8, c_9, c_{11} c_{12}	$u^{14} - 3u^{13} + \cdots + 4u - 1$
c_{10}	$u^{14} - 6u^{13} + \cdots + 22u + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5	$y^{14} - 6y^{13} + \cdots - 29y + 1$
c_2	$y^{14} - 3y^{13} + \cdots - 200y + 16$
c_3, c_7	$y^{14} - 3y^{13} + \cdots - 1952y + 256$
c_6	$y^{14} - 6y^{13} + \cdots + 19y + 1$
c_8, c_9, c_{11} c_{12}	$y^{14} - 5y^{13} + \cdots - 12y + 1$
c_{10}	$y^{14} - 2y^{13} + \cdots - 1404y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.137112 + 1.014640I$ $a = \quad 0.949623 + 0.496773I$ $b = \quad 0.173211 + 0.432516I$	$-2.33351 - 1.82562I$	$-14.2631 + 3.2385I$
$u = -0.137112 - 1.014640I$ $a = \quad 0.949623 - 0.496773I$ $b = \quad 0.173211 - 0.432516I$	$-2.33351 + 1.82562I$	$-14.2631 - 3.2385I$
$u = \quad 0.813064 + 0.209153I$ $a = -0.79509 + 1.24859I$ $b = \quad 1.36286 + 0.56983I$	$4.40804 + 3.15243I$	$-3.06554 - 3.15957I$
$u = \quad 0.813064 - 0.209153I$ $a = -0.79509 - 1.24859I$ $b = \quad 1.36286 - 0.56983I$	$4.40804 - 3.15243I$	$-3.06554 + 3.15957I$
$u = \quad 1.41289$ $a = \quad 0.905913$ $b = -0.103858$	-9.22310	-8.50330
$u = -0.502930 + 0.079531I$ $a = -2.17945 + 1.56752I$ $b = \quad 1.302400 + 0.217496I$	$1.71371 - 2.93592I$	$-6.31999 + 3.15013I$
$u = -0.502930 - 0.079531I$ $a = -2.17945 - 1.56752I$ $b = \quad 1.302400 - 0.217496I$	$1.71371 + 2.93592I$	$-6.31999 - 3.15013I$
$u = -0.68808 + 1.33157I$ $a = \quad 0.179430 + 0.509070I$ $b = \quad 0.38414 + 1.74730I$	$-3.68844 - 7.96253I$	$-13.0881 + 6.5287I$
$u = -0.68808 - 1.33157I$ $a = \quad 0.179430 - 0.509070I$ $b = \quad 0.38414 - 1.74730I$	$-3.68844 + 7.96253I$	$-13.0881 - 6.5287I$
$u = \quad 0.489180$ $a = \quad 0.427228$ $b = -1.34067$	-2.25467	4.48040

Solutions to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.38404 + 0.90864I$ $a = -0.389974 + 0.785688I$ $b = 1.50686 + 1.02119I$	$1.89333 + 9.70124I$	$-6.29823 - 7.45288I$
$u = 1.38404 - 0.90864I$ $a = -0.389974 - 0.785688I$ $b = 1.50686 - 1.02119I$	$1.89333 - 9.70124I$	$-6.29823 + 7.45288I$
$u = 1.67998 + 1.44350I$ $a = 0.318890 - 0.239126I$ $b = -1.00721 - 1.50515I$	$-2.83399 - 0.18487I$	$-71.9536 + 3.7001I$
$u = 1.67998 - 1.44350I$ $a = 0.318890 + 0.239126I$ $b = -1.00721 + 1.50515I$	$-2.83399 + 0.18487I$	$-71.9536 - 3.7001I$

V.

$\boldsymbol{I_5^u = \langle -1.80\times10^{8}u^{13} + 1.18\times10^{9}u^{12} + \cdots + 3.82\times10^{8}b + 1.34\times10^{9},\ 1.58\times10^{8}u^{13} - 1.05\times10^{9}u^{12} + \cdots + 3.82\times10^{8}a - 2.61\times10^{9},\ u^{14} - 7u^{13} + \cdots - 8u + 4\rangle}$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} -0.414697u^{13} + 2.73969u^{12} + \cdots - 3.00966u + 6.82359 \\ 0.471373u^{13} - 3.07741u^{12} + \cdots + 1.31159u - 3.50239 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -1.01231u^{13} + 6.54047u^{12} + \cdots - 4.67453u + 9.67323 \\ 0.740305u^{13} - 4.82414u^{12} + \cdots + 1.98120u - 5.03242 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -1.16635u^{13} + 7.52225u^{12} + \cdots + 5.77401u + 5.72657 \\ 0.0197023u^{13} + 0.00389654u^{12} + \cdots - 1.19294u + 0.280982 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -1.71772u^{13} + 11.1301u^{12} + \cdots + 1.42987u + 9.42170 \\ 0.687501u^{13} - 4.38043u^{12} + \cdots - 0.398232u - 2.73048 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.00384251u^{13} + 0.0738308u^{12} + \cdots - 1.45584u + 5.15141 \\ -0.225586u^{13} + 1.44342u^{12} + \cdots + 2.94879u - 1.39041 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -1.25811u^{13} + 8.06643u^{12} + \cdots - 1.02194u + 8.08364 \\ 0.859030u^{13} - 5.23410u^{12} + \cdots + 6.30713u - 5.98392 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -2.51963u^{13} + 16.1117u^{12} + \cdots + 5.02726u + 9.20450 \\ 1.26962u^{13} - 7.85940u^{12} + \cdots - 3.00965u - 2.20930 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.886071u^{13} + 5.81710u^{12} + \cdots - 4.32125u + 10.3260 \\ 0.471373u^{13} - 3.07741u^{12} + \cdots + 1.31159u - 3.50239 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.755674u^{13} - 4.78868u^{12} + \cdots - 1.91812u - 0.628287 \\ -0.337134u^{13} + 2.12282u^{12} + \cdots + 2.47194u - 1.04390 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{107270862}{95491181}u^{13} + \frac{727704385}{95491181}u^{12} + \cdots + \frac{409479316}{95491181}u + \frac{1040923639}{95491181}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{14} + 11u^{13} + \cdots + 32u + 16$
c_2	$u^{14} + 7u^{13} + \cdots + 8u + 4$
c_3, c_7, c_{11}	$u^{14} - 2u^{13} + \cdots + 3u + 1$
c_5, c_8, c_9 c_{12}	$u^{14} - 3u^{13} + \cdots + 4u - 1$
c_6	$u^{14} - 6u^{13} + \cdots + 22u + 4$
c_{10}	$u^{14} + 2u^{13} + \cdots - 3u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{14} - 3y^{13} + \cdots - 1952y + 256$
c_2	$y^{14} - 3y^{13} + \cdots - 200y + 16$
c_3, c_7, c_{11}	$y^{14} - 6y^{13} + \cdots - 29y + 1$
c_5, c_8, c_9 c_{12}	$y^{14} - 5y^{13} + \cdots - 12y + 1$
c_6	$y^{14} - 2y^{13} + \cdots - 1404y + 16$
c_{10}	$y^{14} - 6y^{13} + \cdots + 19y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.137112+1.014640I$ $a=\ \ 0.238273-0.671186I$ $b=\ \ 1.06182-1.50747I$	$-2.33351-1.82562I$	$-14.2631+3.2385I$
$u=-0.137112-1.014640I$ $a=\ \ 0.238273+0.671186I$ $b=\ \ 1.06182+1.50747I$	$-2.33351+1.82562I$	$-14.2631-3.2385I$
$u=\ \ 0.813064+0.209153I$ $a=-0.833666-1.101810I$ $b=\ \ 1.047510+0.114828I$	$4.40804+3.15243I$	$-3.06554-3.15957I$
$u=\ \ 0.813064-0.209153I$ $a=-0.833666+1.101810I$ $b=\ \ 1.047510-0.114828I$	$4.40804-3.15243I$	$-3.06554+3.15957I$
$u=\ \ 1.41289$ $a=-1.20645$ $b=\ \ 1.12842$	-9.22310	-8.50330
$u=-0.502930+0.079531I$ $a=\ \ 1.48829+1.78312I$ $b=-1.48112+0.64101I$	$1.71371-2.93592I$	$-6.31999+3.15013I$
$u=-0.502930-0.079531I$ $a=\ \ 1.48829-1.78312I$ $b=-1.48112-0.64101I$	$1.71371+2.93592I$	$-6.31999-3.15013I$
$u=-0.68808+1.33157I$ $a=-0.116679+0.874213I$ $b=-0.952273+1.033700I$	$-3.68844-7.96253I$	$-13.0881+6.5287I$
$u=-0.68808-1.33157I$ $a=-0.116679-0.874213I$ $b=-0.952273-1.033700I$	$-3.68844+7.96253I$	$-13.0881-6.5287I$
$u=\ \ 0.489180$ $a=\ \ 2.53166$ $b=-0.814809$	-2.25467	4.48040

Solutions to I_5^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.38404 + 0.90864I$ $a = 0.154326 - 0.749194I$ $b = -0.798926 - 0.304657I$	$1.89333 + 9.70124I$	$-6.29823 - 7.45288I$
$u = 1.38404 - 0.90864I$ $a = 0.154326 + 0.749194I$ $b = -0.798926 + 0.304657I$	$1.89333 - 9.70124I$	$-6.29823 + 7.45288I$
$u = 1.67998 + 1.44350I$ $a = -0.093149 + 0.160468I$ $b = -0.033817 + 0.274663I$	$-2.83399 - 0.18487I$	$-71.9536 + 3.7001I$
$u = 1.67998 - 1.44350I$ $a = -0.093149 - 0.160468I$ $b = -0.033817 - 0.274663I$	$-2.83399 + 0.18487I$	$-71.9536 - 3.7001I$

VI. $I^u_6 = \langle -1.04\times10^{11}u^{13} - 5.66\times10^{11}u^{12} + \cdots + 9.13\times10^{11}b + 4.73\times10^{11},\ 2.18\times10^{11}u^{13} + 1.21\times10^{12}u^{12} + \cdots + 9.13\times10^{11}a - 6.92\times10^{12},\ u^{14} + 6u^{13} + \cdots - 22u + 4\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-0.239427u^{13} - 1.32666u^{12} + \cdots + 35.5972u + 7.57784\\0.113485u^{13} + 0.619887u^{12} + \cdots - 5.68600u - 0.518099\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-0.129525u^{13} - 0.890634u^{12} + \cdots + 37.9076u + 8.53555\\-0.170923u^{13} - 0.751035u^{12} + \cdots - 0.331882u - 1.41165\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-0.272337u^{13} - 1.64583u^{12} + \cdots + 47.2960u + 12.8665\\0.0661284u^{13} + 0.355095u^{12} + \cdots - 6.57783u - 0.988497\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-0.385980u^{13} - 2.16522u^{12} + \cdots + 38.6580u + 10.3813\\0.0370222u^{13} + 0.196920u^{12} + \cdots - 5.74828u - 0.941260\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-0.533234u^{13} - 3.11779u^{12} + \cdots + 76.0031u + 17.4936\\0.131402u^{13} + 0.701437u^{12} + \cdots - 8.56416u - 1.65838\end{pmatrix}$$
$$a_4 = \begin{pmatrix}0.557807u^{13} + 3.42037u^{12} + \cdots - 89.4565u - 19.4330\\-0.136074u^{13} - 0.709093u^{12} + \cdots + 9.17768u + 1.95251\end{pmatrix}$$
$$a_8 = \begin{pmatrix}0.631605u^{13} + 3.86470u^{12} + \cdots - 91.9396u - 22.1117\\-0.0965292u^{13} - 0.519499u^{12} + \cdots + 10.0526u + 2.25278\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-0.352912u^{13} - 1.94655u^{12} + \cdots + 41.2832u + 8.09594\\0.113485u^{13} + 0.619887u^{12} + \cdots - 5.68600u - 0.518099\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-0.414595u^{13} - 2.61897u^{12} + \cdots + 75.0173u + 17.6852\\-0.0816170u^{13} - 0.301896u^{12} + \cdots - 5.76242u - 2.13294\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -\frac{1713683330863}{456289711363}u^{13} - \frac{819360607574}{456289711363}u^{12} + \cdots + \frac{7084810660394}{456289711363}u - \frac{5008190287626}{456289711363}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_4 c_7	$u^{14} - 3u^{13} + \cdots + 4u - 1$
c_2	$u^{14} - 6u^{13} + \cdots + 22u + 4$
c_5, c_{11}	$u^{14} - 2u^{13} + \cdots + 3u + 1$
c_6, c_{10}	$u^{14} + 7u^{13} + \cdots + 8u + 4$
c_8, c_9, c_{12}	$u^{14} + 11u^{13} + \cdots + 32u + 16$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_7	$y^{14} - 5y^{13} + \cdots - 12y + 1$
c_2	$y^{14} - 2y^{13} + \cdots - 1404y + 16$
c_5, c_{11}	$y^{14} - 6y^{13} + \cdots - 29y + 1$
c_6, c_{10}	$y^{14} - 3y^{13} + \cdots - 200y + 16$
c_8, c_9, c_{12}	$y^{14} - 3y^{13} + \cdots - 1952y + 256$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.302400 + 0.217496I$ $a = -0.605686 - 0.839543I$ $b = 0.502930 + 0.079531I$	$1.71371 + 2.93592I$	$-6.31999 - 3.15013I$
$u = -1.302400 - 0.217496I$ $a = -0.605686 + 0.839543I$ $b = 0.502930 - 0.079531I$	$1.71371 - 2.93592I$	$-6.31999 + 3.15013I$
$u = 1.34067$ $a = 0.155885$ $b = -0.489180$	-2.25467	4.48040
$u = -1.36286 + 0.56983I$ $a = 0.345177 + 0.767196I$ $b = -0.813064 + 0.209153I$	$4.40804 - 3.15243I$	$-3.06554 + 3.15957I$
$u = -1.36286 - 0.56983I$ $a = 0.345177 - 0.767196I$ $b = -0.813064 - 0.209153I$	$4.40804 + 3.15243I$	$-3.06554 - 3.15957I$
$u = -0.173211 + 0.432516I$ $a = -1.27801 + 1.97823I$ $b = 0.137112 + 1.014640I$	$-2.33351 + 1.82562I$	$-14.2631 - 3.2385I$
$u = -0.173211 - 0.432516I$ $a = -1.27801 - 1.97823I$ $b = 0.137112 - 1.014640I$	$-2.33351 - 1.82562I$	$-14.2631 + 3.2385I$
$u = -0.38414 + 1.74730I$ $a = 0.156968 + 0.424100I$ $b = 0.68808 + 1.33157I$	$-3.68844 + 7.96253I$	$-13.0881 - 6.5287I$
$u = -0.38414 - 1.74730I$ $a = 0.156968 - 0.424100I$ $b = 0.68808 - 1.33157I$	$-3.68844 - 7.96253I$	$-13.0881 + 6.5287I$
$u = 1.00721 + 1.50515I$ $a = 0.297399 - 0.386252I$ $b = -1.67998 - 1.44350I$	$-2.83399 - 0.18487I$	$-71.9536 + 3.7001I$

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00721 - 1.50515I$ $a = 0.297399 + 0.386252I$ $b = -1.67998 + 1.44350I$	$-2.83399 + 0.18487I$	$-71.9536 - 3.7001I$
$u = -1.50686 + 1.02119I$ $a = 0.344190 + 0.719748I$ $b = -1.38404 + 0.90864I$	$1.89333 - 9.70124I$	$-6.29823 + 7.45288I$
$u = -1.50686 - 1.02119I$ $a = 0.344190 - 0.719748I$ $b = -1.38404 - 0.90864I$	$1.89333 + 9.70124I$	$-6.29823 - 7.45288I$
$u = 0.103858$ $a = 12.3240$ $b = -1.41289$	-9.22310	-8.50330

VII. $I_7^u = \langle b + u,\ u^2 + a - u + 2,\ u^3 - 2u^2 + 3u - 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -5u^2 - 14$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_7^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.78492 + 1.30714I$ $a = -0.122561 - 0.744862I$ $b = -0.78492 - 1.30714I$	$-1.98242 + 9.42707I$	$-8.53741 - 10.26002I$
$u = \quad 0.78492 - 1.30714I$ $a = -0.122561 + 0.744862I$ $b = -0.78492 + 1.30714I$	$-1.98242 - 9.42707I$	$-8.53741 + 10.26002I$
$u = \quad 0.430160$ $a = -1.75488$ $b = -0.430160$	-2.61489	-14.9250

VIII. $I_8^u = \langle b,\ a+u+1,\ u^2+u-1\rangle$

(i) Arc colorings

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

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

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

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

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

$$a_7 = \begin{pmatrix} u \\ -2u+2 \end{pmatrix}$$

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

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

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

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

$$a_{10} = \begin{pmatrix} -u-1 \\ 0 \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -17$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_8^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.618034$ $a = -1.61803$ $b = 0$	-2.63189	-17.0000
$u = -1.61803$ $a = 0.618034$ $b = 0$	-10.5276	-17.0000

IX. $I_9^u = \langle b,\ a^2 - a - 1,\ u - 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -17$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_9^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -0.618034$ $b = 0$	-2.63189	-17.0000
$u = 1.00000$ $a = 1.61803$ $b = 0$	-10.5276	-17.0000

X. $I^u_{10} = \langle b+u,\ a+1,\ u^2+u-1\rangle$

(i) Arc colorings

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

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

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

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

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

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

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

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

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

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

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -17$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_{10}	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.618034$ $a = -1.00000$ $b = -0.618034$	-2.63189	-17.0000
$u = -1.61803$ $a = -1.00000$ $b = 1.61803$	-10.5276	-17.0000

XI. $I_1^v = \langle a,\ b+1,\ v^2 - v - 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -17$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v=-0.618034$ $a=\quad 0$ $b=-1.00000$	-2.63189	-17.0000
$v=\quad 1.61803$ $a=\quad 0$ $b=-1.00000$	-10.5276	-17.0000

XII. $I_2^v = \langle a,\ b - v - 1,\ v^2 + v - 1\rangle$

(i) Arc colorings

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

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

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

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

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

$$a_7 = \begin{pmatrix} 2v + 1 \\ -v - 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} v \\ -v - 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 2 \\ -v - 2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -v - 2 \\ v + 2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -2 \\ v + 2 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} -v - 3 \\ 2v + 3 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -17$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 0.618034$ $a = 0$ $b = 1.61803$	-10.5276	-17.0000
$v = -1.61803$ $a = 0$ $b = -0.618034$	-2.63189	-17.0000

XIII. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_3, c_5 c_8, c_9, c_{11}	$(u-1)^4(u^2+u-1)^3(u^3+u^2-1)(u^5+2u^4-4u^2-3u-1)$ $\cdot((u^{14}-3u^{13}+\cdots+4u-1)^2)(u^{14}-2u^{13}+\cdots+3u+1)^2$ $\cdot(u^{14}+11u^{13}+\cdots+32u+16)$
c_2, c_6, c_{10}	$u^4(u-1)^2(u^2+u-1)^2(u^3-2u^2+3u-1)$ $\cdot(u^5-3u^4+4u^3-2u^2+2u-1)(u^{14}-6u^{13}+\cdots+22u+4)$ $\cdot((u^{14}+2u^{13}+\cdots-3u-1)^2)(u^{14}+7u^{13}+\cdots+8u+4)^2$
c_4, c_7, c_{12}	$(u+1)^4(u^2-u-1)^3(u^3-u^2+1)(u^5+2u^4-4u^2-3u-1)$ $\cdot((u^{14}-3u^{13}+\cdots+4u-1)^2)(u^{14}-2u^{13}+\cdots+3u+1)^2$ $\cdot(u^{14}+11u^{13}+\cdots+32u+16)$

XIV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_5, c_7, c_8 c_9, c_{11}, c_{12}	$(y-1)^4(y^2-3y+1)^3(y^3-y^2+2y-1)$ $\cdot\,(y^5-4y^4+10y^3-12y^2+y-1)(y^{14}-6y^{13}+\cdots-29y+1)^2$ $\cdot\,((y^{14}-5y^{13}+\cdots-12y+1)^2)(y^{14}-3y^{13}+\cdots-1952y+256)$
c_2, c_6, c_{10}	$y^4(y-1)^2(y^2-3y+1)^2(y^3+2y^2+5y-1)(y^5-y^4+\cdots+6y^2-1)$ $\cdot\,((y^{14}-6y^{13}+\cdots+19y+1)^2)(y^{14}-3y^{13}+\cdots-200y+16)^2$ $\cdot\,(y^{14}-2y^{13}+\cdots-1404y+16)$