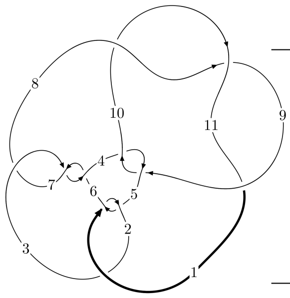
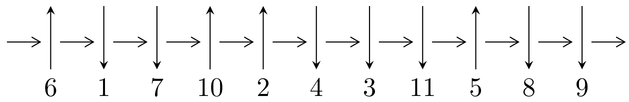
$11a_{102}$ ($K11a_{102}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 2.87536 \times 10^{21} u^{41} - 3.96737 \times 10^{21} u^{40} + \cdots + 5.90778 \times 10^{21} b - 6.72165 \times 10^{21}, \\
& 2.13130 \times 10^{22} u^{41} - 4.18187 \times 10^{22} u^{40} + \cdots + 7.08933 \times 10^{22} a - 3.54422 \times 10^{23},\ u^{42} - 2u^{41} + \cdots - 36u + \\
I_2^u = \langle & -u^{12} - 4u^{10} - 3u^9 - 6u^8 - 9u^7 - 7u^6 - 9u^5 - 7u^4 - 3u^3 - 3u^2 + b + 1, \\
& -u^{13} - u^{12} - 4u^{11} - 6u^{10} - 8u^9 - 12u^8 - 11u^7 - 11u^6 - 9u^5 - 3u^4 - u^3 + u^2 + a + 3u + 1, \\
& u^{15} + 5u^{13} + 3u^{12} + 10u^{11} + 12u^{10} + 14u^9 + 18u^8 + 17u^7 + 13u^6 + 13u^5 + 5u^4 + 3u^3 + u^2 - u - 1 \rangle \\
I_3^u = \langle & b,\ u^3 + 2u^2 + 2a + 3u + 1,\ u^4 + u^3 + u^2 + 1 \rangle \\
I_4^u = \langle & au + 5b - 2a - 3u + 1,\ a^2 - a + 5u + 4,\ u^2 + 1 \rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 65 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. $\boldsymbol{I_1^u =}$
$\boldsymbol{\langle 2.88\times10^{21}u^{41}-3.97\times10^{21}u^{40}+\cdots+5.91\times10^{21}b-6.72\times10^{21},\ 2.13\times10^{22}u^{41}-4.18\times10^{22}u^{40}+\cdots+7.09\times10^{22}a-3.54\times10^{23},\ u^{42}-2u^{41}+\cdots-36u+9\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_6 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u\\u^3+u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-u^3\\u^5+u^3+u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-0.300635u^{41}+0.589882u^{40}+\cdots-15.7376u+4.99938\\-0.486707u^{41}+0.671550u^{40}+\cdots-9.85137u+1.13776\end{pmatrix}$$
$$a_4 = \begin{pmatrix}0.279236u^{41}-0.941462u^{40}+\cdots+18.2040u-4.05148\\0.463095u^{41}-1.13764u^{40}+\cdots+27.2892u-7.18073\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0.797859u^{41}-1.13262u^{40}+\cdots+15.2674u-0.433684\\0.308200u^{41}-0.215226u^{40}+\cdots-6.59502u+3.37739\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0.186072u^{41}-0.0816676u^{40}+\cdots-5.88625u+3.86161\\-0.486707u^{41}+0.671550u^{40}+\cdots-9.85137u+1.13776\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-0.377575u^{41}+0.483319u^{40}+\cdots+4.32261u-2.55226\\-0.157428u^{41}+0.0210348u^{40}+\cdots+8.77277u-2.82010\end{pmatrix}$$
$$a_8 = \begin{pmatrix}0.626320u^{41}-0.755435u^{40}+\cdots+11.7778u+0.221051\\0.157428u^{41}-0.0210348u^{40}+\cdots-8.77277u+2.82010\end{pmatrix}$$
$$a_8 = \begin{pmatrix}0.626320u^{41}-0.755435u^{40}+\cdots+11.7778u+0.221051\\0.157428u^{41}-0.0210348u^{40}+\cdots-8.77277u+2.82010\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{3375308932150515076741}{1575406929572180520889\,6}u^{41} - \frac{7093505981346082336715}{1575406929572180520889\,6}u^{40} + \cdots - \frac{9909098900956256929172\,89}{1575406929572180520889\,6}u + \frac{3060486213538661061875\,53}{1575406929572180520889\,6}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{42} - 2u^{41} + \cdots - 36u + 9$
c_2	$u^{42} + 18u^{41} + \cdots + 936u + 81$
c_3, c_6, c_7	$u^{42} - 2u^{41} + \cdots - 48u + 9$
c_4, c_9	$u^{42} - 2u^{41} + \cdots - 48u + 64$
c_8, c_{10}, c_{11}	$u^{42} - 4u^{41} + \cdots + 3u + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{42} + 18y^{41} + \cdots + 936y + 81$
c_2	$y^{42} + 18y^{41} + \cdots + 43092y + 6561$
c_3, c_6, c_7	$y^{42} + 42y^{41} + \cdots + 648y + 81$
c_4, c_9	$y^{42} + 24y^{41} + \cdots + 37632y + 4096$
c_8, c_{10}, c_{11}	$y^{42} - 40y^{41} + \cdots + 431y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.321244 + 0.924907I$ $a = 0.68951 - 2.35177I$ $b = 0.16746 - 1.77078I$	$-8.34619 + 1.31277I$	$-3.80780 - 5.75825I$
$u = 0.321244 - 0.924907I$ $a = 0.68951 + 2.35177I$ $b = 0.16746 + 1.77078I$	$-8.34619 - 1.31277I$	$-3.80780 + 5.75825I$
$u = -0.781793 + 0.668749I$ $a = -0.179012 - 0.710623I$ $b = 0.864043 - 0.487802I$	$6.85342 - 1.08907I$	$3.57208 + 1.87970I$
$u = -0.781793 - 0.668749I$ $a = -0.179012 + 0.710623I$ $b = 0.864043 + 0.487802I$	$6.85342 + 1.08907I$	$3.57208 - 1.87970I$
$u = 0.786749 + 0.566093I$ $a = -0.122149 - 0.366661I$ $b = -0.176094 + 1.096880I$	$-4.33907 + 0.92313I$	$-6.58218 - 1.96577I$
$u = 0.786749 - 0.566093I$ $a = -0.122149 + 0.366661I$ $b = -0.176094 - 1.096880I$	$-4.33907 - 0.92313I$	$-6.58218 + 1.96577I$
$u = 1.010940 + 0.277119I$ $a = 0.118893 + 0.317524I$ $b = -0.708157 + 1.185080I$	$-0.13244 - 8.79986I$	$-2.66885 + 5.03818I$
$u = 1.010940 - 0.277119I$ $a = 0.118893 - 0.317524I$ $b = -0.708157 - 1.185080I$	$-0.13244 + 8.79986I$	$-2.66885 - 5.03818I$
$u = 0.443155 + 0.836892I$ $a = 0.077559 + 0.409124I$ $b = 0.533447 - 0.314098I$	$-0.14555 + 1.89662I$	$-0.46549 - 4.15100I$
$u = 0.443155 - 0.836892I$ $a = 0.077559 - 0.409124I$ $b = 0.533447 + 0.314098I$	$-0.14555 - 1.89662I$	$-0.46549 + 4.15100I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.854547 + 0.372087I$ $a = 0.040427 - 0.627535I$ $b = 0.641022 - 1.066170I$	$5.09584 - 4.47116I$	$1.35353 + 3.51083I$
$u = 0.854547 - 0.372087I$ $a = 0.040427 + 0.627535I$ $b = 0.641022 + 1.066170I$	$5.09584 + 4.47116I$	$1.35353 - 3.51083I$
$u = -0.349226 + 1.057360I$ $a = 0.73971 + 2.07726I$ $b = -0.065056 + 1.043400I$	$-3.60913 - 1.10388I$	$-10.34002 + 1.20607I$
$u = -0.349226 - 1.057360I$ $a = 0.73971 - 2.07726I$ $b = -0.065056 - 1.043400I$	$-3.60913 + 1.10388I$	$-10.34002 - 1.20607I$
$u = 0.551141 + 1.033680I$ $a = -0.68540 + 2.16562I$ $b = 0.285987 + 1.305530I$	$1.07465 + 4.16567I$	$-3.63331 - 3.63134I$
$u = 0.551141 - 1.033680I$ $a = -0.68540 - 2.16562I$ $b = 0.285987 - 1.305530I$	$1.07465 - 4.16567I$	$-3.63331 + 3.63134I$
$u = 0.438210 + 1.089350I$ $a = -0.210411 - 0.547185I$ $b = -1.120410 + 0.266857I$	$-5.07603 + 3.61628I$	$-8.76999 - 3.97464I$
$u = 0.438210 - 1.089350I$ $a = -0.210411 + 0.547185I$ $b = -1.120410 - 0.266857I$	$-5.07603 - 3.61628I$	$-8.76999 + 3.97464I$
$u = 0.629402 + 0.513854I$ $a = -0.454894 + 1.264650I$ $b = -0.532736 + 1.051670I$	$2.61565 + 0.48442I$	$-1.18826 - 1.33056I$
$u = 0.629402 - 0.513854I$ $a = -0.454894 - 1.264650I$ $b = -0.532736 - 1.051670I$	$2.61565 - 0.48442I$	$-1.18826 + 1.33056I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.705333+0.962448I$ $a=-0.390598+0.325640I$ $b=-0.865578-0.213500I$	$5.99098-4.47238I$	$2.83567+4.51985I$
$u=-0.705333-0.962448I$ $a=-0.390598-0.325640I$ $b=-0.865578+0.213500I$	$5.99098+4.47238I$	$2.83567-4.51985I$
$u=-0.715912+0.371485I$ $a=\ 0.682256+1.165700I$ $b=-1.056740+0.582481I$	$1.90495+2.38439I$	$-0.748912-0.739188I$
$u=-0.715912-0.371485I$ $a=\ 0.682256-1.165700I$ $b=-1.056740-0.582481I$	$1.90495-2.38439I$	$-0.748912+0.739188I$
$u=-0.515614+1.080020I$ $a=-1.12031-1.77848I$ $b=\ 0.439748-1.104040I$	$-2.45148-5.86761I$	$-6.25811+7.21816I$
$u=-0.515614-1.080020I$ $a=-1.12031+1.77848I$ $b=\ 0.439748+1.104040I$	$-2.45148+5.86761I$	$-6.25811-7.21816I$
$u=-0.107934+0.771038I$ $a=-1.21133+1.83186I$ $b=\ 0.383646+0.488117I$	$-2.24911-0.80040I$	$-10.34390-2.30566I$
$u=-0.107934-0.771038I$ $a=-1.21133-1.83186I$ $b=\ 0.383646-0.488117I$	$-2.24911+0.80040I$	$-10.34390+2.30566I$
$u=-0.565953+1.102330I$ $a=\ 0.712921-0.245709I$ $b=\ 1.324750+0.452245I$	$-0.22800-7.29302I$	$-3.85885+5.40090I$
$u=-0.565953-1.102330I$ $a=\ 0.712921+0.245709I$ $b=\ 1.324750-0.452245I$	$-0.22800+7.29302I$	$-3.85885-5.40090I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.207458+1.224160I$ $a=-0.48946-1.74308I$ $b=-0.26287-1.45352I$	$-11.12090+1.23717I$	$-12.55029-0.91395I$
$u=-0.207458-1.224160I$ $a=-0.48946+1.74308I$ $b=-0.26287+1.45352I$	$-11.12090-1.23717I$	$-12.55029+0.91395I$
$u=\ 0.611787+1.141700I$ $a=\ 0.77774-1.97693I$ $b=-0.578718-1.259990I$	$2.78819+9.89486I$	$-2.06286-7.44629I$
$u=\ 0.611787-1.141700I$ $a=\ 0.77774+1.97693I$ $b=-0.578718+1.259990I$	$2.78819-9.89486I$	$-2.06286+7.44629I$
$u=-0.604626+1.165380I$ $a=\ 1.06930+1.51130I$ $b=-0.62853+1.29344I$	$-8.35687-9.85804I$	$-8.74565+6.87807I$
$u=-0.604626-1.165380I$ $a=\ 1.06930-1.51130I$ $b=-0.62853-1.29344I$	$-8.35687+9.85804I$	$-8.74565-6.87807I$
$u=-0.959413+0.912281I$ $a=\ 0.315723+0.170462I$ $b=-0.128054+0.731912I$	$4.54070-3.45793I$	$-8.56940+4.77216I$
$u=-0.959413-0.912281I$ $a=\ 0.315723-0.170462I$ $b=-0.128054-0.731912I$	$4.54070+3.45793I$	$-8.56940-4.77216I$
$u=\ 0.239207+0.573323I$ $a=\ 0.793218+0.179899I$ $b=-0.296599-0.453205I$	$0.165616+1.199760I$	$1.09413-6.46841I$
$u=\ 0.239207-0.573323I$ $a=\ 0.793218-0.179899I$ $b=-0.296599+0.453205I$	$0.165616-1.199760I$	$1.09413+6.46841I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.626883 + 1.232800I$ $a = -0.73702 + 1.79556I$ $b = 0.77943 + 1.32376I$	$-3.0695 + 14.6861I$	$-5.13652 - 8.10029I$
$u = 0.626883 - 1.232800I$ $a = -0.73702 - 1.79556I$ $b = 0.77943 - 1.32376I$	$-3.0695 - 14.6861I$	$-5.13652 + 8.10029I$

II.

$$\boldsymbol{I_2^u = \langle -u^{12} - 4u^{10} + \cdots + b + 1,\ -u^{13} - u^{12} + \cdots + a + 1,\ u^{15} + 5u^{13} + \cdots - u - 1 \rangle}$$

(i) Arc colorings

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

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

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

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

$$a_3 = \begin{pmatrix} -u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^{13} + u^{12} + \cdots - 3u - 1 \\ u^{12} + 4u^{10} + 3u^9 + 6u^8 + 9u^7 + 7u^6 + 9u^5 + 7u^4 + 3u^3 + 3u^2 - 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^2 + 1 \\ u^4 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^{13} + 4u^{11} + 2u^{10} + 5u^9 + 6u^8 + 2u^7 + 4u^6 - 4u^4 - 2u^3 - 4u^2 - 3u \\ u^{12} + 4u^{10} + 3u^9 + 6u^8 + 9u^7 + 7u^6 + 9u^5 + 7u^4 + 3u^3 + 3u^2 - 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^6 + 3u^4 + 2u^3 + 2u^2 + 2u + 1 \\ -u^6 - 2u^4 - u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^4 - u^2 + 1 \\ u^6 + 2u^4 + u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^4 - u^2 + 1 \\ u^6 + 2u^4 + u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= 4u^{12} + 16u^{10} + 8u^9 + 24u^8 + 24u^7 + 24u^6 + 24u^5 + 20u^4 + 4u^3 + 8u^2 - 4u - 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_5 c_6, c_7	$u^{15} + 5u^{13} + \cdots - u - 1$
c_2	$u^{15} + 10u^{14} + \cdots + 3u - 1$
c_4, c_9	$(u^5 + u^4 + 2u^3 + u^2 + u + 1)^3$
c_8, c_{10}, c_{11}	$(u^5 - u^4 - 2u^3 + u^2 + u + 1)^3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_5 c_6, c_7	$y^{15} + 10y^{14} + \cdots + 3y - 1$
c_2	$y^{15} - 10y^{14} + \cdots + 15y - 1$
c_4, c_9	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)^3$
c_8, c_{10}, c_{11}	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)^3$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.392556 + 0.928076I$ $a = 1.56131 - 1.04952I$ $b = -0.339110 - 0.822375I$	$-0.32910 + 1.53058I$	$-2.51511 - 4.43065I$
$u = 0.392556 - 0.928076I$ $a = 1.56131 + 1.04952I$ $b = -0.339110 + 0.822375I$	$-0.32910 - 1.53058I$	$-2.51511 + 4.43065I$
$u = -0.874669 + 0.344338I$ $a = -0.285415 - 0.003942I$ $b = 0.455697 + 1.200150I$	$-5.87256 + 4.40083I$	$-6.74431 - 3.49859I$
$u = -0.874669 - 0.344338I$ $a = -0.285415 + 0.003942I$ $b = 0.455697 - 1.200150I$	$-5.87256 - 4.40083I$	$-6.74431 + 3.49859I$
$u = -0.239239 + 1.082450I$ $a = -0.99209 - 1.41160I$ $b = 0.766826$	-2.40108	$-3.48114 + 0.I$
$u = -0.239239 - 1.082450I$ $a = -0.99209 + 1.41160I$ $b = 0.766826$	-2.40108	$-3.48114 + 0.I$
$u = 0.620645 + 1.060090I$ $a = -1.22012 + 0.88709I$ $b = 0.455697 + 1.200150I$	$-5.87256 + 4.40083I$	$-6.74431 - 3.49859I$
$u = 0.620645 - 1.060090I$ $a = -1.22012 - 0.88709I$ $b = 0.455697 - 1.200150I$	$-5.87256 - 4.40083I$	$-6.74431 + 3.49859I$
$u = 0.157939 + 1.235430I$ $a = -0.78772 + 1.73286I$ $b = -0.339110 + 0.822375I$	$-0.32910 - 1.53058I$	$-2.51511 + 4.43065I$
$u = 0.157939 - 1.235430I$ $a = -0.78772 - 1.73286I$ $b = -0.339110 - 0.822375I$	$-0.32910 + 1.53058I$	$-2.51511 - 4.43065I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.550495 + 0.307358I$ $a = 0.512065 - 0.335441I$ $b = -0.339110 - 0.822375I$	$-0.32910 + 1.53058I$	$-2.51511 - 4.43065I$
$u = -0.550495 - 0.307358I$ $a = 0.512065 + 0.335441I$ $b = -0.339110 + 0.822375I$	$-0.32910 - 1.53058I$	$-2.51511 + 4.43065I$
$u = 0.25402 + 1.40443I$ $a = 0.67600 - 1.30157I$ $b = 0.455697 - 1.200150I$	$-5.87256 - 4.40083I$	$-6.74431 + 3.49859I$
$u = 0.25402 - 1.40443I$ $a = 0.67600 + 1.30157I$ $b = 0.455697 + 1.200150I$	$-5.87256 + 4.40083I$	$-6.74431 - 3.49859I$
$u = 0.478478$ $a = -1.92805$ $b = 0.766826$	-2.40108	-3.48110

III. $I_3^u = \langle b,\ u^3+2u^2+2a+3u+1,\ u^4+u^3+u^2+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{1}{4}u^3-\frac{7}{2}u^2-\frac{23}{4}u-\frac{11}{4}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^4 + y^3 + 3y^2 + 2y + 1$
c_2, c_3, c_6 c_7	$y^4 + 5y^3 + 7y^2 + 2y + 1$
c_4, c_9	y^4
c_8, c_{10}, c_{11}	$(y-1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.351808 + 0.720342I$ $a = -0.38053 - 1.53420I$ $b = 0$	$-1.85594 + 1.41510I$	$-3.26394 - 5.88934I$
$u = 0.351808 - 0.720342I$ $a = -0.38053 + 1.53420I$ $b = 0$	$-1.85594 - 1.41510I$	$-3.26394 + 5.88934I$
$u = -0.851808 + 0.911292I$ $a = 0.130534 - 0.427872I$ $b = 0$	$5.14581 - 3.16396I$	$2.13894 - 0.11292I$
$u = -0.851808 - 0.911292I$ $a = 0.130534 + 0.427872I$ $b = 0$	$5.14581 + 3.16396I$	$2.13894 + 0.11292I$

IV. $I_4^u = \langle au + 5b - 2a - 3u + 1,\ a^2 - a + 5u + 4,\ u^2 + 1 \rangle$

(i) Arc colorings

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

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

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

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

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

$$a_{10} = \begin{pmatrix} a \\ -\frac{1}{5}au + \frac{2}{5}a + \frac{3}{5}u - \frac{1}{5} \end{pmatrix}$$

$$a_4 = \begin{pmatrix} \frac{2}{5}au + \frac{1}{5}a - \frac{6}{5}u - \frac{8}{5} \\ \frac{2}{5}au + \frac{1}{5}a - \frac{1}{5}u - \frac{8}{5} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} \frac{1}{5}au - \frac{2}{5}a - \frac{8}{5}u + \frac{11}{5} \\ \frac{1}{5}au - \frac{2}{5}a - \frac{8}{5}u + \frac{6}{5} \end{pmatrix}$$

$$a_9 = \begin{pmatrix} \frac{1}{5}au + \frac{3}{5}a - \frac{3}{5}u + \frac{1}{5} \\ -\frac{1}{5}au + \frac{2}{5}a + \frac{3}{5}u - \frac{1}{5} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -2u + 1 \\ \frac{1}{5}au - \frac{2}{5}a - \frac{8}{5}u + \frac{1}{5} \end{pmatrix}$$

$$a_8 = \begin{pmatrix} \frac{1}{5}au - \frac{2}{5}a - \frac{8}{5}u + \frac{6}{5} \\ \frac{1}{5}au - \frac{2}{5}a - \frac{8}{5}u + \frac{1}{5} \end{pmatrix}$$

$$a_8 = \begin{pmatrix} \frac{1}{5}au - \frac{2}{5}a - \frac{8}{5}u + \frac{6}{5} \\ \frac{1}{5}au - \frac{2}{5}a - \frac{8}{5}u + \frac{1}{5} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.000000I$ $a = -0.61803 + 2.23607I$ $b = 1.61803I$	-8.88264	-8.00000
$u = 1.000000I$ $a = 1.61803 - 2.23607I$ $b = -0.618034I$	-0.986960	-8.00000
$u = -1.000000I$ $a = -0.61803 - 2.23607I$ $b = -1.61803I$	-8.88264	-8.00000
$u = -1.000000I$ $a = 1.61803 + 2.23607I$ $b = 0.618034I$	-0.986960	-8.00000

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2+1)^2)(u^4-u^3+u^2+1)(u^{15}+5u^{13}+\cdots-u-1)$ $\cdot(u^{42}-2u^{41}+\cdots-36u+9)$
c_2	$((u+1)^4)(u^4+u^3+3u^2+2u+1)(u^{15}+10u^{14}+\cdots+3u-1)$ $\cdot(u^{42}+18u^{41}+\cdots+936u+81)$
c_3	$((u^2+1)^2)(u^4-u^3+3u^2-2u+1)(u^{15}+5u^{13}+\cdots-u-1)$ $\cdot(u^{42}-2u^{41}+\cdots-48u+9)$
c_4, c_9	$u^4(u^4+3u^2+1)(u^5+u^4+2u^3+u^2+u+1)^3$ $\cdot(u^{42}-2u^{41}+\cdots-48u+64)$
c_5	$((u^2+1)^2)(u^4+u^3+u^2+1)(u^{15}+5u^{13}+\cdots-u-1)$ $\cdot(u^{42}-2u^{41}+\cdots-36u+9)$
c_6, c_7	$((u^2+1)^2)(u^4+u^3+3u^2+2u+1)(u^{15}+5u^{13}+\cdots-u-1)$ $\cdot(u^{42}-2u^{41}+\cdots-48u+9)$
c_8	$(u-1)^4(u^2+u-1)^2(u^5-u^4-2u^3+u^2+u+1)^3$ $\cdot(u^{42}-4u^{41}+\cdots+3u+4)$
c_{10}, c_{11}	$(u+1)^4(u^2-u-1)^2(u^5-u^4-2u^3+u^2+u+1)^3$ $\cdot(u^{42}-4u^{41}+\cdots+3u+4)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$((y+1)^4)(y^4+y^3+3y^2+2y+1)(y^{15}+10y^{14}+\cdots+3y-1)$ $\cdot(y^{42}+18y^{41}+\cdots+936y+81)$
c_2	$((y-1)^4)(y^4+5y^3+\cdots+2y+1)(y^{15}-10y^{14}+\cdots+15y-1)$ $\cdot(y^{42}+18y^{41}+\cdots+43092y+6561)$
c_3, c_6, c_7	$((y+1)^4)(y^4+5y^3+\cdots+2y+1)(y^{15}+10y^{14}+\cdots+3y-1)$ $\cdot(y^{42}+42y^{41}+\cdots+648y+81)$
c_4, c_9	$y^4(y^2+3y+1)^2(y^5+3y^4+4y^3+y^2-y-1)^3$ $\cdot(y^{42}+24y^{41}+\cdots+37632y+4096)$
c_8, c_{10}, c_{11}	$(y-1)^4(y^2-3y+1)^2(y^5-5y^4+8y^3-3y^2-y-1)^3$ $\cdot(y^{42}-40y^{41}+\cdots+431y+16)$