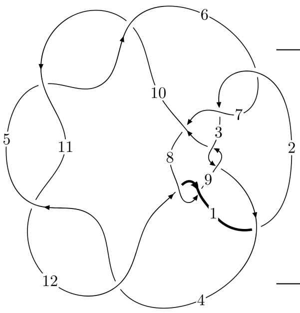
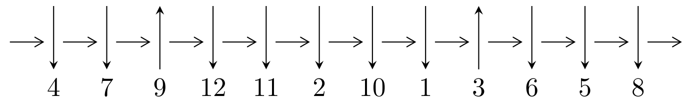
$12a_{1062}$ $(K12a_{1062})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle -4.35709 \times 10^{18} u^{28} - 2.00758 \times 10^{18} u^{27} + \cdots + 1.77495 \times 10^{19} b + 4.28788 \times 10^{19}, \\
&\quad 3.14140 \times 10^{19} u^{28} - 3.48706 \times 10^{19} u^{27} + \cdots + 1.77495 \times 10^{20} a - 6.60203 \times 10^{19},\ u^{29} - u^{28} + \cdots + 6u + 5 \rangle \\
I_2^u &= \langle -6.62139 \times 10^{45} u^{45} + 4.84395 \times 10^{44} u^{44} + \cdots + 2.87295 \times 10^{46} b + 1.78408 \times 10^{46}, \\
&\quad - 4.22323 \times 10^{46} u^{45} + 3.37044 \times 10^{46} u^{44} + \cdots + 2.87295 \times 10^{46} a + 3.87573 \times 10^{46},\ u^{46} - u^{45} + \cdots + 72u^3 \\
I_3^u &= \langle 3b + 2a - 1,\ 4a^2 + 6au - 4a - 3u + 10,\ u^2 + 1 \rangle \\
I_4^u &= \langle b,\ a + 1,\ u + 1 \rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 80 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.
$\boldsymbol{I_1^u = \langle -4.36\times10^{18}u^{28} - 2.01\times10^{18}u^{27} + \cdots + 1.77\times10^{19}b + 4.29\times10^{19},\ 3.14\times10^{19}u^{28} - 3.49\times10^{19}u^{27} + \cdots + 1.77\times10^{20}a - 6.60\times10^{19},\ u^{29} - u^{28} + \cdots + 6u + 5\rangle}$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.176986u^{28} + 0.196460u^{27} + \cdots + 4.44222u + 0.371956 \\ 0.245478u^{28} + 0.113107u^{27} + \cdots - 3.74868u - 2.41578 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.0684919u^{28} + 0.309567u^{27} + \cdots + 0.693541u - 2.04382 \\ 0.245478u^{28} + 0.113107u^{27} + \cdots - 3.74868u - 2.41578 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.118296u^{28} - 0.0893359u^{27} + \cdots - 3.39351u + 0.162132 \\ -0.00685004u^{28} - 0.0793457u^{27} + \cdots - 1.42658u - 0.209524 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -0.0781184u^{28} + 0.100703u^{27} + \cdots + 4.05485u - 0.0974079 \\ 0.305018u^{28} + 0.173348u^{27} + \cdots - 4.24410u - 2.58483 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.0910595u^{28} + 0.0224573u^{27} + \cdots + 0.754174u + 1.13264 \\ -0.122205u^{28} + 0.0768161u^{27} + \cdots + 3.17685u + 0.779482 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.0419048u^{28} - 0.0487548u^{27} + \cdots - 1.40336u - 1.17515 \\ -0.645066u^{28} + 0.272635u^{27} + \cdots + 6.97049u + 2.35170 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.105097u^{28} + 0.0315333u^{27} + \cdots - 2.30681u - 0.507286 \\ -0.0726470u^{28} + 0.0802996u^{27} + \cdots - 2.46182u - 1.60634 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.0129449u^{28} - 0.0531223u^{27} + \cdots - 0.855717u - 0.583669 \\ -0.558870u^{28} + 0.260702u^{27} + \cdots + 7.13891u + 2.31745 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{1827767228747590945}{8874731342588739424}u^{28} - \frac{438792885780626433}{4437365671294369712}u^{27} + \cdots - \frac{7822538315789978113}{8874731342588739424}u - \frac{10805986668201466096 5}{8874731342588739424}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$16(16u^{29} - 48u^{28} + \cdots + 4u - 1)$
c_2, c_6, c_8 c_{12}	$u^{29} - u^{28} + \cdots + 6u + 5$
c_3, c_9	$u^{29} - 3u^{28} + \cdots - 172u + 58$
c_4, c_5, c_{10} c_{11}	$u^{29} + 3u^{28} + \cdots + 68u + 10$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$256(256y^{29} - 640y^{28} + \cdots + 62y - 1)$
c_2, c_6, c_8 c_{12}	$y^{29} - 11y^{28} + \cdots + 66y - 25$
c_3, c_9	$y^{29} + 23y^{28} + \cdots + 9980y - 3364$
c_4, c_5, c_{10} c_{11}	$y^{29} + 33y^{28} + \cdots - 1196y - 100$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.471326 + 0.930518I$ $a = -0.32444 - 2.22299I$ $b = 0.03883 + 1.63705I$	$11.23150 + 0.31670I$	$0.72463 - 1.97935I$
$u = -0.471326 - 0.930518I$ $a = -0.32444 + 2.22299I$ $b = 0.03883 - 1.63705I$	$11.23150 - 0.31670I$	$0.72463 + 1.97935I$
$u = 0.989283 + 0.366561I$ $a = -1.123300 + 0.601376I$ $b = -0.27077 - 1.51322I$	$3.87255 - 3.92564I$	$-7.17073 + 6.57073I$
$u = 0.989283 - 0.366561I$ $a = -1.123300 - 0.601376I$ $b = -0.27077 + 1.51322I$	$3.87255 + 3.92564I$	$-7.17073 - 6.57073I$
$u = -0.894844 + 0.224932I$ $a = 0.609672 + 0.117489I$ $b = 0.818306 + 0.515060I$	$-2.30220 + 2.09205I$	$-7.00937 - 7.58620I$
$u = -0.894844 - 0.224932I$ $a = 0.609672 - 0.117489I$ $b = 0.818306 - 0.515060I$	$-2.30220 - 2.09205I$	$-7.00937 + 7.58620I$
$u = 1.078710 + 0.415737I$ $a = 0.868252 - 0.609559I$ $b = 0.689515 + 0.698878I$	$-1.53035 - 7.20402I$	$-9.10388 + 9.44165I$
$u = 1.078710 - 0.415737I$ $a = 0.868252 + 0.609559I$ $b = 0.689515 - 0.698878I$	$-1.53035 + 7.20402I$	$-9.10388 - 9.44165I$
$u = -1.141380 + 0.286143I$ $a = -0.164359 + 0.494218I$ $b = -0.566117 - 1.168670I$	$-5.67885 + 3.21607I$	$-12.14399 - 5.43569I$
$u = -1.141380 - 0.286143I$ $a = -0.164359 - 0.494218I$ $b = -0.566117 + 1.168670I$	$-5.67885 - 3.21607I$	$-12.14399 + 5.43569I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.422423 + 0.698933I$ $a = -0.308566 + 0.892792I$ $b = 0.101826 - 0.815142I$	$2.73932 - 0.92739I$	$0.75660 + 2.98272I$
$u = 0.422423 - 0.698933I$ $a = -0.308566 - 0.892792I$ $b = 0.101826 + 0.815142I$	$2.73932 + 0.92739I$	$0.75660 - 2.98272I$
$u = 0.746623 + 0.193942I$ $a = 0.902000 - 0.966773I$ $b = 0.06012 + 1.74114I$	$6.12616 - 1.21646I$	$-4.32561 + 4.57305I$
$u = 0.746623 - 0.193942I$ $a = 0.902000 + 0.966773I$ $b = 0.06012 - 1.74114I$	$6.12616 + 1.21646I$	$-4.32561 - 4.57305I$
$u = -0.746883$ $a = -0.860796$ $b = -0.796318$	-1.46174	-3.54150
$u = -0.236709 + 1.286190I$ $a = 0.060143 + 0.822295I$ $b = -0.237684 - 0.540453I$	$0.525909 - 0.884260I$	$-11.9177 + 8.2327I$
$u = -0.236709 - 1.286190I$ $a = 0.060143 - 0.822295I$ $b = -0.237684 + 0.540453I$	$0.525909 + 0.884260I$	$-11.9177 - 8.2327I$
$u = -1.186580 + 0.554420I$ $a = 1.39175 + 1.13943I$ $b = 0.20443 - 1.61493I$	$6.24626 + 10.51930I$	$-6.12287 - 7.23991I$
$u = -1.186580 - 0.554420I$ $a = 1.39175 - 1.13943I$ $b = 0.20443 + 1.61493I$	$6.24626 - 10.51930I$	$-6.12287 + 7.23991I$
$u = 1.278090 + 0.410634I$ $a = -0.327813 + 0.182357I$ $b = -0.845051 + 0.136443I$	$-9.57615 - 8.03561I$	$-14.4420 + 5.3510I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.278090 - 0.410634I$ $a = -0.327813 - 0.182357I$ $b = -0.845051 - 0.136443I$	$-9.57615 + 8.03561I$	$-14.4420 - 5.3510I$
$u = -1.32626 + 0.52915I$ $a = -0.750008 - 0.859966I$ $b = -0.629916 + 0.818379I$	$-7.5127 + 12.8935I$	$-11.3843 - 8.7195I$
$u = -1.32626 - 0.52915I$ $a = -0.750008 + 0.859966I$ $b = -0.629916 - 0.818379I$	$-7.5127 - 12.8935I$	$-11.3843 + 8.7195I$
$u = 1.34660 + 0.62954I$ $a = -1.33868 + 1.46318I$ $b = -0.19137 - 1.64914I$	$0.8405 - 16.0516I$	$-8.77423 + 7.86114I$
$u = 1.34660 - 0.62954I$ $a = -1.33868 - 1.46318I$ $b = -0.19137 + 1.64914I$	$0.8405 + 16.0516I$	$-8.77423 - 7.86114I$
$u = 0.46363 + 1.46562I$ $a = 0.07882 - 2.15458I$ $b = -0.06154 + 1.57781I$	$7.86481 + 1.93517I$	$-8.22751 - 3.59914I$
$u = 0.46363 - 1.46562I$ $a = 0.07882 + 2.15458I$ $b = -0.06154 - 1.57781I$	$7.86481 - 1.93517I$	$-8.22751 + 3.59914I$
$u = -0.194808 + 0.345152I$ $a = -0.943074 + 0.687123I$ $b = -0.212425 + 0.288508I$	$-0.601308 + 0.869978I$	$-10.08823 - 7.77060I$
$u = -0.194808 - 0.345152I$ $a = -0.943074 - 0.687123I$ $b = -0.212425 - 0.288508I$	$-0.601308 - 0.869978I$	$-10.08823 + 7.77060I$

II. $\boldsymbol{I_2^u = \langle -6.62\times 10^{45}u^{45} + 4.84\times 10^{44}u^{44} + \cdots + 2.87\times 10^{46}b + 1.78\times 10^{46},\ -4.22\times 10^{46}u^{45} + 3.37\times 10^{46}u^{44} + \cdots + 2.87\times 10^{46}a + 3.88\times 10^{46},\ u^{46} - u^{45} + \cdots + 72u^3 + 1\rangle}$

(i) Arc colorings

$$a_8 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_1 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_5 = \begin{pmatrix}1.47000u^{45} - 1.17316u^{44} + \cdots + 20.0764u - 1.34904\\0.230474u^{45} - 0.0168606u^{44} + \cdots - 1.54825u - 0.620995\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-u\\-u^3 + u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1.70047u^{45} - 1.19003u^{44} + \cdots + 18.5281u - 1.97004\\0.230474u^{45} - 0.0168606u^{44} + \cdots - 1.54825u - 0.620995\end{pmatrix}$$
$$a_2 = \begin{pmatrix}0.185550u^{45} - 0.0904179u^{44} + \cdots + 13.6824u + 6.31036\\0.00565620u^{45} - 0.104925u^{44} + \cdots + 1.19083u + 0.432576\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1.51125u^{45} - 1.22829u^{44} + \cdots + 20.2705u - 1.45837\\0.0893100u^{45} + 0.110629u^{44} + \cdots - 3.10135u - 0.905173\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-0.456685u^{45} - 0.420359u^{44} + \cdots - 9.08457u - 4.32491\\-0.583337u^{45} + 0.373887u^{44} + \cdots - 0.150803u + 0.653918\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0.151527u^{45} + 0.286238u^{44} + \cdots + 8.26354u + 0.627866\\-0.825790u^{45} + 0.358853u^{44} + \cdots + 3.50116u + 2.03572\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}0.521385u^{45} - 0.153313u^{44} + \cdots + 0.495270u - 4.38356\\1.05862u^{45} - 0.639836u^{44} + \cdots + 5.19161u - 1.11148\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0.840952u^{45} - 0.757829u^{44} + \cdots + 18.1621u + 2.90992\\-1.32879u^{45} + 0.828964u^{44} + \cdots - 2.95845u + 2.16499\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2.26393u^{45} + 0.703208u^{44} + \cdots + 0.508567u - 4.58033$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$25(25u^{46} + 105u^{45} + \cdots + 114436u - 17519)$
c_2, c_6, c_8 c_{12}	$u^{46} - u^{45} + \cdots + 72u^3 + 1$
c_3, c_9	$(u^{23} + u^{22} + \cdots + 2u + 1)^2$
c_4, c_5, c_{10} c_{11}	$(u^{23} - u^{22} + \cdots - 2u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$625(625y^{46} - 13125y^{45} + \cdots - 2.98321 \times 10^9 y + 3.06915 \times 10^8)$
c_2, c_6, c_8 c_{12}	$y^{46} - 29y^{45} + \cdots - 364y^2 + 1$
c_3, c_9	$(y^{23} + 19y^{22} + \cdots - 4y - 1)^2$
c_4, c_5, c_{10} c_{11}	$(y^{23} + 27y^{22} + \cdots - 4y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.960668 + 0.217642I$ $a = 1.60344 - 1.21245I$ $b = 0.228067 + 0.467269I$	$-3.14970 - 0.92592I$	$-9.05751 + 7.44214I$
$u = 0.960668 - 0.217642I$ $a = 1.60344 + 1.21245I$ $b = 0.228067 - 0.467269I$	$-3.14970 + 0.92592I$	$-9.05751 - 7.44214I$
$u = 0.944170 + 0.194325I$ $a = 1.66541 - 0.85193I$ $b = 0.09185 + 1.62814I$	$5.85259 - 0.83337I$	$-5.37353 - 0.43888I$
$u = 0.944170 - 0.194325I$ $a = 1.66541 + 0.85193I$ $b = 0.09185 - 1.62814I$	$5.85259 + 0.83337I$	$-5.37353 + 0.43888I$
$u = -0.260832 + 0.901044I$ $a = 0.10902 + 2.08680I$ $b = -0.11785 - 1.62483I$	$9.09029 - 5.22748I$	$-2.33369 + 3.33432I$
$u = -0.260832 - 0.901044I$ $a = 0.10902 - 2.08680I$ $b = -0.11785 + 1.62483I$	$9.09029 + 5.22748I$	$-2.33369 - 3.33432I$
$u = -1.060680 + 0.129047I$ $a = 0.965371 - 0.700301I$ $b = 0.324148 + 0.802707I$	$-2.47271 + 0.74531I$	$-6.91991 + 0.73522I$
$u = -1.060680 - 0.129047I$ $a = 0.965371 + 0.700301I$ $b = 0.324148 - 0.802707I$	$-2.47271 - 0.74531I$	$-6.91991 - 0.73522I$
$u = -0.978562 + 0.439060I$ $a = 2.30652 + 1.97958I$ $b = 0.03322 - 1.55779I$	$3.82738 + 1.68405I$	$-5.64484 - 3.83025I$
$u = -0.978562 - 0.439060I$ $a = 2.30652 - 1.97958I$ $b = 0.03322 + 1.55779I$	$3.82738 - 1.68405I$	$-5.64484 + 3.83025I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.032046 + 1.078310I$ $a = -0.130214 - 0.963704I$ $b = 0.473302 + 0.738923I$	$-3.45327 - 7.25342I$	$-8.90266 + 7.25802I$
$u = -0.032046 - 1.078310I$ $a = -0.130214 + 0.963704I$ $b = 0.473302 - 0.738923I$	$-3.45327 + 7.25342I$	$-8.90266 - 7.25802I$
$u = 1.013490 + 0.406902I$ $a = -0.920257 + 0.717264I$ $b = -0.413689 - 0.761868I$	$0.92198 - 3.22031I$	$-3.77921 + 4.90443I$
$u = 1.013490 - 0.406902I$ $a = -0.920257 - 0.717264I$ $b = -0.413689 + 0.761868I$	$0.92198 + 3.22031I$	$-3.77921 - 4.90443I$
$u = -0.882714$ $a = -0.656431$ $b = -0.546774$	-1.28214	-7.98830
$u = -1.116100 + 0.137828I$ $a = 0.095732 + 0.799884I$ $b = 0.228067 + 0.467269I$	$-3.14970 - 0.92592I$	$-9.05751 + 7.44214I$
$u = -1.116100 - 0.137828I$ $a = 0.095732 - 0.799884I$ $b = 0.228067 - 0.467269I$	$-3.14970 + 0.92592I$	$-9.05751 - 7.44214I$
$u = -0.151468 + 0.832504I$ $a = -0.148349 - 0.609597I$ $b = 0.581337 + 0.108709I$	$-5.29586 + 3.66457I$	$-12.82434 - 2.67133I$
$u = -0.151468 - 0.832504I$ $a = -0.148349 + 0.609597I$ $b = 0.581337 - 0.108709I$	$-5.29586 - 3.66457I$	$-12.82434 + 2.67133I$
$u = 0.174340 + 1.236240I$ $a = 0.13883 + 2.25785I$ $b = 0.13674 - 1.61894I$	$4.58136 + 9.54664I$	$-8.00000 - 5.57899I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.174340 - 1.236240I$ $a = 0.13883 - 2.25785I$ $b = 0.13674 + 1.61894I$	$4.58136 - 9.54664I$	$-8.00000 + 5.57899I$
$u = -1.125600 + 0.590859I$ $a = -1.39957 - 1.39854I$ $b = -0.11785 + 1.62483I$	$9.09029 + 5.22748I$	0
$u = -1.125600 - 0.590859I$ $a = -1.39957 + 1.39854I$ $b = -0.11785 - 1.62483I$	$9.09029 - 5.22748I$	0
$u = 1.263600 + 0.196622I$ $a = -0.723405 - 0.104554I$ $b = 0.03322 - 1.55779I$	$3.82738 + 1.68405I$	$-8.00000 - 3.83025I$
$u = 1.263600 - 0.196622I$ $a = -0.723405 + 0.104554I$ $b = 0.03322 + 1.55779I$	$3.82738 - 1.68405I$	$-8.00000 + 3.83025I$
$u = 0.223468 + 0.627017I$ $a = 0.304838 - 0.560630I$ $b = -0.413689 + 0.761868I$	$0.92198 + 3.22031I$	$-3.77921 - 4.90443I$
$u = 0.223468 - 0.627017I$ $a = 0.304838 + 0.560630I$ $b = -0.413689 - 0.761868I$	$0.92198 - 3.22031I$	$-3.77921 + 4.90443I$
$u = 1.303950 + 0.339252I$ $a = 0.418446 + 0.083716I$ $b = 0.581337 - 0.108709I$	$-5.29586 - 3.66457I$	0
$u = 1.303950 - 0.339252I$ $a = 0.418446 - 0.083716I$ $b = 0.581337 + 0.108709I$	$-5.29586 + 3.66457I$	0
$u = -1.250840 + 0.612691I$ $a = -0.441738 - 0.907872I$ $b = -0.477903 + 0.451361I$	$-8.25826 + 1.68040I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.250840-0.612691I$ $a=-0.441738+0.907872I$ $b=-0.477903-0.451361I$	$-8.25826-1.68040I$	0
$u=1.09538+0.90096I$ $a=-0.88861+2.13172I$ $b=-0.08584-1.50808I$	$-1.82520-3.53591I$	0
$u=1.09538-0.90096I$ $a=-0.88861-2.13172I$ $b=-0.08584+1.50808I$	$-1.82520+3.53591I$	0
$u=-1.35206+0.55810I$ $a=0.633793+0.759928I$ $b=0.473302-0.738923I$	$-3.45327+7.25342I$	0
$u=-1.35206-0.55810I$ $a=0.633793-0.759928I$ $b=0.473302+0.738923I$	$-3.45327-7.25342I$	0
$u=1.42000+0.41703I$ $a=-0.051313-0.188624I$ $b=-0.477903+0.451361I$	$-8.25826+1.68040I$	0
$u=1.42000-0.41703I$ $a=-0.051313+0.188624I$ $b=-0.477903-0.451361I$	$-8.25826-1.68040I$	0
$u=1.37422+0.72873I$ $a=1.09577-1.56402I$ $b=0.13674+1.61894I$	$4.58136-9.54664I$	0
$u=1.37422-0.72873I$ $a=1.09577+1.56402I$ $b=0.13674-1.61894I$	$4.58136+9.54664I$	0
$u=0.165356+0.313036I$ $a=-2.30752+0.60796I$ $b=0.09185-1.62814I$	$5.85259+0.83337I$	$-5.37353+0.43888I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.165356 - 0.313036I$ $a = -2.30752 - 0.60796I$ $b = 0.09185 + 1.62814I$	$5.85259 - 0.83337I$	$-5.37353 - 0.43888I$
$u = -1.63171 + 0.23232I$ $a = 0.114074 + 1.088240I$ $b = -0.08584 - 1.50808I$	$-1.82520 - 3.53591I$	0
$u = -1.63171 - 0.23232I$ $a = 0.114074 - 1.088240I$ $b = -0.08584 + 1.50808I$	$-1.82520 + 3.53591I$	0
$u = 0.064261 + 0.284784I$ $a = 2.76905 + 3.46178I$ $b = 0.324148 - 0.802707I$	$-2.47271 - 0.74531I$	$-6.91991 - 0.73522I$
$u = 0.064261 - 0.284784I$ $a = 2.76905 - 3.46178I$ $b = 0.324148 + 0.802707I$	$-2.47271 + 0.74531I$	$-6.91991 + 0.73522I$
$u = -0.203324$ $a = -2.56222$ $b = -0.546774$	-1.28214	-7.98830

III. $I_3^u = \langle 3b+2a-1,\ 4a^2+6au-4a-3u+10,\ u^2+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$16(16u^4 - 32u^3 + 36u^2 - 20u + 5)$
c_2, c_3, c_6 c_8, c_9, c_{12}	$(u^2 + 1)^2$
c_4, c_5, c_{10} c_{11}	$u^4 + 3u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$256(256y^4 + 128y^3 + 176y^2 - 40y + 25)$
c_2, c_3, c_6 c_8, c_9, c_{12}	$(y+1)^4$
c_4, c_5, 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
$u = 1.000000I$ $a = 0.500000 + 0.927051I$ $b = -0.618034I$	0.986960	−4.00000
$u = 1.000000I$ $a = 0.50000 - 2.42705I$ $b = 1.61803I$	8.88264	−4.00000
$u = -1.000000I$ $a = 0.500000 - 0.927051I$ $b = 0.618034I$	0.986960	−4.00000
$u = -1.000000I$ $a = 0.50000 + 2.42705I$ $b = -1.61803I$	8.88264	−4.00000

IV. $\boldsymbol{I_4^u = \langle b,\ a+1,\ u+1 \rangle}$

(i) Arc colorings

$a_8 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$

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

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

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

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

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

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

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

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

$a_6 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = -1.00000$ $b = 0$	-3.28987	-12.0000

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_7	$6400(u-1)(16u^4-32u^3+36u^2-20u+5)$ $\cdot(16u^{29}-48u^{28}+\cdots+4u-1)$ $\cdot(25u^{46}+105u^{45}+\cdots+114436u-17519)$
c_2, c_8	$(u-1)(u^2+1)^2(u^{29}-u^{28}+\cdots+6u+5)(u^{46}-u^{45}+\cdots+72u^3+1)$
c_3, c_9	$u(u^2+1)^2(u^{23}+u^{22}+\cdots+2u+1)^2(u^{29}-3u^{28}+\cdots-172u+58)$
c_4, c_5, c_{10} c_{11}	$u(u^4+3u^2+1)(u^{23}-u^{22}+\cdots-2u+1)^2(u^{29}+3u^{28}+\cdots+68u+10)$
c_6, c_{12}	$(u+1)(u^2+1)^2(u^{29}-u^{28}+\cdots+6u+5)(u^{46}-u^{45}+\cdots+72u^3+1)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_7	$40960000(y-1)(256y^4+128y^3+176y^2-40y+25)$ $\cdot(256y^{29}-640y^{28}+\cdots+62y-1)$ $\cdot(625y^{46}-13125y^{45}+\cdots-2983210840y+306915361)$
c_2, c_6, c_8 c_{12}	$(y-1)(y+1)^4(y^{29}-11y^{28}+\cdots+66y-25)$ $\cdot(y^{46}-29y^{45}+\cdots-364y^2+1)$
c_3, c_9	$y(y+1)^4(y^{23}+19y^{22}+\cdots-4y-1)^2$ $\cdot(y^{29}+23y^{28}+\cdots+9980y-3364)$
c_4, c_5, c_{10} c_{11}	$y(y^2+3y+1)^2(y^{23}+27y^{22}+\cdots-4y-1)^2$ $\cdot(y^{29}+33y^{28}+\cdots-1196y-100)$