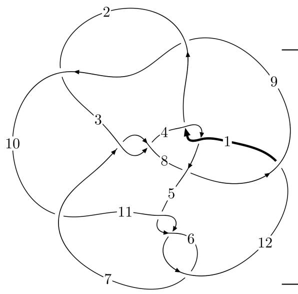
$12a_{1182}$ ($K12a_{1182}$)



A knot diagram[1]

Linearized knot diagam

$$\to \underset{4}{\downarrow} \to \underset{10}{\downarrow} \to \underset{8}{\downarrow} \to \underset{1}{\downarrow} \to \underset{11}{\uparrow} \to \underset{12}{\uparrow} \to \underset{3}{\downarrow} \to \underset{5}{\downarrow} \to \underset{2}{\downarrow} \to \underset{7}{\uparrow} \to \underset{6}{\uparrow} \to \underset{9}{\downarrow} \to$$

Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle -1393u^{37} + 27813u^{36} + \cdots + 128b + 48128,\ 188u^{37} - 2555u^{36} + \cdots + 128a + 149824, \\
&\quad u^{38} - 21u^{37} + \cdots - 4864u + 256\rangle \\
I_2^u &= \langle -3.88208 \times 10^{52}a^{15}u^4 + 1.90625 \times 10^{52}a^{14}u^4 + \cdots + 3.57811 \times 10^{52}a + 3.35225 \times 10^{51}, \\
&\quad -a^{15}u^4 - 6a^{14}u^4 + \cdots - 102a - 31,\ u^5 + u^4 + 2u^3 + u^2 + u + 1\rangle \\
I_3^u &= \langle -9u^{24} - 37u^{23} + \cdots + b + 37,\ -37u^{24} - 231u^{23} + \cdots + a - 6,\ u^{25} + 6u^{24} + \cdots + 5u + 1\rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 143 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. $\boldsymbol{I_1^u = \langle -1393u^{37} + 27813u^{36} + \cdots + 128b + 48128,\ 188u^{37} - 2555u^{36} + \cdots + 128a + 149824,\ u^{38} - 21u^{37} + \cdots - 4864u + 256\rangle}$

(i) Arc colorings

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

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

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

$$a_2 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -1.46875u^{37} + 19.9609u^{36} + \cdots + 21583.3u - 1170.50 \\ 10.8828u^{37} - 217.289u^{36} + \cdots + 8314.50u - 376 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -15.7188u^{37} + 312.086u^{36} + \cdots - 11376.8u + 539.500 \\ 6.07031u^{37} - 147.727u^{36} + \cdots + 72282.5u - 3910 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 9.41406u^{37} - 197.328u^{36} + \cdots + 29897.8u - 1546.50 \\ 10.8828u^{37} - 217.289u^{36} + \cdots + 8314.50u - 376 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -\frac{3}{256}u^{37} + \frac{77}{256}u^{36} + \cdots - 159u + 9 \\ \frac{59}{128}u^{37} - \frac{1173}{128}u^{36} + \cdots + 2170u - 121 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -13.9961u^{37} + 294.926u^{36} + \cdots - 43159.8u + 2266 \\ -8.22656u^{37} + 153.602u^{36} + \cdots + 27840u - 1591 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 5.77734u^{37} - 105.535u^{36} + \cdots - 21165.3u + 1168.50 \\ -6.44531u^{37} + 137.477u^{36} + \cdots - 21511.5u + 1137 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -1.52734u^{37} + 31.5352u^{36} + \cdots - 7145u + 382 \\ \frac{69}{128}u^{37} - \frac{1515}{128}u^{36} + \cdots + 7048u - 391 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -4.78906u^{37} + 89.7813u^{36} + \cdots + 14346.5u - 796 \\ \frac{185}{128}u^{37} - \frac{4709}{128}u^{36} + \cdots + 16332u - 884 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{129}{32}u^{37} + \frac{3399}{32}u^{36} + \cdots - 67794u + 3762$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{38} - 21u^{37} + \cdots - 4864u + 256$
c_2, c_3, c_7 c_9	$u^{38} - u^{37} + \cdots - u + 1$
c_5, c_6, c_{11}	$u^{38} + 11u^{37} + \cdots - 64u + 32$
c_8, c_{12}	$u^{38} + u^{37} + \cdots + 4u + 1$
c_{10}	$u^{38} - 30u^{37} + \cdots - 1495744u + 104800$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{38} + 21y^{37} + \cdots + 262144y + 65536$
c_2, c_3, c_7 c_9	$y^{38} - 29y^{37} + \cdots + 5y + 1$
c_5, c_6, c_{11}	$y^{38} - 31y^{37} + \cdots + 2560y + 1024$
c_8, c_{12}	$y^{38} + 9y^{37} + \cdots + 40y + 1$
c_{10}	$y^{38} + 10y^{37} + \cdots - 49765582336y + 10983040000$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.276578 + 1.023820I$ $a = -1.159910 + 0.544755I$ $b = 0.878533 + 1.036860I$	$1.78144 - 3.49513I$	0
$u = 0.276578 - 1.023820I$ $a = -1.159910 - 0.544755I$ $b = 0.878533 - 1.036860I$	$1.78144 + 3.49513I$	0
$u = 0.176776 + 1.066540I$ $a = 0.864750 - 0.422278I$ $b = -0.603241 - 0.847638I$	$3.09560 - 0.11489I$	0
$u = 0.176776 - 1.066540I$ $a = 0.864750 + 0.422278I$ $b = -0.603241 + 0.847638I$	$3.09560 + 0.11489I$	0
$u = 0.325919 + 1.043810I$ $a = 1.331630 - 0.450348I$ $b = -0.90408 - 1.24319I$	$7.05489 - 6.79305I$	0
$u = 0.325919 - 1.043810I$ $a = 1.331630 + 0.450348I$ $b = -0.90408 + 1.24319I$	$7.05489 + 6.79305I$	0
$u = 1.140690 + 0.256725I$ $a = -0.708610 + 0.838720I$ $b = 1.023630 - 0.774803I$	$-4.62360 + 11.93760I$	0
$u = 1.140690 - 0.256725I$ $a = -0.708610 - 0.838720I$ $b = 1.023630 + 0.774803I$	$-4.62360 - 11.93760I$	0
$u = 0.112836 + 0.804337I$ $a = 0.478801 - 0.929435I$ $b = -0.801605 - 0.280244I$	$2.99988 - 0.94819I$	0
$u = 0.112836 - 0.804337I$ $a = 0.478801 + 0.929435I$ $b = -0.801605 + 0.280244I$	$2.99988 + 0.94819I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.229363 + 1.183590I$ $a = -0.935452 + 0.110373I$ $b = 0.345193 + 1.081870I$	$9.08075 + 1.15702I$	0
$u = 0.229363 - 1.183590I$ $a = -0.935452 - 0.110373I$ $b = 0.345193 - 1.081870I$	$9.08075 - 1.15702I$	0
$u = 1.193720 + 0.264532I$ $a = 0.662558 - 0.703782I$ $b = -0.977082 + 0.664851I$	$-9.66231 + 7.26737I$	0
$u = 1.193720 - 0.264532I$ $a = 0.662558 + 0.703782I$ $b = -0.977082 - 0.664851I$	$-9.66231 - 7.26737I$	0
$u = 1.287920 + 0.305018I$ $a = -0.520579 + 0.543865I$ $b = 0.836351 - 0.541667I$	$-7.01204 + 2.08978I$	0
$u = 1.287920 - 0.305018I$ $a = -0.520579 - 0.543865I$ $b = 0.836351 + 0.541667I$	$-7.01204 - 2.08978I$	0
$u = 1.055980 + 0.854615I$ $a = -0.315540 - 0.650906I$ $b = -0.223072 + 0.957006I$	$3.89637 + 2.48033I$	0
$u = 1.055980 - 0.854615I$ $a = -0.315540 + 0.650906I$ $b = -0.223072 - 0.957006I$	$3.89637 - 2.48033I$	0
$u = 0.722105 + 1.185770I$ $a = 1.056810 + 0.054104I$ $b = -0.69897 - 1.29220I$	$5.48491 - 9.18131I$	0
$u = 0.722105 - 1.185770I$ $a = 1.056810 - 0.054104I$ $b = -0.69897 + 1.29220I$	$5.48491 + 9.18131I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.63913 + 1.27635I$ $a = -1.162370 + 0.368591I$ $b = 1.21336 + 1.24802I$	$-1.4096 - 18.1977I$	0
$u = 0.63913 - 1.27635I$ $a = -1.162370 - 0.368591I$ $b = 1.21336 - 1.24802I$	$-1.4096 + 18.1977I$	0
$u = 0.65333 + 1.28434I$ $a = 1.089340 - 0.358794I$ $b = -1.17251 - 1.16467I$	$-6.4291 - 13.7041I$	0
$u = 0.65333 - 1.28434I$ $a = 1.089340 + 0.358794I$ $b = -1.17251 + 1.16467I$	$-6.4291 + 13.7041I$	0
$u = 0.502236 + 0.232158I$ $a = 0.00110 - 1.66945I$ $b = -0.388127 + 0.838203I$	$4.87896 + 3.61554I$	$2.09736 - 5.51387I$
$u = 0.502236 - 0.232158I$ $a = 0.00110 + 1.66945I$ $b = -0.388127 - 0.838203I$	$4.87896 - 3.61554I$	$2.09736 + 5.51387I$
$u = 0.68009 + 1.29011I$ $a = -0.993287 + 0.304581I$ $b = 1.06847 + 1.07431I$	$-3.83257 - 8.83430I$	0
$u = 0.68009 - 1.29011I$ $a = -0.993287 - 0.304581I$ $b = 1.06847 - 1.07431I$	$-3.83257 + 8.83430I$	0
$u = 0.83997 + 1.26540I$ $a = -0.711539 - 0.018103I$ $b = 0.574764 + 0.915591I$	$-2.21139 - 6.84601I$	0
$u = 0.83997 - 1.26540I$ $a = -0.711539 + 0.018103I$ $b = 0.574764 - 0.915591I$	$-2.21139 + 6.84601I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.62513 + 1.45533I$ $a = -0.118959 + 0.108907I$ $b = 0.084131 + 0.241205I$	$-1.33149 + 1.81451I$	0
$u = -0.62513 - 1.45533I$ $a = -0.118959 - 0.108907I$ $b = 0.084131 - 0.241205I$	$-1.33149 - 1.81451I$	0
$u = 1.06314 + 1.22972I$ $a = 0.438610 + 0.194376I$ $b = -0.227277 - 0.746019I$	$-3.13120 - 1.44216I$	0
$u = 1.06314 - 1.22972I$ $a = 0.438610 - 0.194376I$ $b = -0.227277 + 0.746019I$	$-3.13120 + 1.44216I$	0
$u = -0.02275 + 1.63264I$ $a = 0.260992 + 0.073977I$ $b = 0.126715 - 0.424424I$	$2.33032 + 6.70905I$	0
$u = -0.02275 - 1.63264I$ $a = 0.260992 - 0.073977I$ $b = 0.126715 + 0.424424I$	$2.33032 - 6.70905I$	0
$u = 0.248102 + 0.239177I$ $a = 0.19166 + 1.64054I$ $b = 0.344830 - 0.452862I$	$-0.137370 + 1.058430I$	$-2.37760 - 6.58966I$
$u = 0.248102 - 0.239177I$ $a = 0.19166 - 1.64054I$ $b = 0.344830 + 0.452862I$	$-0.137370 - 1.058430I$	$-2.37760 + 6.58966I$

II. $\boldsymbol{I^u_2 = \langle -3.88 \times 10^{52} a^{15} u^4 + 1.91 \times 10^{52} a^{14} u^4 + \cdots + 3.58 \times 10^{52} a + 3.35 \times 10^{51},\ -a^{15} u^4 - 6a^{14} u^4 + \cdots - 102a - 31,\ u^5 + u^4 + 2u^3 + u^2 + u + 1 \rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} a \\ 5.32421a^{15}u^4 - 2.61440a^{14}u^4 + \cdots - 4.90733a - 0.459757 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.490922a^{15}u^4 + 0.697262a^{14}u^4 + \cdots - 1.84896a - 1.19139 \\ -8.42480a^{15}u^4 + 5.50719a^{14}u^4 + \cdots - 1.01737a - 0.0149474 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 5.32421a^{15}u^4 - 2.61440a^{14}u^4 + \cdots - 3.90733a - 0.459757 \\ 5.32421a^{15}u^4 - 2.61440a^{14}u^4 + \cdots - 4.90733a - 0.459757 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1.60664a^{15}u^4 - 4.72751a^{14}u^4 + \cdots + 0.297334a + 0.986032 \\ -0.511136a^{15}u^4 - 3.50909a^{14}u^4 + \cdots + 0.264202a - 0.293605 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 4.36323a^{15}u^4 - 4.09965a^{14}u^4 + \cdots - 0.228422a + 0.634601 \\ 10.9156a^{15}u^4 - 9.67127a^{14}u^4 + \cdots - 0.843113a - 0.611571 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 4.21926a^{15}u^4 - 5.16470a^{14}u^4 + \cdots + 1.00869a - 0.253935 \\ 3.09316a^{15}u^4 - 4.46543a^{14}u^4 + \cdots + 2.87103a + 0.821975 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} a^2u \\ 1.84334a^{15}u^4 - 2.28395a^{14}u^4 + \cdots + 0.634977a + 0.138061 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 3.14774a^{15}u^4 - 3.78321a^{14}u^4 + \cdots - 0.0774317a + 0.793497 \\ 8.97044a^{15}u^4 - 4.81864a^{14}u^4 + \cdots + 1.38621a - 0.694416 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -13.7656a^{15}u^4 + 38.1880a^{14}u^4 + \cdots - 3.46066a - 3.15724$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$(u^5 + u^4 + 2u^3 + u^2 + u + 1)^{16}$
c_2, c_3, c_7 c_9	$u^{80} - u^{79} + \cdots + 99094u - 20507$
c_5, c_6, c_{11}	$(u^8 - u^7 - 3u^6 + 2u^5 + 3u^4 - 2u - 1)^{10}$
c_8, c_{12}	$u^{80} + 5u^{79} + \cdots - 22u - 1$
c_{10}	$(u^8 + 3u^7 + 7u^6 + 10u^5 + 11u^4 + 10u^3 + 6u^2 + 4u + 1)^{10}$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)^{16}$
c_2, c_3, c_7 c_9	$y^{80} - 65y^{79} + \cdots - 11196460816y + 420537049$
c_5, c_6, c_{11}	$(y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1)^{10}$
c_8, c_{12}	$y^{80} - 13y^{79} + \cdots - 92y + 1$
c_{10}	$(y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1)^{10}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.339110 + 0.822375I$ $a = -0.367485 + 0.952224I$ $b = 0.10278 + 1.82740I$	$-3.56505 - 2.66181I$	$-8.06966 + 4.94144I$
$u = 0.339110 + 0.822375I$ $a = -0.922856 - 0.158406I$ $b = 1.148420 - 0.607014I$	$-3.76067 - 1.53058I$	$-3.59042 + 4.43065I$
$u = 0.339110 + 0.822375I$ $a = 1.073940 - 0.580876I$ $b = -1.58109 + 0.31189I$	$1.89703 - 1.53058I$	$-1.62085 + 4.43065I$
$u = 0.339110 + 0.822375I$ $a = 0.466007 - 1.158660I$ $b = -0.54911 - 1.77038I$	$-6.76512 + 1.04791I$	$-11.20781 + 0.86269I$
$u = 0.339110 + 0.822375I$ $a = -0.546602 + 1.252020I$ $b = 0.83813 + 1.77295I$	$-2.22602 + 4.91296I$	$-6.05644 - 0.86352I$
$u = 0.339110 + 0.822375I$ $a = -0.206431 + 0.502758I$ $b = 2.01649 - 1.09378I$	$-2.22602 - 7.97412I$	$-6.05644 + 9.72482I$
$u = 0.339110 + 0.822375I$ $a = 0.13870 + 1.45366I$ $b = 0.182681 + 0.812651I$	$-3.76067 - 1.53058I$	$-3.59042 + 4.43065I$
$u = 0.339110 + 0.822375I$ $a = 0.181301 - 0.315913I$ $b = -1.79265 + 1.21965I$	$-6.76512 - 4.10907I$	$-11.20781 + 7.99861I$
$u = 0.339110 + 0.822375I$ $a = 0.35344 - 1.77685I$ $b = -0.841882 - 0.686202I$	$1.89703 - 1.53058I$	$-1.62085 + 4.43065I$
$u = 0.339110 + 0.822375I$ $a = -0.0634617 + 0.0334338I$ $b = 1.45957 - 1.45839I$	$-3.56505 - 0.39935I$	$-8.06966 + 3.91986I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.339110 + 0.822375I$ $a = -1.94322 - 0.67631I$ $b = 0.907703 - 0.020698I$	$-3.56505 - 2.66181I$	$-8.06966 + 4.94144I$
$u = 0.339110 + 0.822375I$ $a = 2.07524 + 0.18802I$ $b = -1.110880 + 0.009680I$	$-6.76512 + 1.04791I$	$-11.20781 + 0.86269I$
$u = 0.339110 + 0.822375I$ $a = -2.20176 + 0.11125I$ $b = 1.214990 + 0.024941I$	$-2.22602 + 4.91296I$	$-6.05644 - 0.86352I$
$u = 0.339110 + 0.822375I$ $a = 0.89017 + 2.14189I$ $b = 0.0490156 + 0.0408516I$	$-3.56505 - 0.39935I$	$-8.06966 + 3.91986I$
$u = 0.339110 + 0.822375I$ $a = -0.49932 - 2.38574I$ $b = -0.321280 - 0.041968I$	$-6.76512 - 4.10907I$	$-11.20781 + 7.99861I$
$u = 0.339110 + 0.822375I$ $a = 0.27257 + 2.56443I$ $b = 0.483459 - 0.000726I$	$-2.22602 - 7.97412I$	$-6.05644 + 9.72482I$
$u = 0.339110 - 0.822375I$ $a = -0.367485 - 0.952224I$ $b = 0.10278 - 1.82740I$	$-3.56505 + 2.66181I$	$-8.06966 - 4.94144I$
$u = 0.339110 - 0.822375I$ $a = -0.922856 + 0.158406I$ $b = 1.148420 + 0.607014I$	$-3.76067 + 1.53058I$	$-3.59042 - 4.43065I$
$u = 0.339110 - 0.822375I$ $a = 1.073940 + 0.580876I$ $b = -1.58109 - 0.31189I$	$1.89703 + 1.53058I$	$-1.62085 - 4.43065I$
$u = 0.339110 - 0.822375I$ $a = 0.466007 + 1.158660I$ $b = -0.54911 + 1.77038I$	$-6.76512 - 1.04791I$	$-11.20781 - 0.86269I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.339110 - 0.822375I$ $a = -0.546602 - 1.252020I$ $b = 0.83813 - 1.77295I$	$-2.22602 - 4.91296I$	$-6.05644 + 0.86352I$
$u = 0.339110 - 0.822375I$ $a = -0.206431 - 0.502758I$ $b = 2.01649 + 1.09378I$	$-2.22602 + 7.97412I$	$-6.05644 - 9.72482I$
$u = 0.339110 - 0.822375I$ $a = 0.13870 - 1.45366I$ $b = 0.182681 - 0.812651I$	$-3.76067 + 1.53058I$	$-3.59042 - 4.43065I$
$u = 0.339110 - 0.822375I$ $a = 0.181301 + 0.315913I$ $b = -1.79265 - 1.21965I$	$-6.76512 + 4.10907I$	$-11.20781 - 7.99861I$
$u = 0.339110 - 0.822375I$ $a = 0.35344 + 1.77685I$ $b = -0.841882 + 0.686202I$	$1.89703 + 1.53058I$	$-1.62085 - 4.43065I$
$u = 0.339110 - 0.822375I$ $a = -0.0634617 - 0.0334338I$ $b = 1.45957 + 1.45839I$	$-3.56505 + 0.39935I$	$-8.06966 - 3.91986I$
$u = 0.339110 - 0.822375I$ $a = -1.94322 + 0.67631I$ $b = 0.907703 + 0.020698I$	$-3.56505 + 2.66181I$	$-8.06966 - 4.94144I$
$u = 0.339110 - 0.822375I$ $a = 2.07524 - 0.18802I$ $b = -1.110880 - 0.009680I$	$-6.76512 - 1.04791I$	$-11.20781 - 0.86269I$
$u = 0.339110 - 0.822375I$ $a = -2.20176 - 0.11125I$ $b = 1.214990 - 0.024941I$	$-2.22602 - 4.91296I$	$-6.05644 + 0.86352I$
$u = 0.339110 - 0.822375I$ $a = 0.89017 - 2.14189I$ $b = 0.0490156 - 0.0408516I$	$-3.56505 + 0.39935I$	$-8.06966 - 3.91986I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.339110 - 0.822375I$ $a = -0.49932 + 2.38574I$ $b = -0.321280 + 0.041968I$	$-6.76512 + 4.10907I$	$-11.20781 - 7.99861I$
$u = 0.339110 - 0.822375I$ $a = 0.27257 - 2.56443I$ $b = 0.483459 + 0.000726I$	$-2.22602 + 7.97412I$	$-6.05644 - 9.72482I$
$u = -0.766826$ $a = 1.05576$ $b = -0.497603$	-1.68869	-2.62440
$u = -0.766826$ $a = -0.370286 + 0.780866I$ $b = -0.283945 - 0.598788I$	3.96901	$-6 - 0.654819 + 0.10I$
$u = -0.766826$ $a = -0.370286 - 0.780866I$ $b = -0.283945 + 0.598788I$	3.96901	$-6 - 0.654819 + 0.10I$
$u = -0.766826$ $a = 0.903923 + 0.982518I$ $b = -1.135410 - 0.409074I$	$-4.69313 - 2.57849I$	$-10.24178 + 3.56796I$
$u = -0.766826$ $a = 0.903923 - 0.982518I$ $b = -1.135410 + 0.409074I$	$-4.69313 + 2.57849I$	$-10.24178 - 3.56796I$
$u = -0.766826$ $a = -0.648913$ $b = 0.809583$	-1.68869	-2.62440
$u = -0.766826$ $a = -1.174490 + 0.730601I$ $b = 1.195840 - 0.182400I$	$-1.49307 - 1.13123I$	$-7.10363 + 0.51079I$
$u = -0.766826$ $a = -1.174490 - 0.730601I$ $b = 1.195840 + 0.182400I$	$-1.49307 + 1.13123I$	$-7.10363 - 0.51079I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.766826$ $a=-0.761892+1.188100I$ $b=\ \ 1.117810-0.572107I$	$-0.15404+6.44354I$	$-5.09041-5.29417I$
$u=-0.766826$ $a=-0.761892-1.188100I$ $b=\ \ 1.117810+0.572107I$	$-0.15404-6.44354I$	$-5.09041+5.29417I$
$u=-0.766826$ $a=-1.48066+0.53346I$ $b=\ \ 0.693152-0.753420I$	$-4.69313+2.57849I$	$-10.24178-3.56796I$
$u=-0.766826$ $a=-1.48066-0.53346I$ $b=\ \ 0.693152+0.753420I$	$-4.69313-2.57849I$	$-10.24178+3.56796I$
$u=-0.766826$ $a=\ \ 1.55946+0.23786I$ $b=-0.900629-0.560243I$	$-1.49307+1.13123I$	$-7.10363-0.51079I$
$u=-0.766826$ $a=\ \ 1.55946-0.23786I$ $b=-0.900629+0.560243I$	$-1.49307-1.13123I$	$-7.10363+0.51079I$
$u=-0.766826$ $a=\ \ 1.45770+0.74607I$ $b=-0.584238-0.911062I$	$-0.15404-6.44354I$	$-5.09041+5.29417I$
$u=-0.766826$ $a=\ \ 1.45770-0.74607I$ $b=-0.584238+0.911062I$	$-0.15404+6.44354I$	$-5.09041-5.29417I$
$u=-0.455697+1.200150I$ $a=-0.901615-0.399433I$ $b=\ \ 1.33408-1.51873I$	$3.31744+10.84440I$	$-1.82724-8.79276I$
$u=-0.455697+1.200150I$ $a=\ \ 0.911125+0.324769I$ $b=-0.783801+0.570300I$	$1.78280+4.40083I$	$0.63878-3.49859I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.455697 + 1.200150I$ $a = 0.850967 + 0.443554I$ $b = -1.36424 + 1.32767I$	$-1.22165 + 6.97933I$	$-6.97861 - 7.06654I$
$u = -0.455697 + 1.200150I$ $a = -0.785387 - 0.510249I$ $b = 1.44471 - 1.03945I$	$1.97842 + 3.26960I$	$-3.84046 - 2.98779I$
$u = -0.455697 + 1.200150I$ $a = -0.276309 - 0.774749I$ $b = 0.621358 - 0.359220I$	$1.97842 + 5.53207I$	$-3.84046 - 4.00938I$
$u = -0.455697 + 1.200150I$ $a = -1.199160 - 0.026312I$ $b = 0.539500 - 0.744228I$	$7.44049 + 4.40083I$	$2.60835 - 3.49859I$
$u = -0.455697 + 1.200150I$ $a = 0.531846 - 0.561321I$ $b = 0.059879 + 0.229413I$	$3.31744 - 2.04270I$	$-1.82724 + 1.79559I$
$u = -0.455697 + 1.200150I$ $a = -0.632043 - 0.413099I$ $b = 0.804969 - 0.945492I$	$1.78280 + 4.40083I$	$0.63878 - 3.49859I$
$u = -0.455697 + 1.200150I$ $a = 0.691152 + 0.187097I$ $b = -0.57803 + 1.42718I$	$7.44049 + 4.40083I$	$2.60835 - 3.49859I$
$u = -0.455697 + 1.200150I$ $a = 1.156440 + 0.764669I$ $b = -0.970275 + 0.710064I$	$1.97842 + 3.26960I$	$-3.84046 - 2.98779I$
$u = -0.455697 + 1.200150I$ $a = 0.433409 + 0.353168I$ $b = -1.055730 - 0.021438I$	$1.97842 + 5.53207I$	$-3.84046 - 4.00938I$
$u = -0.455697 + 1.200150I$ $a = -1.34408 - 0.62637I$ $b = 0.920116 - 0.819164I$	$-1.22165 + 6.97933I$	$-6.97861 - 7.06654I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.455697+1.200150I$ $a=-0.094497+0.497973I$ $b=-0.170473+0.214897I$	$-1.22165+1.82234I$	$-6.97861+0.06937I$
$u=-0.455697+1.200150I$ $a=\ \ 1.47489+0.55158I$ $b=-0.890243+0.900055I$	$3.31744+10.84440I$	$-1.82724-8.79276I$
$u=-0.455697+1.200150I$ $a=-0.203634-0.064723I$ $b=\ \ 0.554582+0.340336I$	$-1.22165+1.82234I$	$-6.97861+0.06937I$
$u=-0.455697+1.200150I$ $a=-0.150510+0.107041I$ $b=-0.431310-0.894088I$	$3.31744-2.04270I$	$-1.82724+1.79559I$
$u=-0.455697-1.200150I$ $a=-0.901615+0.399433I$ $b=\ \ 1.33408+1.51873I$	$3.31744-10.84440I$	$-1.82724+8.79276I$
$u=-0.455697-1.200150I$ $a=\ \ 0.911125-0.324769I$ $b=-0.783801-0.570300I$	$1.78280-4.40083I$	$0.63878+3.49859I$
$u=-0.455697-1.200150I$ $a=\ \ 0.850967-0.443554I$ $b=-1.36424-1.32767I$	$-1.22165-6.97933I$	$-6.97861+7.06654I$
$u=-0.455697-1.200150I$ $a=-0.785387+0.510249I$ $b=\ \ 1.44471+1.03945I$	$1.97842-3.26960I$	$-3.84046+2.98779I$
$u=-0.455697-1.200150I$ $a=-0.276309+0.774749I$ $b=\ \ 0.621358+0.359220I$	$1.97842-5.53207I$	$-3.84046+4.00938I$
$u=-0.455697-1.200150I$ $a=-1.199160+0.026312I$ $b=\ \ 0.539500+0.744228I$	$7.44049-4.40083I$	$2.60835+3.49859I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.455697-1.200150I$ $a=0.531846+0.561321I$ $b=0.059879-0.229413I$	$3.31744+2.04270I$	$-1.82724-1.79559I$
$u=-0.455697-1.200150I$ $a=-0.632043+0.413099I$ $b=0.804969+0.945492I$	$1.78280-4.40083I$	$0.63878+3.49859I$
$u=-0.455697-1.200150I$ $a=0.691152-0.187097I$ $b=-0.57803-1.42718I$	$7.44049-4.40083I$	$2.60835+3.49859I$
$u=-0.455697-1.200150I$ $a=1.156440-0.764669I$ $b=-0.970275-0.710064I$	$1.97842-3.26960I$	$-3.84046+2.98779I$
$u=-0.455697-1.200150I$ $a=0.433409-0.353168I$ $b=-1.055730+0.021438I$	$1.97842-5.53207I$	$-3.84046+4.00938I$
$u=-0.455697-1.200150I$ $a=-1.34408+0.62637I$ $b=0.920116+0.819164I$	$-1.22165-6.97933I$	$-6.97861+7.06654I$
$u=-0.455697-1.200150I$ $a=-0.094497-0.497973I$ $b=-0.170473-0.214897I$	$-1.22165-1.82234I$	$-6.97861-0.06937I$
$u=-0.455697-1.200150I$ $a=1.47489-0.55158I$ $b=-0.890243-0.900055I$	$3.31744-10.84440I$	$-1.82724+8.79276I$
$u=-0.455697-1.200150I$ $a=-0.203634+0.064723I$ $b=0.554582-0.340336I$	$-1.22165-1.82234I$	$-6.97861-0.06937I$
$u=-0.455697-1.200150I$ $a=-0.150510-0.107041I$ $b=-0.431310+0.894088I$	$3.31744+2.04270I$	$-1.82724-1.79559I$

III. $I^u_3 = \langle -9u^{24} - 37u^{23} + \cdots + b + 37,\ -37u^{24} - 231u^{23} + \cdots + a - 6,\ u^{25} + 6u^{24} + \cdots + 5u + 1\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 37u^{24} + 231u^{23} + \cdots + 89u + 6 \\ 9u^{24} + 37u^{23} + \cdots - 179u - 37 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 59u^{24} + 357u^{23} + \cdots + 23u - 13 \\ 2u^{24} - 22u^{22} + \cdots - 121u - 24 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 46u^{24} + 268u^{23} + \cdots - 90u - 31 \\ 9u^{24} + 37u^{23} + \cdots - 179u - 37 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 2u^{24} + 13u^{23} + \cdots + 28u + 6 \\ u^{24} + 6u^{23} + \cdots + u - 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -33u^{24} - 167u^{23} + \cdots + 327u + 70 \\ 18u^{24} + 122u^{23} + \cdots + 122u + 16 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 4u^{24} + 14u^{23} + \cdots - 63u - 10 \\ -2u^{24} - 7u^{23} + \cdots + 62u + 11 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^{24} + 5u^{23} + \cdots - 20u - 6 \\ -u^{24} - 7u^{23} + \cdots - 10u - 1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -41u^{24} - 232u^{23} + \cdots + 170u + 45 \\ 6u^{24} + 56u^{23} + \cdots + 158u + 26 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= -25u^{24} - 177u^{23} - 829u^{22} - 2723u^{21} - 7226u^{20} - 15772u^{19} - 29737u^{18} - 48930u^{17} - 72023u^{16} - 95436u^{15} - 115378u^{14} - 127790u^{13} - 130502u^{12} - 123370u^{11} - 107948u^{10} - 87762u^9 - 65715u^8 - 45408u^7 - 28463u^6 - 16040u^5 - 7996u^4 - 3326u^3 - 1187u^2 - 278u - 47$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{25} - 6u^{24} + \cdots + 5u - 1$
c_2, c_7	$u^{25} + u^{24} + \cdots - 8u^2 + 1$
c_3, c_9	$u^{25} - u^{24} + \cdots + 8u^2 - 1$
c_4	$u^{25} + 6u^{24} + \cdots + 5u + 1$
c_5, c_6	$u^{25} - 12u^{23} + \cdots + 3u + 1$
c_8, c_{12}	$u^{25} - u^{24} + \cdots + u + 1$
c_{10}	$u^{25} - 3u^{24} + \cdots + 3u - 1$
c_{11}	$u^{25} - 12u^{23} + \cdots + 3u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{25} + 18y^{24} + \cdots - 17y - 1$
c_2, c_3, c_7 c_9	$y^{25} - 25y^{24} + \cdots + 16y - 1$
c_5, c_6, c_{11}	$y^{25} - 24y^{24} + \cdots + 9y - 1$
c_8, c_{12}	$y^{25} - 3y^{24} + \cdots - 3y - 1$
c_{10}	$y^{25} + 5y^{24} + \cdots + 11y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.340280 + 0.970760I$ $a = 0.733035 + 0.521131I$ $b = -0.256456 + 0.888932I$	$-2.20822 - 2.79065I$	$-0.19722 + 5.18724I$
$u = 0.340280 - 0.970760I$ $a = 0.733035 - 0.521131I$ $b = -0.256456 - 0.888932I$	$-2.20822 + 2.79065I$	$-0.19722 - 5.18724I$
$u = -0.891094$ $a = -0.881711$ $b = 0.785688$	-2.38230	-17.1210
$u = 0.554051 + 0.677642I$ $a = -0.056453 - 0.756727I$ $b = 0.481512 - 0.457520I$	$-4.53381 - 0.67178I$	$-10.16652 - 1.08812I$
$u = 0.554051 - 0.677642I$ $a = -0.056453 + 0.756727I$ $b = 0.481512 + 0.457520I$	$-4.53381 + 0.67178I$	$-10.16652 + 1.08812I$
$u = 0.181522 + 0.834696I$ $a = -1.03147 - 1.16547I$ $b = 0.785575 - 1.072520I$	$-3.03532 + 0.50472I$	$-2.24331 - 3.79308I$
$u = 0.181522 - 0.834696I$ $a = -1.03147 + 1.16547I$ $b = 0.785575 + 1.072520I$	$-3.03532 - 0.50472I$	$-2.24331 + 3.79308I$
$u = -0.538681 + 1.071460I$ $a = 1.200210 + 0.187835I$ $b = -0.84779 + 1.18479I$	$6.00109 + 7.29942I$	$-2.15509 - 5.87834I$
$u = -0.538681 - 1.071460I$ $a = 1.200210 - 0.187835I$ $b = -0.84779 - 1.18479I$	$6.00109 - 7.29942I$	$-2.15509 + 5.87834I$
$u = -0.386902 + 1.136400I$ $a = 0.831743 + 0.795993I$ $b = -1.226370 + 0.637222I$	$4.07499 + 3.15086I$	$1.69913 - 3.52727I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.386902 - 1.136400I$ $a = 0.831743 - 0.795993I$ $b = -1.226370 - 0.637222I$	$4.07499 - 3.15086I$	$1.69913 + 3.52727I$
$u = 0.141401 + 0.765915I$ $a = 0.93288 + 1.45565I$ $b = -0.982993 + 0.920335I$	$-6.37841 - 2.94813I$	$-8.04865 + 1.32415I$
$u = 0.141401 - 0.765915I$ $a = 0.93288 - 1.45565I$ $b = -0.982993 - 0.920335I$	$-6.37841 + 2.94813I$	$-8.04865 - 1.32415I$
$u = -0.487588 + 1.143510I$ $a = -0.921982 - 0.433012I$ $b = 0.944703 - 0.843167I$	$0.70838 + 4.90768I$	$-7.77575 - 6.66550I$
$u = -0.487588 - 1.143510I$ $a = -0.921982 + 0.433012I$ $b = 0.944703 + 0.843167I$	$0.70838 - 4.90768I$	$-7.77575 + 6.66550I$
$u = 0.079572 + 0.746253I$ $a = -0.98768 - 1.67072I$ $b = 1.16819 - 0.87000I$	$-1.83007 - 6.62683I$	$-2.82890 + 4.28250I$
$u = 0.079572 - 0.746253I$ $a = -0.98768 + 1.67072I$ $b = 1.16819 + 0.87000I$	$-1.83007 + 6.62683I$	$-2.82890 - 4.28250I$
$u = -0.911745 + 0.923852I$ $a = -0.294927 + 0.558621I$ $b = -0.247185 - 0.781789I$	$4.88033 - 1.87857I$	$5.35915 + 0.90270I$
$u = -0.911745 - 0.923852I$ $a = -0.294927 - 0.558621I$ $b = -0.247185 + 0.781789I$	$4.88033 + 1.87857I$	$5.35915 - 0.90270I$
$u = -0.36759 + 1.47078I$ $a = -0.220626 - 0.390624I$ $b = 0.655619 - 0.180904I$	$1.63072 + 6.74212I$	$-7.67319 - 10.61500I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.36759-1.47078I$ $a=-0.220626+0.390624I$ $b=0.655619+0.180904I$	$1.63072-6.74212I$	$-7.67319+10.61500I$
$u=-0.231611+0.293375I$ $a=2.01917+2.37829I$ $b=-1.165390+0.041539I$	$1.50367+0.07763I$	$-4.28149+0.94334I$
$u=-0.231611-0.293375I$ $a=2.01917-2.37829I$ $b=-1.165390-0.041539I$	$1.50367-0.07763I$	$-4.28149-0.94334I$
$u=-0.92717+1.53126I$ $a=0.236952-0.011389I$ $b=-0.202255+0.373394I$	$-1.26713+2.06104I$	0
$u=-0.92717-1.53126I$ $a=0.236952+0.011389I$ $b=-0.202255-0.373394I$	$-1.26713-2.06104I$	0

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^5+u^4+2u^3+u^2+u+1)^{16})(u^{25}-6u^{24}+\cdots+5u-1)$ $\cdot\,(u^{38}-21u^{37}+\cdots-4864u+256)$
c_2, c_7	$(u^{25}+u^{24}+\cdots-8u^2+1)(u^{38}-u^{37}+\cdots-u+1)$ $\cdot\,(u^{80}-u^{79}+\cdots+99094u-20507)$
c_3, c_9	$(u^{25}-u^{24}+\cdots+8u^2-1)(u^{38}-u^{37}+\cdots-u+1)$ $\cdot\,(u^{80}-u^{79}+\cdots+99094u-20507)$
c_4	$((u^5+u^4+2u^3+u^2+u+1)^{16})(u^{25}+6u^{24}+\cdots+5u+1)$ $\cdot\,(u^{38}-21u^{37}+\cdots-4864u+256)$
c_5, c_6	$((u^8-u^7-3u^6+2u^5+3u^4-2u-1)^{10})(u^{25}-12u^{23}+\cdots+3u+1)$ $\cdot\,(u^{38}+11u^{37}+\cdots-64u+32)$
c_8, c_{12}	$(u^{25}-u^{24}+\cdots+u+1)(u^{38}+u^{37}+\cdots+4u+1)$ $\cdot\,(u^{80}+5u^{79}+\cdots-22u-1)$
c_{10}	$(u^8+3u^7+7u^6+10u^5+11u^4+10u^3+6u^2+4u+1)^{10}$ $\cdot\,(u^{25}-3u^{24}+\cdots+3u-1)(u^{38}-30u^{37}+\cdots-1495744u+104800)$
c_{11}	$((u^8-u^7-3u^6+2u^5+3u^4-2u-1)^{10})(u^{25}-12u^{23}+\cdots+3u-1)$ $\cdot\,(u^{38}+11u^{37}+\cdots-64u+32)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y^5+3y^4+4y^3+y^2-y-1)^{16})(y^{25}+18y^{24}+\cdots-17y-1)$ $\cdot(y^{38}+21y^{37}+\cdots+262144y+65536)$
c_2, c_3, c_7 c_9	$(y^{25}-25y^{24}+\cdots+16y-1)(y^{38}-29y^{37}+\cdots+5y+1)$ $\cdot(y^{80}-65y^{79}+\cdots-11196460816y+420537049)$
c_5, c_6, c_{11}	$(y^8-7y^7+19y^6-22y^5+3y^4+14y^3-6y^2-4y+1)^{10}$ $\cdot(y^{25}-24y^{24}+\cdots+9y-1)(y^{38}-31y^{37}+\cdots+2560y+1024)$
c_8, c_{12}	$(y^{25}-3y^{24}+\cdots-3y-1)(y^{38}+9y^{37}+\cdots+40y+1)$ $\cdot(y^{80}-13y^{79}+\cdots-92y+1)$
c_{10}	$(y^8+5y^7+11y^6+6y^5-17y^4-34y^3-22y^2-4y+1)^{10}$ $\cdot(y^{25}+5y^{24}+\cdots+11y-1)$ $\cdot(y^{38}+10y^{37}+\cdots-49765582336y+10983040000)$