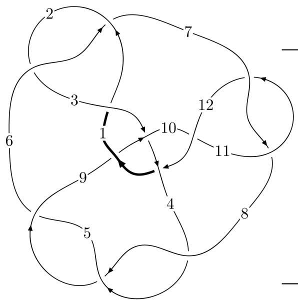
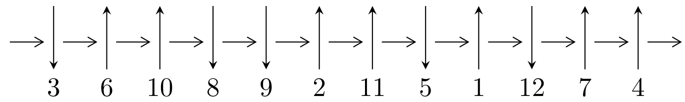
$12a_{0438}$ ($K12a_{0438}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$
\begin{aligned}
I_1^u &= \langle b-u,\ -111497u^{26}+189910u^{25}+\cdots+191887a-257923,\ u^{27}-u^{26}+\cdots+3u-1\rangle\\
I_2^u &= \langle -5.40927\times 10^{221}u^{103}-1.66221\times 10^{222}u^{102}+\cdots+5.33227\times 10^{221}b-3.81465\times 10^{223},\\
&\quad -3.26612\times 10^{223}u^{103}-1.05210\times 10^{224}u^{102}+\cdots+6.45205\times 10^{223}a-7.33788\times 10^{224},\\
&\quad u^{104}+2u^{103}+\cdots-17u+121\rangle\\
I_3^u &= \langle b+u,\ 2u^{12}-2u^{11}+6u^{10}-5u^9+12u^8-9u^7+13u^6-8u^5+8u^4-5u^3-u^2+a+u-1,\\
&\quad u^{13}-u^{12}+4u^{11}-3u^{10}+9u^9-6u^8+13u^7-7u^6+12u^5-6u^4+6u^3-3u^2+u-1\rangle\\
I_4^u &= \langle -u^{13}+u^{12}-4u^{11}+3u^{10}-8u^9+6u^8-10u^7+7u^6-10u^5+6u^4-8u^3+3u^2+b-4u+1,\\
&\quad 3u^{12}-3u^{11}+10u^{10}-8u^9+18u^8-15u^7+19u^6-14u^5+19u^4-10u^3+12u^2+a-5u+4,\\
&\quad u^{14}-u^{13}+4u^{12}-3u^{11}+8u^{10}-6u^9+10u^8-7u^7+10u^6-6u^5+8u^4-3u^3+4u^2-u+1\rangle
\end{aligned}
$$

* 4 irreducible components of $\dim_{\mathbb{C}}=0$, with total 158 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. $\boldsymbol{I_1^u = \langle b - u,\ -1.11 \times 10^5 u^{26} + 1.90 \times 10^5 u^{25} + \cdots + 1.92 \times 10^5 a - 2.58 \times 10^5,\ u^{27} - u^{26} + \cdots + 3u - 1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_8 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_2 = \begin{pmatrix}0.581056u^{26} - 0.989697u^{25} + \cdots + 1.16938u + 1.34414\\u\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-0.408642u^{26} - 0.985012u^{25} + \cdots - 0.399027u + 1.58106\\u^2\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-0.812598u^{26} + 0.389719u^{25} + \cdots + 3.97636u + 0.935498\\u^3 + u\end{pmatrix}$$
$$a_1 = \begin{pmatrix}0.423645u^{26} - 0.450249u^{25} + \cdots + 1.62541u + 0.921261\\u^5 + u^3 + u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}u^3\\u^3 + u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-0.920328u^{26} + 0.782815u^{25} + \cdots + 4.86559u + 0.300943\\-1.12217u^{26} + 0.772976u^{25} + \cdots + 2.73671u - 0.593714\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-0.240814u^{26} + 0.615836u^{25} + \cdots + 1.05933u - 1.48438\\-0.245436u^{26} + 0.0573358u^{25} + \cdots + 1.36645u - 0.289717\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-0.462053u^{26} + 0.0205433u^{25} + \cdots + 2.63666u + 1.03217\\-0.245436u^{26} + 0.0573358u^{25} + \cdots + 1.36645u - 0.289717\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{922784}{191887}u^{26} - \frac{996775}{191887}u^{25} + \cdots - \frac{2303468}{191887}u + \frac{1548666}{191887}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{10}	$u^{27} + 13u^{26} + \cdots + 3u - 1$
c_2, c_6, c_7 c_{11}	$u^{27} - u^{26} + \cdots + 3u - 1$
c_3	$u^{27} - 22u^{26} + \cdots + 24576u - 2560$
c_4, c_5, c_8	$u^{27} + 12u^{26} + \cdots + 16u - 32$
c_9, c_{12}	$u^{27} - u^{26} + \cdots - 3u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$y^{27} + 5y^{26} + \cdots + 87y - 1$
c_2, c_6, c_7 c_{11}	$y^{27} + 13y^{26} + \cdots + 3y - 1$
c_3	$y^{27} - 6y^{26} + \cdots - 262144y - 6553600$
c_4, c_5, c_8	$y^{27} - 24y^{26} + \cdots + 12032y - 1024$
c_9, c_{12}	$y^{27} + 11y^{26} + \cdots - 5y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.798209 + 0.530470I$ $a = 0.734106 + 0.052162I$ $b = -0.798209 + 0.530470I$	$4.09001 + 3.06443I$	$6.85135 - 1.90892I$
$u = -0.798209 - 0.530470I$ $a = 0.734106 - 0.052162I$ $b = -0.798209 - 0.530470I$	$4.09001 - 3.06443I$	$6.85135 + 1.90892I$
$u = -0.426161 + 0.952205I$ $a = 4.12175 + 1.75502I$ $b = -0.426161 + 0.952205I$	$-9.45283 - 3.29114I$	$-3.58272 + 7.60756I$
$u = -0.426161 - 0.952205I$ $a = 4.12175 - 1.75502I$ $b = -0.426161 - 0.952205I$	$-9.45283 + 3.29114I$	$-3.58272 - 7.60756I$
$u = 0.954879 + 0.448921I$ $a = -0.281262 + 0.163354I$ $b = 0.954879 + 0.448921I$	$-1.43373 - 6.86787I$	$2.22098 + 3.48109I$
$u = 0.954879 - 0.448921I$ $a = -0.281262 - 0.163354I$ $b = 0.954879 - 0.448921I$	$-1.43373 + 6.86787I$	$2.22098 - 3.48109I$
$u = 0.385727 + 1.023230I$ $a = -0.12490 + 3.10427I$ $b = 0.385727 + 1.023230I$	$-2.90362 + 4.50575I$	$-7.37031 - 4.71426I$
$u = 0.385727 - 1.023230I$ $a = -0.12490 - 3.10427I$ $b = 0.385727 - 1.023230I$	$-2.90362 - 4.50575I$	$-7.37031 + 4.71426I$
$u = -0.212212 + 1.078960I$ $a = 0.50612 + 2.28652I$ $b = -0.212212 + 1.078960I$	$-5.61409 - 0.39405I$	$-7.57855 - 0.70200I$
$u = -0.212212 - 1.078960I$ $a = 0.50612 - 2.28652I$ $b = -0.212212 - 1.078960I$	$-5.61409 + 0.39405I$	$-7.57855 + 0.70200I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.582844 + 0.672430I$ $a = -1.96986 - 0.14069I$ $b = 0.582844 + 0.672430I$	$2.10068 + 1.61837I$	$4.51956 - 4.09176I$
$u = 0.582844 - 0.672430I$ $a = -1.96986 + 0.14069I$ $b = 0.582844 - 0.672430I$	$2.10068 - 1.61837I$	$4.51956 + 4.09176I$
$u = 0.580393 + 1.018610I$ $a = -2.37719 + 1.54830I$ $b = 0.580393 + 1.018610I$	$-0.15243 + 7.74596I$	$-1.13140 - 8.56215I$
$u = 0.580393 - 1.018610I$ $a = -2.37719 - 1.54830I$ $b = 0.580393 - 1.018610I$	$-0.15243 - 7.74596I$	$-1.13140 + 8.56215I$
$u = 0.156183 + 1.196450I$ $a = -1.03361 + 2.66772I$ $b = 0.156183 + 1.196450I$	$-13.26850 - 1.40447I$	$-9.24996 + 0.64080I$
$u = 0.156183 - 1.196450I$ $a = -1.03361 - 2.66772I$ $b = 0.156183 - 1.196450I$	$-13.26850 + 1.40447I$	$-9.24996 - 0.64080I$
$u = -0.486526 + 1.105720I$ $a = 0.71115 + 2.96516I$ $b = -0.486526 + 1.105720I$	$-7.98758 - 9.88572I$	$-5.51020 + 9.99998I$
$u = -0.486526 - 1.105720I$ $a = 0.71115 - 2.96516I$ $b = -0.486526 - 1.105720I$	$-7.98758 + 9.88572I$	$-5.51020 - 9.99998I$
$u = -0.698815 + 0.260905I$ $a = -0.249931 + 0.254046I$ $b = -0.698815 + 0.260905I$	$-3.08031 + 1.04158I$	$0.697827 + 0.089058I$
$u = -0.698815 - 0.260905I$ $a = -0.249931 - 0.254046I$ $b = -0.698815 - 0.260905I$	$-3.08031 - 1.04158I$	$0.697827 - 0.089058I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.646787+1.102220I$ $a=\ \ 1.64707+1.85074I$ $b=-0.646787+1.102220I$	$0.59333-14.04150I$	$0.79014+10.59403I$
$u=-0.646787-1.102220I$ $a=\ \ 1.64707-1.85074I$ $b=-0.646787-1.102220I$	$0.59333+14.04150I$	$0.79014-10.59403I$
$u=\ \ 0.282967+0.645901I$ $a=\ \ 0.678786+0.641978I$ $b=\ \ 0.282967+0.645901I$	$-0.20845+1.57682I$	$-2.21035-5.49069I$
$u=\ \ 0.282967-0.645901I$ $a=\ \ 0.678786-0.641978I$ $b=\ \ 0.282967-0.645901I$	$-0.20845-1.57682I$	$-2.21035+5.49069I$
$u=\ \ 0.663935+1.182010I$ $a=-1.32463+2.15062I$ $b=\ \ 0.663935+1.182010I$	$-6.0186+18.7694I$	$-2.19898-10.24193I$
$u=\ \ 0.663935-1.182010I$ $a=-1.32463-2.15062I$ $b=\ \ 0.663935-1.182010I$	$-6.0186-18.7694I$	$-2.19898+10.24193I$
$u=\ \ 0.323566$ $a=\ \ 1.92480$ $b=\ \ 0.323566$	1.13556	9.50520

II. $\boldsymbol{I^u_2 = \langle -5.41 \times 10^{221} u^{103} - 1.66 \times 10^{222} u^{102} + \cdots + 5.33 \times 10^{221} b - 3.81 \times 10^{223},\ -3.27 \times 10^{223} u^{103} - 1.05 \times 10^{224} u^{102} + \cdots + 6.45 \times 10^{223} a - 7.34 \times 10^{224},\ u^{104} + 2u^{103} + \cdots - 17u + 121 \rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.506215u^{103} + 1.63064u^{102} + \cdots + 29.3200u + 11.3730 \\ 1.01444u^{103} + 3.11726u^{102} + \cdots + 221.790u + 71.5390 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -1.01826u^{103} - 1.89566u^{102} + \cdots - 98.4955u + 153.705 \\ -0.962126u^{103} - 1.98060u^{102} + \cdots - 150.377u + 97.0479 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -0.104590u^{103} - 0.264231u^{102} + \cdots - 275.043u - 157.743 \\ 0.835266u^{103} + 1.18555u^{102} + \cdots - 72.8082u - 246.443 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.758472u^{103} - 1.35795u^{102} + \cdots - 193.645u + 109.101 \\ 0.136944u^{103} + 0.870777u^{102} + \cdots - 101.859u + 34.2650 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^3 \\ u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.0375614u^{103} - 0.896782u^{102} + \cdots - 369.104u - 256.644 \\ 1.79450u^{103} + 3.15476u^{102} + \cdots - 75.5459u - 381.742 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.129934u^{103} - 0.0682942u^{102} + \cdots + 180.501u + 129.995 \\ 0.351406u^{103} + 1.08238u^{102} + \cdots + 73.6035u + 75.0223 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -1.05156u^{103} - 1.82989u^{102} + \cdots - 284.135u + 25.6770 \\ 0.0400246u^{103} - 0.880599u^{102} + \cdots - 216.852u - 249.262 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 1.64573u^{103} + 4.55387u^{102} + \cdots + 785.939u + 299.162$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{10}	$u^{104} + 46u^{103} + \cdots + 249939u + 14641$
c_2, c_6, c_7 c_{11}	$u^{104} + 2u^{103} + \cdots - 17u + 121$
c_3	$(u^{52} + 10u^{51} + \cdots - 3u - 1)^2$
c_4, c_5, c_8	$(u^{52} - 5u^{51} + \cdots + 7u + 1)^2$
c_9, c_{12}	$u^{104} + 13u^{103} + \cdots + 3452u + 283$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$y^{104} + 34y^{103} + \cdots + 3659910927y + 214358881$
c_2, c_6, c_7 c_{11}	$y^{104} + 46y^{103} + \cdots + 249939y + 14641$
c_3	$(y^{52} - 12y^{51} + \cdots - 43y + 1)^2$
c_4, c_5, c_8	$(y^{52} - 53y^{51} + \cdots - 37y + 1)^2$
c_9, c_{12}	$y^{104} - 5y^{103} + \cdots + 215340y + 80089$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.601006 + 0.783368I$ $a = 0.0584591 + 0.0734378I$ $b = 0.723694 + 1.004170I$	$1.55323 + 1.66347I$	0
$u = -0.601006 - 0.783368I$ $a = 0.0584591 - 0.0734378I$ $b = 0.723694 - 1.004170I$	$1.55323 - 1.66347I$	0
$u = -0.625964 + 0.763245I$ $a = 0.130359 - 0.723406I$ $b = 0.924850 + 0.421097I$	$3.26376 - 0.55062I$	0
$u = -0.625964 - 0.763245I$ $a = 0.130359 + 0.723406I$ $b = 0.924850 - 0.421097I$	$3.26376 + 0.55062I$	0
$u = 0.924850 + 0.421097I$ $a = 0.646631 + 0.302782I$ $b = -0.625964 + 0.763245I$	$3.26376 - 0.55062I$	0
$u = 0.924850 - 0.421097I$ $a = 0.646631 - 0.302782I$ $b = -0.625964 - 0.763245I$	$3.26376 + 0.55062I$	0
$u = 0.031250 + 0.980911I$ $a = -0.235677 + 0.376852I$ $b = -0.635597 + 0.291200I$	$-1.55506 + 2.06501I$	0
$u = 0.031250 - 0.980911I$ $a = -0.235677 - 0.376852I$ $b = -0.635597 - 0.291200I$	$-1.55506 - 2.06501I$	0
$u = -0.851961 + 0.480235I$ $a = 0.859609 - 0.480965I$ $b = -0.641480 - 1.066260I$	$2.47458 + 8.47773I$	0
$u = -0.851961 - 0.480235I$ $a = 0.859609 + 0.480965I$ $b = -0.641480 + 1.066260I$	$2.47458 - 8.47773I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.029580 + 0.075923I$ $a = -0.916980 + 1.015670I$ $b = 0.480542 + 0.932970I$	$-1.46501 + 2.48222I$	0
$u = -1.029580 - 0.075923I$ $a = -0.916980 - 1.015670I$ $b = 0.480542 - 0.932970I$	$-1.46501 - 2.48222I$	0
$u = 0.295716 + 0.919872I$ $a = -0.32064 - 2.78318I$ $b = 0.487555 - 1.059280I$	$-2.18861 - 2.12521I$	0
$u = 0.295716 - 0.919872I$ $a = -0.32064 + 2.78318I$ $b = 0.487555 + 1.059280I$	$-2.18861 + 2.12521I$	0
$u = 0.425973 + 0.861359I$ $a = 0.528034 + 0.144800I$ $b = 0.441668 + 0.214876I$	$-0.11368 + 1.81640I$	0
$u = 0.425973 - 0.861359I$ $a = 0.528034 - 0.144800I$ $b = 0.441668 - 0.214876I$	$-0.11368 - 1.81640I$	0
$u = 0.480542 + 0.932970I$ $a = -0.566525 - 1.221080I$ $b = -1.029580 + 0.075923I$	$-1.46501 + 2.48222I$	0
$u = 0.480542 - 0.932970I$ $a = -0.566525 + 1.221080I$ $b = -1.029580 - 0.075923I$	$-1.46501 - 2.48222I$	0
$u = 0.429770 + 0.968741I$ $a = -1.21282 + 1.70756I$ $b = -0.546527 + 1.284080I$	$-5.52629 - 2.94682I$	0
$u = 0.429770 - 0.968741I$ $a = -1.21282 - 1.70756I$ $b = -0.546527 - 1.284080I$	$-5.52629 + 2.94682I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.986696 + 0.396692I$ $a = -0.624859 - 0.884889I$ $b = 0.672647 - 1.153190I$	$-3.60087 - 12.79700I$	0
$u = 0.986696 - 0.396692I$ $a = -0.624859 + 0.884889I$ $b = 0.672647 + 1.153190I$	$-3.60087 + 12.79700I$	0
$u = -0.922258 + 0.122473I$ $a = -0.424499 + 0.044620I$ $b = 0.438182 - 0.776661I$	$-0.90908 - 1.34820I$	0
$u = -0.922258 - 0.122473I$ $a = -0.424499 - 0.044620I$ $b = 0.438182 + 0.776661I$	$-0.90908 + 1.34820I$	0
$u = 0.902428 + 0.580570I$ $a = 0.944671 - 0.522436I$ $b = -0.606198 - 0.907558I$	$2.81324 + 4.29790I$	0
$u = 0.902428 - 0.580570I$ $a = 0.944671 + 0.522436I$ $b = -0.606198 + 0.907558I$	$2.81324 - 4.29790I$	0
$u = 0.776726 + 0.758218I$ $a = -0.363743 - 0.173713I$ $b = -1.103830 + 0.728123I$	$-0.184790 - 0.909141I$	0
$u = 0.776726 - 0.758218I$ $a = -0.363743 + 0.173713I$ $b = -1.103830 - 0.728123I$	$-0.184790 + 0.909141I$	0
$u = -0.606198 + 0.907558I$ $a = -0.646877 - 0.841459I$ $b = 0.902428 - 0.580570I$	$2.81324 - 4.29790I$	0
$u = -0.606198 - 0.907558I$ $a = -0.646877 + 0.841459I$ $b = 0.902428 + 0.580570I$	$2.81324 + 4.29790I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.499516 + 0.974559I$ $a = 1.75948 - 2.30223I$ $b = -0.64443 - 1.29302I$	$-5.06786 + 8.46879I$	0
$u = 0.499516 - 0.974559I$ $a = 1.75948 + 2.30223I$ $b = -0.64443 + 1.29302I$	$-5.06786 - 8.46879I$	0
$u = -0.633873 + 0.899833I$ $a = -1.40684 - 1.55880I$ $b = 0.710426 - 1.119870I$	$1.20873 - 6.54051I$	0
$u = -0.633873 - 0.899833I$ $a = -1.40684 + 1.55880I$ $b = 0.710426 + 1.119870I$	$1.20873 + 6.54051I$	0
$u = 0.438182 + 0.776661I$ $a = 0.303685 - 0.325708I$ $b = -0.922258 - 0.122473I$	$-0.90908 + 1.34820I$	0
$u = 0.438182 - 0.776661I$ $a = 0.303685 + 0.325708I$ $b = -0.922258 + 0.122473I$	$-0.90908 - 1.34820I$	0
$u = -0.354334 + 0.817967I$ $a = 1.38616 + 3.19989I$ $b = -0.354334 - 0.817967I$	-8.87842	0
$u = -0.354334 - 0.817967I$ $a = 1.38616 - 3.19989I$ $b = -0.354334 + 0.817967I$	-8.87842	0
$u = 0.785536 + 0.418604I$ $a = -0.544261 + 1.279960I$ $b = 0.008149 + 1.329420I$	$-8.10565 - 3.93282I$	0
$u = 0.785536 - 0.418604I$ $a = -0.544261 - 1.279960I$ $b = 0.008149 - 1.329420I$	$-8.10565 + 3.93282I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.558791 + 0.968003I$ $a = -0.063595 + 1.107100I$ $b = 0.641644 - 0.575513I$	$1.18258 + 2.94175I$	0
$u = 0.558791 - 0.968003I$ $a = -0.063595 - 1.107100I$ $b = 0.641644 + 0.575513I$	$1.18258 - 2.94175I$	0
$u = -0.504260 + 1.007480I$ $a = -0.41215 - 2.73765I$ $b = -0.366905 - 1.121840I$	$-8.78594 - 2.32359I$	0
$u = -0.504260 - 1.007480I$ $a = -0.41215 + 2.73765I$ $b = -0.366905 + 1.121840I$	$-8.78594 + 2.32359I$	0
$u = 0.641644 + 0.575513I$ $a = -1.38782 + 0.37658I$ $b = 0.558791 - 0.968003I$	$1.18258 - 2.94175I$	0
$u = 0.641644 - 0.575513I$ $a = -1.38782 - 0.37658I$ $b = 0.558791 + 0.968003I$	$1.18258 + 2.94175I$	0
$u = 0.487555 + 1.059280I$ $a = 1.75487 - 1.51966I$ $b = 0.295716 - 0.919872I$	$-2.18861 + 2.12521I$	0
$u = 0.487555 - 1.059280I$ $a = 1.75487 + 1.51966I$ $b = 0.295716 + 0.919872I$	$-2.18861 - 2.12521I$	0
$u = -0.252289 + 1.144220I$ $a = -0.90905 + 1.41665I$ $b = -0.547375 + 0.522103I$	$-7.35313 - 1.89826I$	0
$u = -0.252289 - 1.144220I$ $a = -0.90905 - 1.41665I$ $b = -0.547375 - 0.522103I$	$-7.35313 + 1.89826I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.442489 + 0.697558I$ $a = -0.0215440 + 0.0999968I$ $b = -0.673127 + 1.235190I$	$-4.12299 - 4.50302I$	0
$u = 0.442489 - 0.697558I$ $a = -0.0215440 - 0.0999968I$ $b = -0.673127 - 1.235190I$	$-4.12299 + 4.50302I$	0
$u = -0.366905 + 1.121840I$ $a = -1.55841 - 2.13414I$ $b = -0.504260 - 1.007480I$	$-8.78594 + 2.32359I$	0
$u = -0.366905 - 1.121840I$ $a = -1.55841 + 2.13414I$ $b = -0.504260 + 1.007480I$	$-8.78594 - 2.32359I$	0
$u = 0.037861 + 1.180360I$ $a = 0.16520 - 1.99220I$ $b = -0.536637 - 1.062390I$	$-3.63796 + 6.54304I$	0
$u = 0.037861 - 1.180360I$ $a = 0.16520 + 1.99220I$ $b = -0.536637 + 1.062390I$	$-3.63796 - 6.54304I$	0
$u = -0.536637 + 1.062390I$ $a = -0.98281 - 1.72288I$ $b = 0.037861 - 1.180360I$	$-3.63796 - 6.54304I$	0
$u = -0.536637 - 1.062390I$ $a = -0.98281 + 1.72288I$ $b = 0.037861 + 1.180360I$	$-3.63796 + 6.54304I$	0
$u = 0.724416 + 0.947735I$ $a = 0.52725 - 1.41910I$ $b = -1.058660 - 0.927148I$	$-0.76003 + 6.57704I$	0
$u = 0.724416 - 0.947735I$ $a = 0.52725 + 1.41910I$ $b = -1.058660 + 0.927148I$	$-0.76003 - 6.57704I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.409809 + 1.125960I$ $a = 0.05894 + 1.41666I$ $b = -0.217013 + 0.721229I$	$-1.44654 + 2.79038I$	0
$u = 0.409809 - 1.125960I$ $a = 0.05894 - 1.41666I$ $b = -0.217013 - 0.721229I$	$-1.44654 - 2.79038I$	0
$u = -0.543575 + 1.094100I$ $a = -0.769980 + 0.146024I$ $b = -0.598812 - 0.128338I$	$-5.39609 - 5.71097I$	0
$u = -0.543575 - 1.094100I$ $a = -0.769980 - 0.146024I$ $b = -0.598812 + 0.128338I$	$-5.39609 + 5.71097I$	0
$u = 0.723694 + 1.004170I$ $a = -0.0426830 + 0.0615170I$ $b = -0.601006 + 0.783368I$	$1.55323 + 1.66347I$	0
$u = 0.723694 - 1.004170I$ $a = -0.0426830 - 0.0615170I$ $b = -0.601006 - 0.783368I$	$1.55323 - 1.66347I$	0
$u = -0.547375 + 0.522103I$ $a = 0.05604 + 2.60664I$ $b = -0.252289 + 1.144220I$	$-7.35313 - 1.89826I$	$-3.11574 + 3.33363I$
$u = -0.547375 - 0.522103I$ $a = 0.05604 - 2.60664I$ $b = -0.252289 - 1.144220I$	$-7.35313 + 1.89826I$	$-3.11574 - 3.33363I$
$u = -0.641480 + 1.066260I$ $a = -0.358729 + 0.686039I$ $b = -0.851961 - 0.480235I$	$2.47458 - 8.47773I$	0
$u = -0.641480 - 1.066260I$ $a = -0.358729 - 0.686039I$ $b = -0.851961 + 0.480235I$	$2.47458 + 8.47773I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.217013+0.721229I$ $a=\ 1.42348+1.74983I$ $b=\ 0.409809+1.125960I$	$-1.44654+2.79038I$	$-3.18108-7.81868I$
$u=-0.217013-0.721229I$ $a=\ 1.42348-1.74983I$ $b=\ 0.409809-1.125960I$	$-1.44654-2.79038I$	$-3.18108+7.81868I$
$u=\ 0.269989+0.699887I$ $a=\ 0.79505-1.96652I$ $b=-0.531628-1.197670I$	$-4.54291+6.20206I$	$-3.22343-7.94187I$
$u=\ 0.269989-0.699887I$ $a=\ 0.79505+1.96652I$ $b=-0.531628+1.197670I$	$-4.54291-6.20206I$	$-3.22343+7.94187I$
$u=\ 0.617899+1.107080I$ $a=\ 1.03560-1.95299I$ $b=\ 0.079207-1.395880I$	$-10.12590+9.22402I$	0
$u=\ 0.617899-1.107080I$ $a=\ 1.03560+1.95299I$ $b=\ 0.079207+1.395880I$	$-10.12590-9.22402I$	0
$u=\ 0.223884+0.677776I$ $a=\ 1.02403-3.10009I$ $b=\ 0.223884-0.677776I$	0.423251	$-1.45472+0.I$
$u=\ 0.223884-0.677776I$ $a=\ 1.02403+3.10009I$ $b=\ 0.223884+0.677776I$	0.423251	$-1.45472+0.I$
$u=-0.635597+0.291200I$ $a=\ 0.359559+0.509922I$ $b=\ 0.031250+0.980911I$	$-1.55506+2.06501I$	$-1.16113-4.48303I$
$u=-0.635597-0.291200I$ $a=\ 0.359559-0.509922I$ $b=\ 0.031250-0.980911I$	$-1.55506-2.06501I$	$-1.16113+4.48303I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.531628+1.197670I$ $a=-0.510395-1.101850I$ $b=\ \ 0.269989-0.699887I$	$-4.54291-6.20206I$	0
$u=-0.531628-1.197670I$ $a=-0.510395+1.101850I$ $b=\ \ 0.269989+0.699887I$	$-4.54291+6.20206I$	0
$u=-1.103830+0.728123I$ $a=-0.075822+0.322076I$ $b=\ \ 0.776726+0.758218I$	$-0.184790-0.909141I$	0
$u=-1.103830-0.728123I$ $a=-0.075822-0.322076I$ $b=\ \ 0.776726-0.758218I$	$-0.184790+0.909141I$	0
$u=\ \ 0.710426+1.119870I$ $a=\ \ 1.10367-1.34867I$ $b=-0.633873-0.899833I$	$1.20873+6.54051I$	0
$u=\ \ 0.710426-1.119870I$ $a=\ \ 1.10367+1.34867I$ $b=-0.633873+0.899833I$	$1.20873-6.54051I$	0
$u=\ \ 0.008149+1.329420I$ $a=\ \ 0.580472+0.728186I$ $b=\ \ 0.785536+0.418604I$	$-8.10565-3.93282I$	0
$u=\ \ 0.008149-1.329420I$ $a=\ \ 0.580472-0.728186I$ $b=\ \ 0.785536-0.418604I$	$-8.10565+3.93282I$	0
$u=\ \ 0.672647+1.153190I$ $a=\ \ 0.625101+0.594864I$ $b=\ \ 0.986696-0.396692I$	$-3.60087+12.79700I$	0
$u=\ \ 0.672647-1.153190I$ $a=\ \ 0.625101-0.594864I$ $b=\ \ 0.986696+0.396692I$	$-3.60087-12.79700I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.598812 + 0.128338I$ $a = -0.09774 - 1.56034I$ $b = -0.543575 - 1.094100I$	$-5.39609 + 5.71097I$	$-1.75805 - 4.99375I$
$u = -0.598812 - 0.128338I$ $a = -0.09774 + 1.56034I$ $b = -0.543575 + 1.094100I$	$-5.39609 - 5.71097I$	$-1.75805 + 4.99375I$
$u = -0.546527 + 1.284080I$ $a = 0.31967 + 1.55809I$ $b = 0.429770 + 0.968741I$	$-5.52629 - 2.94682I$	0
$u = -0.546527 - 1.284080I$ $a = 0.31967 - 1.55809I$ $b = 0.429770 - 0.968741I$	$-5.52629 + 2.94682I$	0
$u = 0.079207 + 1.395880I$ $a = 0.15657 - 1.99846I$ $b = 0.617899 - 1.107080I$	$-10.12590 - 9.22402I$	0
$u = 0.079207 - 1.395880I$ $a = 0.15657 + 1.99846I$ $b = 0.617899 + 1.107080I$	$-10.12590 + 9.22402I$	0
$u = -0.673127 + 1.235190I$ $a = 0.0452102 + 0.0395523I$ $b = 0.442489 + 0.697558I$	$-4.12299 - 4.50302I$	0
$u = -0.673127 - 1.235190I$ $a = 0.0452102 - 0.0395523I$ $b = 0.442489 - 0.697558I$	$-4.12299 + 4.50302I$	0
$u = -1.058660 + 0.927148I$ $a = -0.675806 - 1.090900I$ $b = 0.724416 - 0.947735I$	$-0.76003 - 6.57704I$	0
$u = -1.058660 - 0.927148I$ $a = -0.675806 + 1.090900I$ $b = 0.724416 + 0.947735I$	$-0.76003 + 6.57704I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.64443 + 1.29302I$ $a = -1.31394 - 1.76007I$ $b = 0.499516 - 0.974559I$	$-5.06786 - 8.46879I$	0
$u = -0.64443 - 1.29302I$ $a = -1.31394 + 1.76007I$ $b = 0.499516 + 0.974559I$	$-5.06786 + 8.46879I$	0
$u = 0.441668 + 0.214876I$ $a = 0.643509 + 0.856375I$ $b = 0.425973 + 0.861359I$	$-0.11368 + 1.81640I$	$0.19208 - 3.30081I$
$u = 0.441668 - 0.214876I$ $a = 0.643509 - 0.856375I$ $b = 0.425973 - 0.861359I$	$-0.11368 - 1.81640I$	$0.19208 + 3.30081I$

III. $I_3^u = \langle b + u,\ 2u^{12} - 2u^{11} + \cdots + a - 1,\ u^{13} - u^{12} + \cdots + u - 1 \rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -2u^{12} + 2u^{11} + \cdots - u + 1 \\ -u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -2u^{11} + u^{10} + \cdots - 3u + 3 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^{11} + 2u^9 + u^8 + 3u^7 + 3u^6 + u^5 + 5u^4 - 2u^3 + 4u^2 - 4u + 1 \\ -u^3 - u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^{12} - 2u^{10} - u^9 - 3u^8 - 3u^7 - u^6 - 6u^5 + 2u^4 - 5u^3 + 5u^2 - 2u + 2 \\ -u^5 - u^3 - u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^3 \\ u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^{10} - 2u^9 + 4u^8 - 5u^7 + 8u^6 - 9u^5 + 10u^4 - 9u^3 + 7u^2 - 5u + 2 \\ -u^9 + u^8 - 3u^7 + 2u^6 - 5u^5 + 3u^4 - 6u^3 + 2u^2 - 3u + 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^{11} - u^{10} + 4u^9 - 3u^8 + 9u^7 - 6u^6 + 12u^5 - 7u^4 + 11u^3 - 6u^2 + 3u - 3 \\ u^{12} - u^{11} + 3u^{10} - 2u^9 + 6u^8 - 3u^7 + 7u^6 - 2u^5 + 5u^4 + u^2 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^{12} + 2u^{11} + \cdots - 2u + 1 \\ -u^{12} + u^{11} - 3u^{10} + 2u^9 - 6u^8 + 3u^7 - 7u^6 + 2u^5 - 5u^4 - u^2 - u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= -6u^{12} + 8u^{11} - 21u^{10} + 21u^9 - 42u^8 + 42u^7 - 55u^6 + 47u^5 - 41u^4 + 41u^3 - 18u^2 + 14u - 4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{10}	$u^{13} - 7u^{12} + \cdots - 5u + 1$
c_2, c_7	$u^{13} - u^{12} + \cdots + u - 1$
c_3	$u^{13} - 5u^{12} + \cdots - u - 1$
c_4, c_5	$u^{13} + u^{12} + \cdots - u - 1$
c_6, c_{11}	$u^{13} + u^{12} + \cdots + u + 1$
c_8	$u^{13} - u^{12} + \cdots - u + 1$
c_9, c_{12}	$u^{13} - u^{12} + \cdots - u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$y^{13} + 7y^{12} + \cdots + 7y - 1$
c_2, c_6, c_7 c_{11}	$y^{13} + 7y^{12} + \cdots - 5y - 1$
c_3	$y^{13} - 5y^{12} + \cdots + 7y - 1$
c_4, c_5, c_8	$y^{13} - 15y^{12} + \cdots + 7y - 1$
c_9, c_{12}	$y^{13} + y^{12} + \cdots - y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.253183 + 0.920765I$ $a = -2.52282 - 0.15008I$ $b = -0.253183 - 0.920765I$	$-9.61431 + 2.16485I$	$-6.94667 - 1.68072I$
$u = 0.253183 - 0.920765I$ $a = -2.52282 + 0.15008I$ $b = -0.253183 + 0.920765I$	$-9.61431 - 2.16485I$	$-6.94667 + 1.68072I$
$u = -0.385741 + 1.009650I$ $a = -0.05256 - 2.10788I$ $b = 0.385741 - 1.009650I$	$-2.05382 - 5.10474I$	$1.17110 + 8.30767I$
$u = -0.385741 - 1.009650I$ $a = -0.05256 + 2.10788I$ $b = 0.385741 + 1.009650I$	$-2.05382 + 5.10474I$	$1.17110 - 8.30767I$
$u = -0.704865 + 0.948521I$ $a = -1.23793 - 1.24160I$ $b = 0.704865 - 0.948521I$	$1.52123 - 5.50103I$	$5.31871 + 4.15235I$
$u = -0.704865 - 0.948521I$ $a = -1.23793 + 1.24160I$ $b = 0.704865 + 0.948521I$	$1.52123 + 5.50103I$	$5.31871 - 4.15235I$
$u = 0.451929 + 1.144740I$ $a = 1.05608 - 2.31391I$ $b = -0.451929 - 1.144740I$	$-6.73123 + 8.00105I$	$-4.99764 - 6.83654I$
$u = 0.451929 - 1.144740I$ $a = 1.05608 + 2.31391I$ $b = -0.451929 + 1.144740I$	$-6.73123 - 8.00105I$	$-4.99764 + 6.83654I$
$u = 0.848677 + 0.963431I$ $a = 0.61102 - 1.28409I$ $b = -0.848677 - 0.963431I$	$-1.55332 + 6.41919I$	$-4.87371 - 5.93341I$
$u = 0.848677 - 0.963431I$ $a = 0.61102 + 1.28409I$ $b = -0.848677 + 0.963431I$	$-1.55332 - 6.41919I$	$-4.87371 + 5.93341I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.263568 + 0.615341I$ $a = 1.20381 - 2.39140I$ $b = 0.263568 - 0.615341I$	$0.672679 - 1.100140I$	$2.76274 + 4.26053I$
$u = -0.263568 - 0.615341I$ $a = 1.20381 + 2.39140I$ $b = 0.263568 + 0.615341I$	$0.672679 + 1.100140I$	$2.76274 - 4.26053I$
$u = 0.600770$ $a = 0.884799$ $b = -0.600770$	-0.671001	3.13090

IV.

$\boldsymbol{I_4^u = \langle -u^{13}+u^{12}+\cdots+b+1,\ 3u^{12}-3u^{11}+\cdots+a+4,\ u^{14}-u^{13}+\cdots-u+1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_8 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-3u^{12}+3u^{11}+\cdots+5u-4\\u^{13}-u^{12}+\cdots+4u-1\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-4u^{13}+4u^{12}+\cdots+2u^2-4u\\-u^{13}-3u^{11}+\cdots-u-3\end{pmatrix}$$
$$a_3 = \begin{pmatrix}u^{12}-u^{11}+3u^{10}-u^9+4u^8-u^7+3u^6+u^5+2u^4+u^2+3u\\-2u^{13}+3u^{12}+\cdots-3u+3\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-3u^{13}-9u^{11}+\cdots-u^2-7u\\u^{13}-4u^{12}+\cdots+u-5\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}u^3\\u^3+u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}u^{12}+2u^{10}+2u^9+2u^8+3u^7+4u^5+3u^3+4u\\-3u^{13}+4u^{12}+\cdots-3u+3\end{pmatrix}$$
$$a_9 = \begin{pmatrix}3u^{12}-u^{11}+\cdots+u+3\\-2u^{13}+4u^{12}+\cdots-3u+5\end{pmatrix}$$
$$a_5 = \begin{pmatrix}2u^{13}-u^{12}+\cdots+6u-2\\-u^{13}+3u^{12}+\cdots-u+3\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$= 4u^{13}-3u^{12}+17u^{11}-10u^{10}+34u^9-22u^8+41u^7-30u^6+38u^5-25u^4+35u^3-9u^2+15u-4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{10}	$u^{14} - 7u^{13} + \cdots - 7u + 1$
c_2, c_7	$u^{14} - u^{13} + \cdots - u + 1$
c_3	$(u^7 + 3u^6 + 3u^5 - u^4 - 4u^3 - 2u^2 + 1)^2$
c_4, c_5	$(u^7 - 4u^5 - u^4 + 4u^3 + 2u^2 - 1)^2$
c_6, c_{11}	$u^{14} + u^{13} + \cdots + u + 1$
c_8	$(u^7 - 4u^5 + u^4 + 4u^3 - 2u^2 + 1)^2$
c_9, c_{12}	$u^{14} - 2u^{12} + 3u^{10} + u^9 + 3u^8 + 7u^7 - 12u^5 - 11u^4 + 6u^2 + 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$y^{14} + 3y^{13} + \cdots + 3y + 1$
c_2, c_6, c_7 c_{11}	$y^{14} + 7y^{13} + \cdots + 7y + 1$
c_3	$(y^7 - 3y^6 + 7y^5 - 13y^4 + 6y^3 - 2y^2 + 4y - 1)^2$
c_4, c_5, c_8	$(y^7 - 8y^6 + 24y^5 - 33y^4 + 20y^3 - 6y^2 + 4y - 1)^2$
c_9, c_{12}	$y^{14} - 4y^{13} + \cdots - 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.271534 + 0.962429I$ $a = -1.30581 + 4.62832I$ $b = -0.271534 + 0.962429I$	-9.79470	$-8.82578 + 0.I$
$u = 0.271534 - 0.962429I$ $a = -1.30581 - 4.62832I$ $b = -0.271534 - 0.962429I$	-9.79470	$-8.82578 + 0.I$
$u = 0.853858 + 0.520505I$ $a = 0.152789 - 0.093139I$ $b = -0.853858 + 0.520505I$	-0.400829	$3.59691 + 0.I$
$u = 0.853858 - 0.520505I$ $a = 0.152789 + 0.093139I$ $b = -0.853858 - 0.520505I$	-0.400829	$3.59691 + 0.I$
$u = -0.719129 + 0.694876I$ $a = -0.325329 - 0.314357I$ $b = 0.719129 + 0.694876I$	2.28642	$5.05433 + 0.I$
$u = -0.719129 - 0.694876I$ $a = -0.325329 + 0.314357I$ $b = 0.719129 - 0.694876I$	2.28642	$5.05433 + 0.I$
$u = -0.322303 + 0.789764I$ $a = 0.98249 + 2.38325I$ $b = 0.442964 + 1.085430I$	$-1.17508 + 2.13385I$	$2.42399 + 1.71411I$
$u = -0.322303 - 0.789764I$ $a = 0.98249 - 2.38325I$ $b = 0.442964 - 1.085430I$	$-1.17508 - 2.13385I$	$2.42399 - 1.71411I$
$u = -0.442964 + 1.085430I$ $a = 0.70254 + 1.73910I$ $b = 0.322303 + 0.789764I$	$-1.17508 - 2.13385I$	$2.42399 - 1.71411I$
$u = -0.442964 - 1.085430I$ $a = 0.70254 - 1.73910I$ $b = 0.322303 - 0.789764I$	$-1.17508 + 2.13385I$	$2.42399 + 1.71411I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.292820 + 0.656840I$ $a = -0.599653 + 0.817113I$ $b = -0.566184 + 1.270040I$	$-4.73997 - 4.82255I$	$-5.33672 + 5.53239I$
$u = 0.292820 - 0.656840I$ $a = -0.599653 - 0.817113I$ $b = -0.566184 - 1.270040I$	$-4.73997 + 4.82255I$	$-5.33672 - 5.53239I$
$u = 0.566184 + 1.270040I$ $a = -0.107024 + 0.513141I$ $b = -0.292820 + 0.656840I$	$-4.73997 + 4.82255I$	$-5.33672 - 5.53239I$
$u = 0.566184 - 1.270040I$ $a = -0.107024 - 0.513141I$ $b = -0.292820 - 0.656840I$	$-4.73997 - 4.82255I$	$-5.33672 + 5.53239I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_{10}	$(u^{13} - 7u^{12} + \cdots - 5u + 1)(u^{14} - 7u^{13} + \cdots - 7u + 1)$ $\cdot (u^{27} + 13u^{26} + \cdots + 3u - 1)(u^{104} + 46u^{103} + \cdots + 249939u + 14641)$
c_2, c_7	$(u^{13} - u^{12} + \cdots + u - 1)(u^{14} - u^{13} + \cdots - u + 1)(u^{27} - u^{26} + \cdots + 3u - 1)$ $\cdot (u^{104} + 2u^{103} + \cdots - 17u + 121)$
c_3	$((u^7 + 3u^6 + \cdots - 2u^2 + 1)^2)(u^{13} - 5u^{12} + \cdots - u - 1)$ $\cdot (u^{27} - 22u^{26} + \cdots + 24576u - 2560)(u^{52} + 10u^{51} + \cdots - 3u - 1)^2$
c_4, c_5	$((u^7 - 4u^5 - u^4 + 4u^3 + 2u^2 - 1)^2)(u^{13} + u^{12} + \cdots - u - 1)$ $\cdot (u^{27} + 12u^{26} + \cdots + 16u - 32)(u^{52} - 5u^{51} + \cdots + 7u + 1)^2$
c_6, c_{11}	$(u^{13} + u^{12} + \cdots + u + 1)(u^{14} + u^{13} + \cdots + u + 1)(u^{27} - u^{26} + \cdots + 3u - 1)$ $\cdot (u^{104} + 2u^{103} + \cdots - 17u + 121)$
c_8	$((u^7 - 4u^5 + u^4 + 4u^3 - 2u^2 + 1)^2)(u^{13} - u^{12} + \cdots - u + 1)$ $\cdot (u^{27} + 12u^{26} + \cdots + 16u - 32)(u^{52} - 5u^{51} + \cdots + 7u + 1)^2$
c_9, c_{12}	$(u^{13} - u^{12} + \cdots - u + 1)$ $\cdot (u^{14} - 2u^{12} + 3u^{10} + u^9 + 3u^8 + 7u^7 - 12u^5 - 11u^4 + 6u^2 + 4u + 1)$ $\cdot (u^{27} - u^{26} + \cdots - 3u - 1)(u^{104} + 13u^{103} + \cdots + 3452u + 283)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$(y^{13}+7y^{12}+\cdots+7y-1)(y^{14}+3y^{13}+\cdots+3y+1)$ $\cdot\,(y^{27}+5y^{26}+\cdots+87y-1)$ $\cdot\,(y^{104}+34y^{103}+\cdots+3659910927y+214358881)$
c_2, c_6, c_7 c_{11}	$(y^{13}+7y^{12}+\cdots-5y-1)(y^{14}+7y^{13}+\cdots+7y+1)$ $\cdot\,(y^{27}+13y^{26}+\cdots+3y-1)(y^{104}+46y^{103}+\cdots+249939y+14641)$
c_3	$(y^7-3y^6+7y^5-13y^4+6y^3-2y^2+4y-1)^2$ $\cdot\,(y^{13}-5y^{12}+\cdots+7y-1)(y^{27}-6y^{26}+\cdots-262144y-6553600)$ $\cdot\,(y^{52}-12y^{51}+\cdots-43y+1)^2$
c_4, c_5, c_8	$(y^7-8y^6+24y^5-33y^4+20y^3-6y^2+4y-1)^2$ $\cdot\,(y^{13}-15y^{12}+\cdots+7y-1)(y^{27}-24y^{26}+\cdots+12032y-1024)$ $\cdot\,(y^{52}-53y^{51}+\cdots-37y+1)^2$
c_9, c_{12}	$(y^{13}+y^{12}+\cdots-y-1)(y^{14}-4y^{13}+\cdots-4y+1)$ $\cdot\,(y^{27}+11y^{26}+\cdots-5y-1)(y^{104}-5y^{103}+\cdots+215340y+80089)$