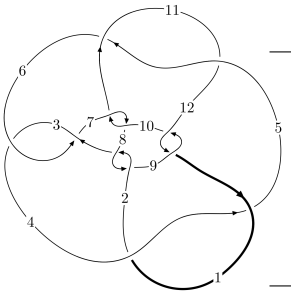
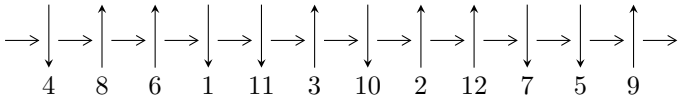
$12a_{1124}$ $(K12a_{1124})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 1.07302 \times 10^{16} u^{25} + 3.50154 \times 10^{16} u^{24} + \cdots + 1.30132 \times 10^{17} b + 3.86213 \times 10^{16},$$
$$- 3.50638 \times 10^{16} u^{25} - 1.89759 \times 10^{17} u^{24} + \cdots + 2.60265 \times 10^{17} a - 6.11748 \times 10^{17},\ u^{26} + u^{25} + \cdots - 14u +$$
$$I_2^u = \langle -6.92061 \times 10^{445} u^{111} - 1.24528 \times 10^{446} u^{110} + \cdots + 3.50085 \times 10^{446} b - 1.06405 \times 10^{447},$$
$$- 1.84028 \times 10^{450} u^{111} - 2.50015 \times 10^{451} u^{110} + \cdots + 2.82749 \times 10^{452} a - 3.75263 \times 10^{453},$$
$$u^{112} + 2u^{111} + \cdots + 645u + 123 \rangle$$
$$I_3^u = \langle -8.60666 \times 10^{28} u^{35} + 2.78547 \times 10^{29} u^{34} + \cdots + 1.04041 \times 10^{29} b - 4.59118 \times 10^{29},$$
$$- 2.41162 \times 10^{30} u^{35} + 3.63435 \times 10^{31} u^{34} + \cdots + 7.01535 \times 10^{30} a + 6.17284 \times 10^{31},\ u^{36} - 5u^{35} + \cdots + 3u +$$
$$I_4^u = \langle b + u - 1,\ a + 1,\ u^2 - u + 1 \rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 176 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.

$\boldsymbol{I_1^u = \langle 1.07\times 10^{16}u^{25}+3.50\times 10^{16}u^{24}+\cdots+1.30\times 10^{17}b+3.86\times 10^{16},\ -3.51\times 10^{16}u^{25}-1.90\times 10^{17}u^{24}+\cdots+2.60\times 10^{17}a-6.12\times 10^{17},\ u^{26}+u^{25}+\cdots-14u+3\rangle}$

(i) Arc colorings

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

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_{11} = \begin{pmatrix} 0.134724u^{25}+0.729100u^{24}+\cdots-4.54509u+2.35048 \\ -0.0824562u^{25}-0.269075u^{24}+\cdots+1.18090u-0.296785 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.223395u^{25}-0.761058u^{24}+\cdots+4.15107u-0.466322 \\ 0.363051u^{25}+0.387123u^{24}+\cdots+2.48399u-0.167850 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.517977u^{25}+0.957739u^{24}+\cdots-18.4642u+4.40381 \\ -0.483957u^{25}-0.564125u^{24}+\cdots-1.03960u-0.0706293 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.0522675u^{25}+0.460025u^{24}+\cdots-3.36419u+2.05370 \\ -0.0824562u^{25}-0.269075u^{24}+\cdots+1.18090u-0.296785 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.0944248u^{25}+0.107519u^{24}+\cdots-3.24925u+1.84810 \\ 0.0343026u^{25}-0.266952u^{24}+\cdots+4.94697u-1.34175 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.396266u^{25}+0.347145u^{24}+\cdots-2.41543u+0.113900 \\ -0.230814u^{25}-0.152987u^{24}+\cdots-2.28807u+0.465361 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.582885u^{25}+0.580597u^{24}+\cdots-0.964263u-0.133469 \\ -0.0819378u^{25}+0.0357949u^{24}+\cdots-0.741099u+0.0774950 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -1.42345u^{25}-1.35854u^{24}+\cdots-0.516330u+0.499768 \\ -0.00228858u^{25}-0.568183u^{24}+\cdots+8.02692u-1.74866 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $=$

$$-\frac{50626243171306417}{43377435355664855}u^{25}-\frac{28511993568223339}{17350974142265942}u^{24}+\cdots-\frac{1992721032938816786}{43377435355664855}u+\frac{762069217574817183}{86754870711329710}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$u^{26} - u^{25} + \cdots + 14u + 3$
c_2, c_8	$4(4u^{26} - 36u^{25} + \cdots - 360u + 52)$
c_3, c_6, c_9 c_{12}	$u^{26} + u^{25} + \cdots - 14u + 3$
c_5, c_{11}	$4(4u^{26} + 36u^{25} + \cdots + 360u + 52)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_6, c_7, c_9 c_{10}, c_{12}	$y^{26} + 9y^{25} + \cdots + 122y + 9$
c_2, c_5, c_8 c_{11}	$16(16y^{26} + 8y^{25} + \cdots + 19952y + 2704)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.171905 + 1.015710I$ $a = -1.50278 + 0.45928I$ $b = 0.635907 - 0.179675I$	$-3.39880 + 2.53537I$	$-6.23800 - 4.79646I$
$u = 0.171905 - 1.015710I$ $a = -1.50278 - 0.45928I$ $b = 0.635907 + 0.179675I$	$-3.39880 - 2.53537I$	$-6.23800 + 4.79646I$
$u = -0.099111 + 0.948892I$ $a = 3.05682 + 0.16034I$ $b = -0.099111 - 0.948892I$	$- 0.788870I$	$0. - 8.08674I$
$u = -0.099111 - 0.948892I$ $a = 3.05682 - 0.16034I$ $b = -0.099111 + 0.948892I$	$0.788870I$	$0. + 8.08674I$
$u = -0.971898 + 0.533345I$ $a = 0.169703 - 0.026789I$ $b = -0.185899 + 1.252460I$	$9.46539 + 0.44983I$	$9.20690 + 1.23580I$
$u = -0.971898 - 0.533345I$ $a = 0.169703 + 0.026789I$ $b = -0.185899 - 1.252460I$	$9.46539 - 0.44983I$	$9.20690 - 1.23580I$
$u = 0.444034 + 1.042450I$ $a = 1.32030 + 0.64016I$ $b = -1.37806 - 0.69705I$	$-5.26475 + 4.42469I$	$-3.07955 - 6.39392I$
$u = 0.444034 - 1.042450I$ $a = 1.32030 - 0.64016I$ $b = -1.37806 + 0.69705I$	$-5.26475 - 4.42469I$	$-3.07955 + 6.39392I$
$u = 0.262934 + 0.820958I$ $a = -2.45447 - 0.41027I$ $b = 1.310570 + 0.212605I$	$-3.02770 + 1.50091I$	$-0.38117 - 3.23499I$
$u = 0.262934 - 0.820958I$ $a = -2.45447 + 0.41027I$ $b = 1.310570 - 0.212605I$	$-3.02770 - 1.50091I$	$-0.38117 + 3.23499I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.185899+1.252460I$ $a=\ \ 0.863382-0.637518I$ $b=-0.971898+0.533345I$	$-9.46539-0.44983I$	$-9.20690-1.23580I$
$u=-0.185899-1.252460I$ $a=\ \ 0.863382+0.637518I$ $b=-0.971898-0.533345I$	$-9.46539+0.44983I$	$-9.20690+1.23580I$
$u=\ \ 0.462470+1.233400I$ $a=\ \ 1.380000+0.282313I$ $b=-0.568787+1.206040I$	$-4.58845+11.84040I$	$-2.55501-8.84767I$
$u=\ \ 0.462470-1.233400I$ $a=\ \ 1.380000-0.282313I$ $b=-0.568787-1.206040I$	$-4.58845-11.84040I$	$-2.55501+8.84767I$
$u=\ \ 1.310570+0.212605I$ $a=\ \ 0.222492+0.720110I$ $b=\ \ 0.262934+0.820958I$	$3.02770-1.50091I$	$0.38117+3.23499I$
$u=\ \ 1.310570-0.212605I$ $a=\ \ 0.222492-0.720110I$ $b=\ \ 0.262934-0.820958I$	$3.02770+1.50091I$	$0.38117-3.23499I$
$u=-0.568787+1.206040I$ $a=-1.61277-0.45045I$ $b=\ \ 0.462470+1.233400I$	$4.58845-11.84040I$	$2.55501+8.84767I$
$u=-0.568787-1.206040I$ $a=-1.61277+0.45045I$ $b=\ \ 0.462470-1.233400I$	$4.58845+11.84040I$	$2.55501-8.84767I$
$u=\ \ 0.635907+0.179675I$ $a=\ \ 0.28808-1.39043I$ $b=\ \ 0.171905-1.015710I$	$3.39880+2.53537I$	$6.23800-4.79646I$
$u=\ \ 0.635907-0.179675I$ $a=\ \ 0.28808+1.39043I$ $b=\ \ 0.171905+1.015710I$	$3.39880-2.53537I$	$6.23800+4.79646I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.74288+1.31638I$ $a=\ \ 1.371160+0.094012I$ $b=-0.74288-1.31638I$	$-19.4256I$	$0.+10.05625I$
$u=-0.74288-1.31638I$ $a=\ \ 1.371160-0.094012I$ $b=-0.74288+1.31638I$	$19.4256I$	$0.-10.05625I$
$u=-1.37806+0.69705I$ $a=-0.0055300+0.0592273I$ $b=\ \ 0.444034-1.042450I$	$5.26475+4.42469I$	$3.07955-6.39392I$
$u=-1.37806-0.69705I$ $a=-0.0055300-0.0592273I$ $b=\ \ 0.444034+1.042450I$	$5.26475-4.42469I$	$3.07955+6.39392I$
$u=\ \ 0.158808+0.320085I$ $a=\ \ 1.070290+0.730453I$ $b=\ \ 0.158808-0.320085I$	$0.894091I$	$0.-7.18165I$
$u=\ \ 0.158808-0.320085I$ $a=\ \ 1.070290-0.730453I$ $b=\ \ 0.158808+0.320085I$	$-0.894091I$	$0.+7.18165I$

II. $\boldsymbol{I_2^u = \langle -6.92 \times 10^{445} u^{111} - 1.25 \times 10^{446} u^{110} + \cdots + 3.50 \times 10^{446} b - 1.06 \times 10^{447},\ -1.84 \times 10^{450} u^{111} - 2.50 \times 10^{451} u^{110} + \cdots + 2.83 \times 10^{452} a - 3.75 \times 10^{453},\ u^{112} + 2u^{111} + \cdots + 645u + 123 \rangle}$

(i) Arc colorings

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

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_{11} = \begin{pmatrix} 0.00650853u^{111} + 0.0884229u^{110} + \cdots + 57.9641u + 13.2719 \\ 0.197684u^{111} + 0.355707u^{110} + \cdots + 57.5559u + 3.03942 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.101099u^{111} + 0.135504u^{110} + \cdots - 53.2054u - 12.7494 \\ -0.115566u^{111} - 0.291705u^{110} + \cdots - 127.776u - 20.8814 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.126207u^{111} - 0.259103u^{110} + \cdots - 76.2442u - 9.47282 \\ -0.294134u^{111} - 0.552574u^{110} + \cdots - 115.549u - 10.3189 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.204192u^{111} + 0.444130u^{110} + \cdots + 115.520u + 16.3114 \\ 0.197684u^{111} + 0.355707u^{110} + \cdots + 57.5559u + 3.03942 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.0135688u^{111} + 0.103593u^{110} + \cdots + 88.4866u + 17.2247 \\ 0.191731u^{111} + 0.377269u^{110} + \cdots + 96.3823u + 10.7157 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.0751224u^{111} + 0.104048u^{110} + \cdots - 57.5579u - 15.7583 \\ 0.0701494u^{111} + 0.0353507u^{110} + \cdots - 80.4689u - 20.2555 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0859122u^{111} + 0.169795u^{110} + \cdots - 5.67199u - 5.36633 \\ 0.0636436u^{111} + 0.0485745u^{110} + \cdots - 58.3981u - 15.2962 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.0189622u^{111} + 0.0594773u^{110} + \cdots - 27.3713u - 5.26515 \\ 0.0833554u^{111} + 0.159039u^{110} + \cdots + 40.9020u + 4.95769 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.332720u^{111} + 0.853504u^{110} + \cdots + 352.835u + 63.0911$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$u^{112} - 2u^{111} + \cdots - 645u + 123$
c_2, c_8	$81(9u^{56} + 18u^{55} + \cdots + 784u + 455)^2$
c_3, c_6, c_9 c_{12}	$u^{112} + 2u^{111} + \cdots + 645u + 123$
c_5, c_{11}	$81(9u^{56} - 18u^{55} + \cdots - 784u + 455)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_6, c_7, c_9 c_{10}, c_{12}	$y^{112} + 58y^{111} + \cdots + 478431y + 15129$
c_2, c_5, c_8 c_{11}	$6561(81y^{56} + 3366y^{55} + \cdots + 2666804y + 207025)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.884165 + 0.446342I$ $a = 0.105843 - 0.289868I$ $b = -0.528679 - 0.595350I$	$-1.47297 + 2.83228I$	0
$u = 0.884165 - 0.446342I$ $a = 0.105843 + 0.289868I$ $b = -0.528679 + 0.595350I$	$-1.47297 - 2.83228I$	0
$u = -0.759962 + 0.702616I$ $a = 0.087653 + 0.516964I$ $b = 0.47409 - 1.34478I$	$4.44565 - 1.93679I$	0
$u = -0.759962 - 0.702616I$ $a = 0.087653 - 0.516964I$ $b = 0.47409 + 1.34478I$	$4.44565 + 1.93679I$	0
$u = -0.083724 + 0.953094I$ $a = -1.50640 - 0.24056I$ $b = 0.632718 + 1.068020I$	$-1.14303 - 2.47132I$	0
$u = -0.083724 - 0.953094I$ $a = -1.50640 + 0.24056I$ $b = 0.632718 - 1.068020I$	$-1.14303 + 2.47132I$	0
$u = 0.953861 + 0.057825I$ $a = -0.0126888 - 0.0747161I$ $b = 0.110749 - 1.287230I$	$4.95021 + 2.36997I$	0
$u = 0.953861 - 0.057825I$ $a = -0.0126888 + 0.0747161I$ $b = 0.110749 + 1.287230I$	$4.95021 - 2.36997I$	0
$u = -0.603185 + 0.740197I$ $a = 1.223860 - 0.582290I$ $b = -0.631209 + 0.232434I$	$4.95021 - 2.36997I$	0
$u = -0.603185 - 0.740197I$ $a = 1.223860 + 0.582290I$ $b = -0.631209 - 0.232434I$	$4.95021 + 2.36997I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.813104+0.676150I$ $a=\ \ 0.326904-0.584359I$ $b=-0.651444+1.158900I$	$6.37753+0.27406I$	0
$u=-0.813104-0.676150I$ $a=\ \ 0.326904+0.584359I$ $b=-0.651444-1.158900I$	$6.37753-0.27406I$	0
$u=\ \ 0.292409+1.020680I$ $a=-1.58954-0.29311I$ $b=\ \ 1.51678+0.35730I$	$-3.79390+0.81802I$	0
$u=\ \ 0.292409-1.020680I$ $a=-1.58954+0.29311I$ $b=\ \ 1.51678-0.35730I$	$-3.79390-0.81802I$	0
$u=\ \ 0.505254+0.780652I$ $a=-0.068301-0.984122I$ $b=\ \ 0.113786-0.316141I$	$-1.14303+2.47132I$	0
$u=\ \ 0.505254-0.780652I$ $a=-0.068301+0.984122I$ $b=\ \ 0.113786+0.316141I$	$-1.14303-2.47132I$	0
$u=-0.592492+0.892812I$ $a=-1.53226+0.66927I$ $b=\ \ 0.877171+0.152656I$	$0.67163-7.34051I$	0
$u=-0.592492-0.892812I$ $a=-1.53226-0.66927I$ $b=\ \ 0.877171-0.152656I$	$0.67163+7.34051I$	0
$u=-0.844071+0.315454I$ $a=-0.206766-0.113144I$ $b=\ \ 0.228643-1.394900I$	$7.35971+6.55125I$	0
$u=-0.844071-0.315454I$ $a=-0.206766+0.113144I$ $b=\ \ 0.228643+1.394900I$	$7.35971-6.55125I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.877171 + 0.152656I$ $a = 0.588923 + 1.119460I$ $b = -0.592492 + 0.892812I$	$-0.67163 + 7.34051I$	0
$u = 0.877171 - 0.152656I$ $a = 0.588923 - 1.119460I$ $b = -0.592492 - 0.892812I$	$-0.67163 - 7.34051I$	0
$u = 0.867572 + 0.075937I$ $a = 0.500076 + 0.274476I$ $b = 0.191909 + 1.225350I$	$3.62547 - 2.48438I$	0
$u = 0.867572 - 0.075937I$ $a = 0.500076 - 0.274476I$ $b = 0.191909 - 1.225350I$	$3.62547 + 2.48438I$	0
$u = 0.382832 + 0.766047I$ $a = -1.97355 + 0.24792I$ $b = 0.025588 - 0.334898I$	$-3.62547 + 2.48438I$	0
$u = 0.382832 - 0.766047I$ $a = -1.97355 - 0.24792I$ $b = 0.025588 + 0.334898I$	$-3.62547 - 2.48438I$	0
$u = -0.301465 + 1.117770I$ $a = -1.140040 + 0.061054I$ $b = 0.542791 + 1.207620I$	$-1.47297 - 2.83228I$	0
$u = -0.301465 - 1.117770I$ $a = -1.140040 - 0.061054I$ $b = 0.542791 - 1.207620I$	$-1.47297 + 2.83228I$	0
$u = 1.122590 + 0.283421I$ $a = -0.068402 + 0.143669I$ $b = -0.485724 - 1.193430I$	$-5.88229I$	0
$u = 1.122590 - 0.283421I$ $a = -0.068402 - 0.143669I$ $b = -0.485724 + 1.193430I$	$5.88229I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.420227+1.088870I$ $a=\ \ 1.27405+1.05522I$ $b=-0.394596-1.264030I$	$3.52423+3.40169I$	0
$u=-0.420227-1.088870I$ $a=\ \ 1.27405-1.05522I$ $b=-0.394596+1.264030I$	$3.52423-3.40169I$	0
$u=-0.637995+0.990357I$ $a=-1.68006-0.10686I$ $b=\ \ 0.75424+1.21771I$	$3.52423-3.40169I$	0
$u=-0.637995-0.990357I$ $a=-1.68006+0.10686I$ $b=\ \ 0.75424-1.21771I$	$3.52423+3.40169I$	0
$u=-0.354197+1.136970I$ $a=-1.32575-1.08797I$ $b=\ \ 0.585869+1.043190I$	$4.44565-1.93679I$	0
$u=-0.354197-1.136970I$ $a=-1.32575+1.08797I$ $b=\ \ 0.585869-1.043190I$	$4.44565+1.93679I$	0
$u=-0.462140+1.099560I$ $a=\ \ 1.42581-0.30656I$ $b=-0.685238-1.173630I$	$-7.35971-6.55125I$	0
$u=-0.462140-1.099560I$ $a=\ \ 1.42581+0.30656I$ $b=-0.685238+1.173630I$	$-7.35971+6.55125I$	0
$u=\ \ 0.585869+1.043190I$ $a=\ \ 0.473389+0.565880I$ $b=-0.354197+1.136970I$	$-4.44565+1.93679I$	0
$u=\ \ 0.585869-1.043190I$ $a=\ \ 0.473389-0.565880I$ $b=-0.354197-1.136970I$	$-4.44565-1.93679I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.194380+0.109868I$ $a=-0.052951+1.071920I$ $b=\ \ 0.387030+0.624603I$	$3.79390+0.81802I$	0
$u=-1.194380-0.109868I$ $a=-0.052951-1.071920I$ $b=\ \ 0.387030-0.624603I$	$3.79390-0.81802I$	0
$u=-0.528679+0.595350I$ $a=-0.894547+0.830069I$ $b=\ \ 0.884165-0.446342I$	$1.47297+2.83228I$	0
$u=-0.528679-0.595350I$ $a=-0.894547-0.830069I$ $b=\ \ 0.884165+0.446342I$	$1.47297-2.83228I$	0
$u=-0.714680+1.010660I$ $a=\ \ 1.71981-0.07841I$ $b=-0.907798-0.937963I$	$5.36521-6.00891I$	0
$u=-0.714680-1.010660I$ $a=\ \ 1.71981+0.07841I$ $b=-0.907798+0.937963I$	$5.36521+6.00891I$	0
$u=\ \ 0.191909+1.225350I$ $a=-1.139030+0.218604I$ $b=\ \ 0.867572+0.075937I$	$-3.62547+2.48438I$	0
$u=\ \ 0.191909-1.225350I$ $a=-1.139030-0.218604I$ $b=\ \ 0.867572-0.075937I$	$-3.62547-2.48438I$	0
$u=\ \ 0.632718+1.068020I$ $a=\ \ 0.918916-0.125547I$ $b=-0.083724+0.953094I$	$1.14303+2.47132I$	0
$u=\ \ 0.632718-1.068020I$ $a=\ \ 0.918916+0.125547I$ $b=-0.083724-0.953094I$	$1.14303-2.47132I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.387030 + 0.624603I$ $a = 2.72128 + 0.74896I$ $b = -1.194380 + 0.109868I$	$-3.79390 - 0.81802I$	$-3.81901 + 0.78619I$
$u = 0.387030 - 0.624603I$ $a = 2.72128 - 0.74896I$ $b = -1.194380 - 0.109868I$	$-3.79390 + 0.81802I$	$-3.81901 - 0.78619I$
$u = -0.491811 + 1.165850I$ $a = 1.255800 - 0.397372I$ $b = -1.327960 + 0.393036I$	$-3.01787 - 12.23000I$	0
$u = -0.491811 - 1.165850I$ $a = 1.255800 + 0.397372I$ $b = -1.327960 - 0.393036I$	$-3.01787 + 12.23000I$	0
$u = -0.150119 + 0.718590I$ $a = -0.060211 - 0.683044I$ $b = -0.03391 + 1.85674I$	$5.36521 - 6.00891I$	$-5.23529 + 9.39142I$
$u = -0.150119 - 0.718590I$ $a = -0.060211 + 0.683044I$ $b = -0.03391 - 1.85674I$	$5.36521 + 6.00891I$	$-5.23529 - 9.39142I$
$u = -0.136237 + 0.713086I$ $a = -0.687415 + 0.337443I$ $b = 0.32677 - 1.66929I$	$6.37753 - 0.27406I$	$-3.16621 + 0.74603I$
$u = -0.136237 - 0.713086I$ $a = -0.687415 - 0.337443I$ $b = 0.32677 + 1.66929I$	$6.37753 + 0.27406I$	$-3.16621 - 0.74603I$
$u = -0.485724 + 1.193430I$ $a = -1.054970 + 0.157438I$ $b = 1.122590 - 0.283421I$	$-5.88229I$	0
$u = -0.485724 - 1.193430I$ $a = -1.054970 - 0.157438I$ $b = 1.122590 + 0.283421I$	$5.88229I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.130420+0.698189I$ $a=\ 1.49124+0.08272I$ $b=-0.130420-0.698189I$	$0.727774I$	$0.-4.02174I$
$u=-0.130420-0.698189I$ $a=\ 1.49124-0.08272I$ $b=-0.130420+0.698189I$	$-0.727774I$	$0.+4.02174I$
$u=\ 0.110749+1.287230I$ $a=-1.008870+0.047046I$ $b=\ 0.953861-0.057825I$	$-4.95021+2.36997I$	0
$u=\ 0.110749-1.287230I$ $a=-1.008870-0.047046I$ $b=\ 0.953861+0.057825I$	$-4.95021-2.36997I$	0
$u=-0.907798+0.937963I$ $a=\ 1.089720-0.578246I$ $b=-0.714680-1.010660I$	$-5.36521-6.00891I$	0
$u=-0.907798-0.937963I$ $a=\ 1.089720+0.578246I$ $b=-0.714680+1.010660I$	$-5.36521+6.00891I$	0
$u=\ 0.542791+1.207620I$ $a=\ 1.106730-0.527739I$ $b=-0.301465+1.117770I$	$1.47297+2.83228I$	0
$u=\ 0.542791-1.207620I$ $a=\ 1.106730+0.527739I$ $b=-0.301465-1.117770I$	$1.47297-2.83228I$	0
$u=-0.394596+1.264030I$ $a=\ 0.721570-0.337747I$ $b=-0.420227-1.088870I$	$-3.52423+3.40169I$	0
$u=-0.394596-1.264030I$ $a=\ 0.721570+0.337747I$ $b=-0.420227+1.088870I$	$-3.52423-3.40169I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.631209+0.232434I$ $a=-0.471205+0.855786I$ $b=-0.603185+0.740197I$	$-4.95021+2.36997I$	$-5.26771-3.02633I$
$u=-0.631209-0.232434I$ $a=-0.471205-0.855786I$ $b=-0.603185-0.740197I$	$-4.95021-2.36997I$	$-5.26771+3.02633I$
$u=-0.651444+1.158900I$ $a=0.404280-0.334762I$ $b=-0.813104+0.676150I$	$-6.37753-0.27406I$	0
$u=-0.651444-1.158900I$ $a=0.404280+0.334762I$ $b=-0.813104-0.676150I$	$-6.37753+0.27406I$	0
$u=0.549092+1.229860I$ $a=-0.926899-0.049173I$ $b=0.456838-1.292490I$	$-0.67163+7.34051I$	0
$u=0.549092-1.229860I$ $a=-0.926899+0.049173I$ $b=0.456838+1.292490I$	$-0.67163-7.34051I$	0
$u=-0.685238+1.173630I$ $a=1.42898+0.26083I$ $b=-0.462140-1.099560I$	$7.35971-6.55125I$	0
$u=-0.685238-1.173630I$ $a=1.42898-0.26083I$ $b=-0.462140+1.099560I$	$7.35971+6.55125I$	0
$u=-0.594063+0.232845I$ $a=-1.27489+2.45384I$ $b=-0.331498+0.096194I$	$0.02827-8.03523I$	$1.79105+2.67120I$
$u=-0.594063-0.232845I$ $a=-1.27489-2.45384I$ $b=-0.331498-0.096194I$	$0.02827+8.03523I$	$1.79105-2.67120I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.456838 + 1.292490I$ $a = -1.242670 + 0.637725I$ $b = 0.549092 - 1.229860I$	$0.67163 + 7.34051I$	0
$u = 0.456838 - 1.292490I$ $a = -1.242670 - 0.637725I$ $b = 0.549092 + 1.229860I$	$0.67163 - 7.34051I$	0
$u = -1.327960 + 0.393036I$ $a = 0.0448775 - 0.0484661I$ $b = -0.491811 + 1.165850I$	$3.01787 + 12.23000I$	0
$u = -1.327960 - 0.393036I$ $a = 0.0448775 + 0.0484661I$ $b = -0.491811 - 1.165850I$	$3.01787 - 12.23000I$	0
$u = 0.228643 + 1.394900I$ $a = 0.841152 + 0.465681I$ $b = -0.844071 - 0.315454I$	$-7.35971 + 6.55125I$	0
$u = 0.228643 - 1.394900I$ $a = 0.841152 - 0.465681I$ $b = -0.844071 + 0.315454I$	$-7.35971 - 6.55125I$	0
$u = 0.47409 + 1.34478I$ $a = 0.641073 + 0.341067I$ $b = -0.759962 - 0.702616I$	$-4.44565 - 1.93679I$	0
$u = 0.47409 - 1.34478I$ $a = 0.641073 - 0.341067I$ $b = -0.759962 + 0.702616I$	$-4.44565 + 1.93679I$	0
$u = 0.60329 + 1.29581I$ $a = -1.204750 + 0.272854I$ $b = 0.62598 - 1.34876I$	$-0.02827 + 8.03523I$	0
$u = 0.60329 - 1.29581I$ $a = -1.204750 - 0.272854I$ $b = 0.62598 + 1.34876I$	$-0.02827 - 8.03523I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.67222 + 1.26173I$ $a = 1.46091 - 0.17983I$ $b = -0.82966 + 1.29407I$	$-3.01787 + 12.23000I$	0
$u = 0.67222 - 1.26173I$ $a = 1.46091 + 0.17983I$ $b = -0.82966 - 1.29407I$	$-3.01787 - 12.23000I$	0
$u = 0.75424 + 1.21771I$ $a = 1.152110 + 0.295229I$ $b = -0.637995 + 0.990357I$	$-3.52423 + 3.40169I$	0
$u = 0.75424 - 1.21771I$ $a = 1.152110 - 0.295229I$ $b = -0.637995 - 0.990357I$	$-3.52423 - 3.40169I$	0
$u = 0.62598 + 1.34876I$ $a = -1.149320 + 0.241382I$ $b = 0.60329 - 1.29581I$	$0.02827 + 8.03523I$	0
$u = 0.62598 - 1.34876I$ $a = -1.149320 - 0.241382I$ $b = 0.60329 + 1.29581I$	$0.02827 - 8.03523I$	0
$u = 0.407749 + 0.238643I$ $a = 0.256790 + 0.906420I$ $b = 0.407749 - 0.238643I$	$0.727774I$	$0. - 4.02174I$
$u = 0.407749 - 0.238643I$ $a = 0.256790 - 0.906420I$ $b = 0.407749 + 0.238643I$	$-0.727774I$	$0. + 4.02174I$
$u = -0.82966 + 1.29407I$ $a = -1.191020 + 0.005097I$ $b = 0.67222 + 1.26173I$	$3.01787 - 12.23000I$	0
$u = -0.82966 - 1.29407I$ $a = -1.191020 - 0.005097I$ $b = 0.67222 - 1.26173I$	$3.01787 + 12.23000I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.51678 + 0.35730I$ $a = 0.0623760 + 0.0218971I$ $b = 0.292409 + 1.020680I$	$3.79390 - 0.81802I$	0
$u = 1.51678 - 0.35730I$ $a = 0.0623760 - 0.0218971I$ $b = 0.292409 - 1.020680I$	$3.79390 + 0.81802I$	0
$u = -0.331498 + 0.096194I$ $a = 2.52818 - 4.96451I$ $b = -0.594063 + 0.232845I$	$-0.02827 + 8.03523I$	$-1.79105 - 2.67120I$
$u = -0.331498 - 0.096194I$ $a = 2.52818 + 4.96451I$ $b = -0.594063 - 0.232845I$	$-0.02827 - 8.03523I$	$-1.79105 + 2.67120I$
$u = 0.113786 + 0.316141I$ $a = -2.78656 + 2.28051I$ $b = 0.505254 - 0.780652I$	$1.14303 + 2.47132I$	$5.07801 - 4.40819I$
$u = 0.113786 - 0.316141I$ $a = -2.78656 - 2.28051I$ $b = 0.505254 + 0.780652I$	$1.14303 - 2.47132I$	$5.07801 + 4.40819I$
$u = 0.025588 + 0.334898I$ $a = -4.37473 - 2.36208I$ $b = 0.382832 - 0.766047I$	$3.62547 + 2.48438I$	$2.78870 - 4.88253I$
$u = 0.025588 - 0.334898I$ $a = -4.37473 + 2.36208I$ $b = 0.382832 + 0.766047I$	$3.62547 - 2.48438I$	$2.78870 + 4.88253I$
$u = 0.32677 + 1.66929I$ $a = -0.156499 + 0.567736I$ $b = -0.136237 - 0.713086I$	$-6.37753 - 0.27406I$	0
$u = 0.32677 - 1.66929I$ $a = -0.156499 - 0.567736I$ $b = -0.136237 + 0.713086I$	$-6.37753 + 0.27406I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.03391+1.85674I$ $a=\quad 0.123122-0.448880I$ $b=-0.150119+0.718590I$	$-5.36521+6.00891I$	0
$u=-0.03391-1.85674I$ $a=\quad 0.123122+0.448880I$ $b=-0.150119-0.718590I$	$-5.36521-6.00891I$	0

III.

$\boldsymbol{I_3^u = \langle -8.61\times 10^{28}u^{35}+2.79\times 10^{29}u^{34}+\cdots+1.04\times 10^{29}b-4.59\times 10^{29},\ -2.41\times 10^{30}u^{35}+3.63\times 10^{31}u^{34}+\cdots+7.02\times 10^{30}a+6.17\times 10^{31},\ u^{36}-5u^{35}+\cdots+3u+1\rangle}$

(i) Arc colorings

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

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_{11} = \begin{pmatrix} 0.343763u^{35} - 5.18057u^{34} + \cdots - 35.9438u - 8.79905 \\ 0.827236u^{35} - 2.67728u^{34} + \cdots + 19.1420u + 4.41284 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -1.97717u^{35} + 9.97818u^{34} + \cdots - 3.34201u - 1.59573 \\ -0.413987u^{35} + 1.85894u^{34} + \cdots - 1.49699u + 2.12131 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 2.20740u^{35} - 10.8526u^{34} + \cdots + 7.07737u + 0.548090 \\ -0.819026u^{35} + 4.38146u^{34} + \cdots - 5.54503u - 1.52076 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1.17100u^{35} - 7.85785u^{34} + \cdots - 16.8018u - 4.38620 \\ 0.827236u^{35} - 2.67728u^{34} + \cdots + 19.1420u + 4.41284 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.0970879u^{35} + 0.361789u^{34} + \cdots + 10.5563u + 4.13110 \\ 0.224099u^{35} - 1.20829u^{34} + \cdots - 1.18107u - 3.05633 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.258655u^{35} - 0.938548u^{34} + \cdots - 1.61611u + 0.482228 \\ 0.912207u^{35} - 4.34155u^{34} + \cdots + 9.55551u + 0.0449479 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.389085u^{35} - 1.76419u^{34} + \cdots - 2.58230u + 0.517489 \\ 0.956784u^{35} - 4.62078u^{34} + \cdots + 8.97936u + 0.253698 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.429002u^{35} + 2.36713u^{34} + \cdots + 1.32597u + 2.11288 \\ 1.00044u^{35} - 4.55551u^{34} + \cdots + 10.9307u - 0.129685 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0.329196u^{35} + 5.91364u^{34} + \cdots + 69.4025u + 25.0741$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6, c_7 c_{12}	$u^{36} - 5u^{35} + \cdots + 3u + 1$
c_2, c_5, c_8 c_{11}	$64(64u^{36} + 848u^{34} + \cdots + 672u^2 + 49)$
c_3, c_4, c_9 c_{10}	$u^{36} + 5u^{35} + \cdots - 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_6, c_7, c_9 c_{10}, c_{12}	$y^{36} + 15y^{35} + \cdots + 19y + 1$
c_2, c_5, c_8 c_{11}	$4096(64y^{18} + 848y^{17} + \cdots + 672y + 49)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.820724+0.538227I$ $a=-0.119632+0.530996I$ $b=\ 0.473731-1.205330I$	$7.14238+0.08114I$	$7.67724+1.23653I$
$u=-0.820724-0.538227I$ $a=-0.119632-0.530996I$ $b=\ 0.473731+1.205330I$	$7.14238-0.08114I$	$7.67724-1.23653I$
$u=\ 0.007256+0.938273I$ $a=-1.72452-0.81856I$ $b=\ 0.490597+0.946124I$	$-1.96250I$	$0.+2.64993I$
$u=\ 0.007256-0.938273I$ $a=-1.72452+0.81856I$ $b=\ 0.490597-0.946124I$	$1.96250I$	$0.-2.64993I$
$u=\ 0.490597+0.946124I$ $a=\ 1.019180+0.392510I$ $b=\ 0.007256+0.938273I$	$1.96250I$	$0.-2.64993I$
$u=\ 0.490597-0.946124I$ $a=\ 1.019180-0.392510I$ $b=\ 0.007256-0.938273I$	$-1.96250I$	$0.+2.64993I$
$u=-0.882211+0.276225I$ $a=\ 1.16611-1.41086I$ $b=\ 0.151685-0.669452I$	$4.45586+1.91497I$	$9.84662-2.65327I$
$u=-0.882211-0.276225I$ $a=\ 1.16611+1.41086I$ $b=\ 0.151685+0.669452I$	$4.45586-1.91497I$	$9.84662+2.65327I$
$u=\ 0.248696+1.128430I$ $a=-1.51618-0.02715I$ $b=\ 1.351170+0.185322I$	$-4.45586+1.91497I$	$-9.84662-2.65327I$
$u=\ 0.248696-1.128430I$ $a=-1.51618+0.02715I$ $b=\ 1.351170-0.185322I$	$-4.45586-1.91497I$	$-9.84662+2.65327I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.204788 + 0.730230I$ $a = -2.56341 - 0.14708I$ $b = 1.303390 + 0.199477I$	-2.85825	$-60.341175 + 0.10I$
$u = 0.204788 - 0.730230I$ $a = -2.56341 + 0.14708I$ $b = 1.303390 - 0.199477I$	-2.85825	$-60.341175 + 0.10I$
$u = -0.684168 + 1.040190I$ $a = -1.66598 - 0.01887I$ $b = 0.829883 + 0.933923I$	$5.78137 - 5.67225I$	$6.40075 + 0.51668I$
$u = -0.684168 - 1.040190I$ $a = -1.66598 + 0.01887I$ $b = 0.829883 - 0.933923I$	$5.78137 + 5.67225I$	$6.40075 - 0.51668I$
$u = 0.829883 + 0.933923I$ $a = 1.096860 + 0.567991I$ $b = -0.684168 + 1.040190I$	$-5.78137 + 5.67225I$	$-6.40075 - 0.51668I$
$u = 0.829883 - 0.933923I$ $a = 1.096860 - 0.567991I$ $b = -0.684168 - 1.040190I$	$-5.78137 - 5.67225I$	$-6.40075 + 0.51668I$
$u = 0.473731 + 1.205330I$ $a = 0.514258 + 0.262124I$ $b = -0.820724 - 0.538227I$	$-7.14238 + 0.08114I$	$-7.67724 + 1.23653I$
$u = 0.473731 - 1.205330I$ $a = 0.514258 - 0.262124I$ $b = -0.820724 + 0.538227I$	$-7.14238 - 0.08114I$	$-7.67724 - 1.23653I$
$u = 0.151685 + 0.669452I$ $a = 3.31404 - 0.12734I$ $b = -0.882211 - 0.276225I$	$-4.45586 + 1.91497I$	$-9.84662 - 2.65327I$
$u = 0.151685 - 0.669452I$ $a = 3.31404 + 0.12734I$ $b = -0.882211 + 0.276225I$	$-4.45586 - 1.91497I$	$-9.84662 + 2.65327I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.303390 + 0.199477I$ $a = 0.326461 + 0.647740I$ $b = 0.204788 + 0.730230I$	2.85825	0
$u = 1.303390 - 0.199477I$ $a = 0.326461 - 0.647740I$ $b = 0.204788 - 0.730230I$	2.85825	0
$u = -0.483298 + 0.463379I$ $a = 2.88275 - 2.52294I$ $b = -0.483298 - 0.463379I$	$-8.54028I$	$0. + 18.8239I$
$u = -0.483298 - 0.463379I$ $a = 2.88275 + 2.52294I$ $b = -0.483298 + 0.463379I$	$8.54028I$	$0. - 18.8239I$
$u = 1.351170 + 0.185322I$ $a = 0.174105 + 0.084819I$ $b = 0.248696 + 1.128430I$	$4.45586 - 1.91497I$	$9.84662 + 2.65327I$
$u = 1.351170 - 0.185322I$ $a = 0.174105 - 0.084819I$ $b = 0.248696 - 1.128430I$	$4.45586 + 1.91497I$	$9.84662 - 2.65327I$
$u = 0.29330 + 1.41288I$ $a = 0.283615 - 0.183655I$ $b = -0.499882 - 0.217642I$	$-7.14238 - 0.08114I$	$-7.67724 + 0.I$
$u = 0.29330 - 1.41288I$ $a = 0.283615 + 0.183655I$ $b = -0.499882 + 0.217642I$	$-7.14238 + 0.08114I$	$-7.67724 + 0.I$
$u = -0.499882 + 0.217642I$ $a = 0.536918 + 1.080480I$ $b = 0.29330 - 1.41288I$	$7.14238 - 0.08114I$	$7.67724 - 1.23653I$
$u = -0.499882 - 0.217642I$ $a = 0.536918 - 1.080480I$ $b = 0.29330 + 1.41288I$	$7.14238 + 0.08114I$	$7.67724 + 1.23653I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.55869 + 1.38511I$ $a = -1.074710 + 0.371738I$ $b = 0.55869 - 1.38511I$	$8.54028I$	$0. - 18.8239I$
$u = 0.55869 - 1.38511I$ $a = -1.074710 - 0.371738I$ $b = 0.55869 + 1.38511I$	$-8.54028I$	$0. + 18.8239I$
$u = -0.057431 + 0.371950I$ $a = 0.46776 - 2.06740I$ $b = 0.01453 + 1.70811I$	$5.78137 - 5.67225I$	$6.40075 + 0.51668I$
$u = -0.057431 - 0.371950I$ $a = 0.46776 + 2.06740I$ $b = 0.01453 - 1.70811I$	$5.78137 + 5.67225I$	$6.40075 - 0.51668I$
$u = 0.01453 + 1.70811I$ $a = -0.1176210 + 0.0610212I$ $b = -0.057431 + 0.371950I$	$-5.78137 + 5.67225I$	0
$u = 0.01453 - 1.70811I$ $a = -0.1176210 - 0.0610212I$ $b = -0.057431 - 0.371950I$	$-5.78137 - 5.67225I$	0

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -8u + 4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.500000 + 0.866025I$ $a = -1.00000$ $b = 0.500000 - 0.866025I$	$4.05977I$	$0. - 6.92820I$
$u = 0.500000 - 0.866025I$ $a = -1.00000$ $b = 0.500000 + 0.866025I$	$-4.05977I$	$0. + 6.92820I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_7	$(u^2-u+1)(u^{26}-u^{25}+\cdots+14u+3)(u^{36}-5u^{35}+\cdots+3u+1)$ $\cdot(u^{112}-2u^{111}+\cdots-645u+123)$
c_2, c_8	$20736u^2(4u^{26}-36u^{25}+\cdots-360u+52)$ $\cdot(64u^{36}+848u^{34}+\cdots+672u^2+49)$ $\cdot(9u^{56}+18u^{55}+\cdots+784u+455)^2$
c_3, c_9	$(u^2+u+1)(u^{26}+u^{25}+\cdots-14u+3)(u^{36}+5u^{35}+\cdots-3u+1)$ $\cdot(u^{112}+2u^{111}+\cdots+645u+123)$
c_4, c_{10}	$(u^2+u+1)(u^{26}-u^{25}+\cdots+14u+3)(u^{36}+5u^{35}+\cdots-3u+1)$ $\cdot(u^{112}-2u^{111}+\cdots-645u+123)$
c_5, c_{11}	$20736u^2(4u^{26}+36u^{25}+\cdots+360u+52)$ $\cdot(64u^{36}+848u^{34}+\cdots+672u^2+49)$ $\cdot(9u^{56}-18u^{55}+\cdots-784u+455)^2$
c_6, c_{12}	$(u^2-u+1)(u^{26}+u^{25}+\cdots-14u+3)(u^{36}-5u^{35}+\cdots+3u+1)$ $\cdot(u^{112}+2u^{111}+\cdots+645u+123)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_6, c_7, c_9 c_{10}, c_{12}	$(y^2+y+1)(y^{26}+9y^{25}+\cdots+122y+9)(y^{36}+15y^{35}+\cdots+19y+1)$ $\cdot(y^{112}+58y^{111}+\cdots+478431y+15129)$
c_2, c_5, c_8 c_{11}	$429981696y^2(64y^{18}+848y^{17}+\cdots+672y+49)^2$ $\cdot(16y^{26}+8y^{25}+\cdots+19952y+2704)$ $\cdot(81y^{56}+3366y^{55}+\cdots+2666804y+207025)^2$