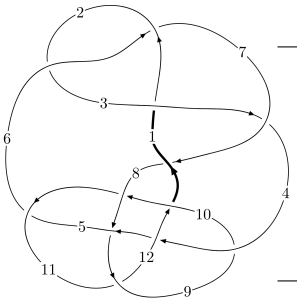
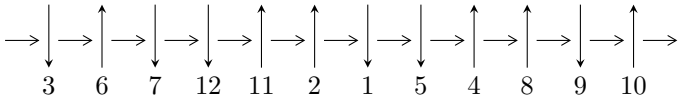
$12a_{0265}$ $(K12a_{0265})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 1.30744 \times 10^{71} u^{76} + 3.22892 \times 10^{71} u^{75} + \cdots + 3.31124 \times 10^{66} b + 7.87073 \times 10^{71},$$
$$- 2.93126 \times 10^{71} u^{76} - 5.90588 \times 10^{71} u^{75} + \cdots + 1.65562 \times 10^{66} a - 1.20168 \times 10^{72},\ u^{77} + u^{76} + \cdots + 2u +$$
$$I_2^u = \langle -6.34090 \times 10^{421} u^{101} - 2.36894 \times 10^{422} u^{100} + \cdots + 1.13936 \times 10^{422} b - 4.46492 \times 10^{422},$$
$$5.97619 \times 10^{421} u^{101} + 2.38844 \times 10^{422} u^{100} + \cdots + 1.13936 \times 10^{422} a + 8.88412 \times 10^{422},$$
$$u^{102} + 4u^{101} + \cdots + 15u + 2\rangle$$
$$I_3^u = \langle -u^{26} + u^{25} + \cdots + b + 4u,\ -4u^{26} + 4u^{25} + \cdots + a - 1,\ u^{27} - u^{26} + \cdots - 4u^2 + 1\rangle$$
$$I_4^u = \langle -u^3 - u^2 + b - 3u - 1,\ -u^3 - u^2 + a - 3u - 1,\ u^4 + u^3 + 3u^2 + u + 1\rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 210 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.

$\boldsymbol{I_1^u = \langle 1.31\times 10^{71}u^{76}+3.23\times 10^{71}u^{75}+\cdots+3.31\times 10^{66}b+7.87\times 10^{71},\ -2.93\times 10^{71}u^{76}-5.91\times 10^{71}u^{75}+\cdots+1.66\times 10^{66}a-1.20\times 10^{72},\ u^{77}+u^{76}+\cdots+2u+1\rangle}$

(i) Arc colorings

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

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

$$a_5 = \begin{pmatrix}1\\u^2\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}177049.u^{76}+356717.u^{75}+\cdots+2.31166\times 10^6 u+725817.\\-39484.9u^{76}-97513.7u^{75}+\cdots-691926.u-237697.\end{pmatrix}$$

$$a_1 = \begin{pmatrix}213753.u^{76}+298403.u^{75}+\cdots+1.52213\times 10^6 u+328591.\\-109347.u^{76}-197571.u^{75}+\cdots-1.20523\times 10^6 u-352541.\end{pmatrix}$$

$$a_9 = \begin{pmatrix}216534.u^{76}+454230.u^{75}+\cdots+3.00359\times 10^6 u+963514.\\-39484.9u^{76}-97513.7u^{75}+\cdots-691926.u-237697.\end{pmatrix}$$

$$a_8 = \begin{pmatrix}216534.u^{76}+454230.u^{75}+\cdots+3.00359\times 10^6 u+963514.\\-39484.9u^{76}-97513.7u^{75}+\cdots-691926.u-237697.\end{pmatrix}$$

$$a_7 = \begin{pmatrix}174969.u^{76}+449646.u^{75}+\cdots+3.26129\times 10^6 u+1.11170\times 10^6\\199191.u^{76}+247170.u^{75}+\cdots+1.13303\times 10^6 u+186587.\end{pmatrix}$$

$$a_3 = \begin{pmatrix}-228577.u^{76}-539101.u^{75}+\cdots-3.65918\times 10^6 u-1.25213\times 10^6\\-289691.u^{76}+11209.4u^{75}+\cdots+1.42905\times 10^6 u+1.31972\times 10^6\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}466449.u^{76}+774901.u^{75}+\cdots+4.50264\times 10^6 u+1.22728\times 10^6\\-143349.u^{76}-278927.u^{75}+\cdots-1.77528\times 10^6 u-546149.\end{pmatrix}$$

$$a_6 = \begin{pmatrix}-508259.u^{76}-260806.u^{75}+\cdots+67914.3u+1.04200\times 10^6\\322346.u^{76}+230196.u^{75}+\cdots+431531.u-430287.\end{pmatrix}$$

$$a_2 = \begin{pmatrix}-2.09543\times 10^6 u^{76}-2.05278\times 10^6 u^{75}+\cdots-8.27941\times 10^6 u+429977.\\728151.u^{76}+1.13395\times 10^6 u^{75}+\cdots+6.79368\times 10^6 u+1.68063\times 10^6\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= 928131.u^{76}-1.10298\times 10^6 u^{75}+\cdots-1.45398\times 10^7 u-8.87559\times 10^6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{77} + 37u^{76} + \cdots - 7u - 16$
c_2, c_6	$u^{77} - 5u^{76} + \cdots - 33u + 4$
c_3	$u^{77} + 5u^{76} + \cdots + 17874u + 1768$
c_4, c_8	$u^{77} + u^{76} + \cdots + 2u + 1$
c_5, c_9	$u^{77} + 3u^{75} + \cdots - 9u + 2$
c_7	$u^{77} - 25u^{76} + \cdots - 818285u + 37300$
c_{10}, c_{12}	$u^{77} - 12u^{76} + \cdots + 17u + 1$
c_{11}	$u^{77} - 42u^{76} + \cdots + 11u - 2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{77} + 9y^{76} + \cdots + 401y - 256$
c_2, c_6	$y^{77} + 37y^{76} + \cdots - 7y - 16$
c_3	$y^{77} - 19y^{76} + \cdots + 74410324y - 3125824$
c_4, c_8	$y^{77} + 33y^{76} + \cdots - 86y - 1$
c_5, c_9	$y^{77} + 6y^{76} + \cdots + 145y - 4$
c_7	$y^{77} + 17y^{76} + \cdots - 27321142975y - 1391290000$
c_{10}, c_{12}	$y^{77} - 50y^{76} + \cdots + 83y - 1$
c_{11}	$y^{77} + 60y^{75} + \cdots - 39y - 4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.267790 + 0.992695I$ $a = -0.431267 + 1.100390I$ $b = -0.420752 - 0.212748I$	$3.46656 + 2.98634I$	0
$u = 0.267790 - 0.992695I$ $a = -0.431267 - 1.100390I$ $b = -0.420752 + 0.212748I$	$3.46656 - 2.98634I$	0
$u = 0.237290 + 0.931626I$ $a = 0.199446 + 0.750390I$ $b = 0.577247 + 0.825765I$	$-0.063419 + 0.815170I$	0
$u = 0.237290 - 0.931626I$ $a = 0.199446 - 0.750390I$ $b = 0.577247 - 0.825765I$	$-0.063419 - 0.815170I$	0
$u = -0.300216 + 1.022690I$ $a = 0.507425 + 1.023370I$ $b = 0.414276 - 0.285176I$	$1.11208 - 7.98543I$	0
$u = -0.300216 - 1.022690I$ $a = 0.507425 - 1.023370I$ $b = 0.414276 + 0.285176I$	$1.11208 + 7.98543I$	0
$u = -0.188410 + 1.058390I$ $a = 0.270943 + 0.956122I$ $b = 0.259606 - 0.198061I$	$-0.984111 - 0.167610I$	0
$u = -0.188410 - 1.058390I$ $a = 0.270943 - 0.956122I$ $b = 0.259606 + 0.198061I$	$-0.984111 + 0.167610I$	0
$u = 0.242342 + 0.878864I$ $a = -0.29452 + 1.39873I$ $b = -0.551628 - 0.034407I$	$4.85147 + 0.97941I$	0
$u = 0.242342 - 0.878864I$ $a = -0.29452 - 1.39873I$ $b = -0.551628 + 0.034407I$	$4.85147 - 0.97941I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.199438+1.083720I$ $a=-0.317566+0.995974I$ $b=-0.580208+1.187420I$	$3.66736+0.81055I$	0
$u=-0.199438-1.083720I$ $a=-0.317566-0.995974I$ $b=-0.580208-1.187420I$	$3.66736-0.81055I$	0
$u=0.239909+1.079520I$ $a=0.376611+0.943149I$ $b=0.681597+1.143600I$	$1.84653-5.56859I$	0
$u=0.239909-1.079520I$ $a=0.376611-0.943149I$ $b=0.681597-1.143600I$	$1.84653+5.56859I$	0
$u=0.055475+1.130470I$ $a=0.102708+1.179470I$ $b=0.177608+1.391890I$	$-0.297314-0.869794I$	0
$u=0.055475-1.130470I$ $a=0.102708-1.179470I$ $b=0.177608-1.391890I$	$-0.297314+0.869794I$	0
$u=-0.136518+1.129770I$ $a=-0.252093+1.133130I$ $b=-0.43003+1.35913I$	$3.55022-1.05637I$	0
$u=-0.136518-1.129770I$ $a=-0.252093-1.133130I$ $b=-0.43003-1.35913I$	$3.55022+1.05637I$	0
$u=-0.244151+0.819410I$ $a=0.20371+1.60022I$ $b=0.649592+0.048331I$	$3.79661+3.71278I$	0
$u=-0.244151-0.819410I$ $a=0.20371-1.60022I$ $b=0.649592-0.048331I$	$3.79661-3.71278I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.123768 + 1.156590I$ $a = 0.247722 + 1.193980I$ $b = 0.40510 + 1.44972I$	$1.61740 + 5.84088I$	0
$u = 0.123768 - 1.156590I$ $a = 0.247722 - 1.193980I$ $b = 0.40510 - 1.44972I$	$1.61740 - 5.84088I$	0
$u = -0.471665 + 0.554278I$ $a = -0.100726 + 0.197032I$ $b = -0.574410 + 0.316752I$	$-0.31083 + 1.94641I$	0
$u = -0.471665 - 0.554278I$ $a = -0.100726 - 0.197032I$ $b = -0.574410 - 0.316752I$	$-0.31083 - 1.94641I$	0
$u = -0.240699 + 0.670164I$ $a = -0.38161 + 2.29089I$ $b = 0.900486 + 0.308186I$	$4.01950 - 0.35456I$	0
$u = -0.240699 - 0.670164I$ $a = -0.38161 - 2.29089I$ $b = 0.900486 - 0.308186I$	$4.01950 + 0.35456I$	0
$u = 0.234998 + 0.645618I$ $a = 0.58520 + 2.40806I$ $b = -0.932639 + 0.368794I$	$5.19817 - 4.45515I$	0
$u = 0.234998 - 0.645618I$ $a = 0.58520 - 2.40806I$ $b = -0.932639 - 0.368794I$	$5.19817 + 4.45515I$	0
$u = -0.083179 + 0.652582I$ $a = -0.87829 + 1.18464I$ $b = 0.609255 + 0.546894I$	$1.03201 + 1.52201I$	0
$u = -0.083179 - 0.652582I$ $a = -0.87829 - 1.18464I$ $b = 0.609255 - 0.546894I$	$1.03201 - 1.52201I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.229679 + 0.611677I$ $a = 0.91232 + 2.60024I$ $b = -0.982166 + 0.454289I$	$4.09903 - 6.69028I$	0
$u = 0.229679 - 0.611677I$ $a = 0.91232 - 2.60024I$ $b = -0.982166 - 0.454289I$	$4.09903 + 6.69028I$	0
$u = -0.231062 + 0.601022I$ $a = -1.00848 + 2.69638I$ $b = 1.005210 + 0.477155I$	$1.89130 + 11.72090I$	0
$u = -0.231062 - 0.601022I$ $a = -1.00848 - 2.69638I$ $b = 1.005210 - 0.477155I$	$1.89130 - 11.72090I$	0
$u = -0.205361 + 0.608972I$ $a = -1.10138 + 2.36975I$ $b = 0.928718 + 0.503276I$	$-0.48681 + 4.19549I$	0
$u = -0.205361 - 0.608972I$ $a = -1.10138 - 2.36975I$ $b = 0.928718 - 0.503276I$	$-0.48681 - 4.19549I$	0
$u = 0.125484 + 0.599783I$ $a = 1.40360 + 1.48105I$ $b = -0.740111 + 0.629556I$	$-2.06907 - 4.76842I$	0
$u = 0.125484 - 0.599783I$ $a = 1.40360 - 1.48105I$ $b = -0.740111 - 0.629556I$	$-2.06907 + 4.76842I$	0
$u = -0.916730 + 1.049410I$ $a = -0.459450 - 0.271004I$ $b = -1.137030 - 0.248373I$	$3.36045 - 3.51281I$	0
$u = -0.916730 - 1.049410I$ $a = -0.459450 + 0.271004I$ $b = -1.137030 + 0.248373I$	$3.36045 + 3.51281I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.066908 + 0.574195I$ $a = 1.44105 + 0.75476I$ $b = -0.599404 + 0.719514I$	$-1.31483 + 2.41918I$	0
$u = 0.066908 - 0.574195I$ $a = 1.44105 - 0.75476I$ $b = -0.599404 - 0.719514I$	$-1.31483 - 2.41918I$	0
$u = 0.94070 + 1.07555I$ $a = 0.430643 - 0.337969I$ $b = 1.129410 - 0.338602I$	$5.32767 - 1.72237I$	0
$u = 0.94070 - 1.07555I$ $a = 0.430643 + 0.337969I$ $b = 1.129410 + 0.338602I$	$5.32767 + 1.72237I$	0
$u = 0.028351 + 0.525345I$ $a = -0.721133 - 0.031678I$ $b = 0.342687 + 0.693104I$	$0.54233 + 1.43169I$	0
$u = 0.028351 - 0.525345I$ $a = -0.721133 + 0.031678I$ $b = 0.342687 - 0.693104I$	$0.54233 - 1.43169I$	0
$u = 0.96061 + 1.13614I$ $a = 0.391292 - 0.507155I$ $b = 1.155580 - 0.546700I$	$6.01308 - 4.66397I$	0
$u = 0.96061 - 1.13614I$ $a = 0.391292 + 0.507155I$ $b = 1.155580 + 0.546700I$	$6.01308 + 4.66397I$	0
$u = -1.02412 + 1.08661I$ $a = -0.264678 - 0.351646I$ $b = -0.941090 - 0.429042I$	$0.04793 + 3.81894I$	0
$u = -1.02412 - 1.08661I$ $a = -0.264678 + 0.351646I$ $b = -0.941090 + 0.429042I$	$0.04793 - 3.81894I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.96343+1.15675I$ $a=-0.372594-0.586734I$ $b=-1.169160-0.640918I$	$4.66198+9.87576I$	0
$u=-0.96343-1.15675I$ $a=-0.372594+0.586734I$ $b=-1.169160+0.640918I$	$4.66198-9.87576I$	0
$u=-0.009239+0.482143I$ $a=-0.895002-0.903005I$ $b=\ \ 0.237807+0.914606I$	$-0.46807+2.55260I$	0
$u=-0.009239-0.482143I$ $a=-0.895002+0.903005I$ $b=\ \ 0.237807-0.914606I$	$-0.46807-2.55260I$	0
$u=-1.52052$ $a=-0.104427$ $b=-0.531994$	-3.29769	0
$u=\ \ 0.015503+0.476991I$ $a=\ \ 1.03707-1.14519I$ $b=-0.244321+0.978648I$	$-2.75638-7.27121I$	0
$u=\ \ 0.015503-0.476991I$ $a=\ \ 1.03707+1.14519I$ $b=-0.244321-0.978648I$	$-2.75638+7.27121I$	0
$u=\ \ 0.005166+0.470849I$ $a=\ \ 0.507758-1.215430I$ $b=-0.124407+0.955062I$	$-4.44293+0.17554I$	0
$u=\ \ 0.005166-0.470849I$ $a=\ \ 0.507758+1.215430I$ $b=-0.124407-0.955062I$	$-4.44293-0.17554I$	0
$u=-0.97518+1.20606I$ $a=-0.165001-0.972043I$ $b=-1.12107-1.11471I$	$3.46864+7.75820I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.97518-1.20606I$ $a=-0.165001+0.972043I$ $b=-1.12107+1.11471I$	$3.46864-7.75820I$	0
$u=\ \ 0.97636+1.20780I$ $a=\ \ 0.133635-1.024500I$ $b=\ \ 1.11204-1.17668I$	$4.41037-12.87510I$	0
$u=\ \ 0.97636-1.20780I$ $a=\ \ 0.133635+1.024500I$ $b=\ \ 1.11204+1.17668I$	$4.41037+12.87510I$	0
$u=-0.97855+1.20740I$ $a=-0.021538-1.054220I$ $b=-1.01964-1.24813I$	$-1.99941+12.83550I$	0
$u=-0.97855-1.20740I$ $a=-0.021538+1.054220I$ $b=-1.01964+1.24813I$	$-1.99941-12.83550I$	0
$u=\ \ 0.97871+1.20856I$ $a=\ \ 0.068337-1.097820I$ $b=\ \ 1.07950-1.27011I$	$2.9307-15.5594I$	0
$u=\ \ 0.97871-1.20856I$ $a=\ \ 0.068337+1.097820I$ $b=\ \ 1.07950+1.27011I$	$2.9307+15.5594I$	0
$u=-0.97948+1.20857I$ $a=-0.051848-1.123910I$ $b=-1.07421-1.30036I$	$0.6392+20.7593I$	0
$u=-0.97948-1.20857I$ $a=-0.051848+1.123910I$ $b=-1.07421+1.30036I$	$0.6392-20.7593I$	0
$u=\ \ 0.98077+1.21178I$ $a=-0.079041-0.823030I$ $b=\ \ 0.830388-1.080080I$	$-4.60835-12.16330I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.98077 - 1.21178I$ $a = -0.079041 + 0.823030I$ $b = 0.830388 + 1.080080I$	$-4.60835 + 12.16330I$	0
$u = -0.98735 + 1.20932I$ $a = 0.009211 - 0.754065I$ $b = -0.862376 - 0.984364I$	$-1.04934 + 8.15459I$	0
$u = -0.98735 - 1.20932I$ $a = 0.009211 + 0.754065I$ $b = -0.862376 + 0.984364I$	$-1.04934 - 8.15459I$	0
$u = 0.99244 + 1.21885I$ $a = -0.071700 - 0.678304I$ $b = 0.767518 - 0.944950I$	$-4.32252 - 3.84533I$	0
$u = 0.99244 - 1.21885I$ $a = -0.071700 + 0.678304I$ $b = 0.767518 + 0.944950I$	$-4.32252 + 3.84533I$	0
$u = 1.69278 + 0.20454I$ $a = 0.0914533 - 0.0154027I$ $b = 0.507034 - 0.033144I$	$-6.89489 - 4.51892I$	0
$u = 1.69278 - 0.20454I$ $a = 0.0914533 + 0.0154027I$ $b = 0.507034 + 0.033144I$	$-6.89489 + 4.51892I$	0

II. $\boldsymbol{I_2^u = \langle -6.34\times 10^{421}u^{101} - 2.37\times 10^{422}u^{100} + \cdots + 1.14\times 10^{422}b - 4.46\times 10^{422},\ 5.98\times 10^{421}u^{101} + 2.39\times 10^{422}u^{100} + \cdots + 1.14\times 10^{422}a + 8.88\times 10^{422},\ u^{102} + 4u^{101} + \cdots + 15u + 2\rangle}$

(i) Arc colorings

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

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

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.524521u^{101} - 2.09630u^{100} + \cdots - 21.0688u - 7.79745 \\ 0.556531u^{101} + 2.07918u^{100} + \cdots + 11.3560u + 3.91879 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.547866u^{101} - 2.18899u^{100} + \cdots - 21.1140u - 8.10568 \\ 0.585402u^{101} + 2.18997u^{100} + \cdots + 13.3496u + 4.20758 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -1.08105u^{101} - 4.17548u^{100} + \cdots - 32.4248u - 11.7162 \\ 0.556531u^{101} + 2.07918u^{100} + \cdots + 11.3560u + 3.91879 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -\frac{1}{2}u^{101} - 2u^{100} + \cdots - 21u - \frac{15}{2} \\ 0.581051u^{101} + 2.17548u^{100} + \cdots + 12.4248u + 4.21624 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1.39908u^{101} + 5.28370u^{100} + \cdots + 33.0663u + 11.4758 \\ 0.0145918u^{101} + 0.0567883u^{100} + \cdots - 3.53157u + 0.00354395 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.924593u^{101} - 3.62496u^{100} + \cdots - 30.3174u - 7.66250 \\ 0.0408050u^{101} + 0.111099u^{100} + \cdots - 0.964190u - 0.142013 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -1.71951u^{101} - 6.57952u^{100} + \cdots - 48.3027u - 16.8410 \\ 0.586241u^{101} + 2.20056u^{100} + \cdots + 15.8391u + 4.52771 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 2.71136u^{101} + 10.1758u^{100} + \cdots + 82.6432u + 21.9005 \\ 0.304172u^{101} + 1.16670u^{100} + \cdots + 9.11683u + 3.50125 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -1.34710u^{101} - 5.30690u^{100} + \cdots - 37.6711u - 15.6054 \\ 1.07319u^{101} + 3.96909u^{100} + \cdots + 28.8646u + 7.58637 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.0351821u^{101} + 0.0568820u^{100} + \cdots + 29.4565u - 5.38180$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{51}+24u^{50}+\cdots-4u-1)^2$
c_2, c_6	$(u^{51}+2u^{50}+\cdots+4u+1)^2$
c_3	$(u^{51}-2u^{50}+\cdots-139u+26)^2$
c_4, c_8	$u^{102}+4u^{101}+\cdots+15u+2$
c_5, c_9	$u^{102}+2u^{101}+\cdots+2916u+376$
c_7	$(u^{51}+15u^{50}+\cdots+1000u+64)^2$
c_{10}, c_{12}	$u^{102}+5u^{101}+\cdots+10593u+956$
c_{11}	$(u^{51}+25u^{50}+\cdots-10u-4)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{51}+8y^{50}+\cdots-32y-1)^2$
c_2, c_6	$(y^{51}+24y^{50}+\cdots-4y-1)^2$
c_3	$(y^{51}-8y^{50}+\cdots+15733y-676)^2$
c_4, c_8	$y^{102}-20y^{101}+\cdots-57y+4$
c_5, c_9	$y^{102}+96y^{100}+\cdots+16598704y+141376$
c_7	$(y^{51}+19y^{50}+\cdots-5184y-4096)^2$
c_{10}, c_{12}	$y^{102}+23y^{101}+\cdots+48008215y+913936$
c_{11}	$(y^{51}-5y^{50}+\cdots+428y-16)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.543911 + 0.836758I$ $a = 0.117663 + 0.631387I$ $b = -1.40715 + 0.83802I$	$0.71471 - 4.40922I$	0
$u = 0.543911 - 0.836758I$ $a = 0.117663 - 0.631387I$ $b = -1.40715 - 0.83802I$	$0.71471 + 4.40922I$	0
$u = 0.508128 + 0.885564I$ $a = 0.718931 + 0.401841I$ $b = -0.205409 + 1.199330I$	$-2.99458 - 7.31406I$	0
$u = 0.508128 - 0.885564I$ $a = 0.718931 - 0.401841I$ $b = -0.205409 - 1.199330I$	$-2.99458 + 7.31406I$	0
$u = -0.819608 + 0.534290I$ $a = -0.468530 - 1.081200I$ $b = -1.13192 - 1.23128I$	$-3.57874 + 4.50800I$	0
$u = -0.819608 - 0.534290I$ $a = -0.468530 + 1.081200I$ $b = -1.13192 + 1.23128I$	$-3.57874 - 4.50800I$	0
$u = -0.504708 + 0.828571I$ $a = -0.033334 + 0.495798I$ $b = 1.51079 + 0.69174I$	$-0.933655 - 0.114205I$	0
$u = -0.504708 - 0.828571I$ $a = -0.033334 - 0.495798I$ $b = 1.51079 - 0.69174I$	$-0.933655 + 0.114205I$	0
$u = -0.767514 + 0.585787I$ $a = -0.509453 - 1.224380I$ $b = -1.21496 - 1.38047I$	$-0.86229 + 12.39040I$	0
$u = -0.767514 - 0.585787I$ $a = -0.509453 + 1.224380I$ $b = -1.21496 + 1.38047I$	$-0.86229 - 12.39040I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.578997 + 0.874717I$ $a = 0.128315 + 0.847207I$ $b = -1.38670 + 1.09740I$	$0.11206 - 6.09970I$	0
$u = 0.578997 - 0.874717I$ $a = 0.128315 - 0.847207I$ $b = -1.38670 - 1.09740I$	$0.11206 + 6.09970I$	0
$u = 0.759999 + 0.558112I$ $a = 0.549826 - 1.183120I$ $b = 1.24852 - 1.32345I$	$1.40035 - 7.17372I$	$0. + 9.10187I$
$u = 0.759999 - 0.558112I$ $a = 0.549826 + 1.183120I$ $b = 1.24852 + 1.32345I$	$1.40035 + 7.17372I$	$0. - 9.10187I$
$u = 0.308294 + 0.889111I$ $a = 0.506569 + 0.044497I$ $b = -0.085886 + 1.085100I$	$-4.48802 + 0.11163I$	$-8.96076 + 0.I$
$u = 0.308294 - 0.889111I$ $a = 0.506569 - 0.044497I$ $b = -0.085886 - 1.085100I$	$-4.48802 - 0.11163I$	$-8.96076 + 0.I$
$u = -0.583693 + 0.888913I$ $a = -0.106865 + 0.912865I$ $b = 1.41554 + 1.17786I$	$-2.00550 + 10.91820I$	0
$u = -0.583693 - 0.888913I$ $a = -0.106865 - 0.912865I$ $b = 1.41554 - 1.17786I$	$-2.00550 - 10.91820I$	0
$u = 0.944534 + 0.491700I$ $a = 1.36305 + 1.19440I$ $b = -0.081185 + 0.753822I$	$-3.97661 - 3.74895I$	0
$u = 0.944534 - 0.491700I$ $a = 1.36305 - 1.19440I$ $b = -0.081185 - 0.753822I$	$-3.97661 + 3.74895I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.611253+0.874206I$ $a=-0.254015+0.923303I$ $b=\ \ 1.22771+1.19989I$	$-3.97661+3.74895I$	0
$u=-0.611253-0.874206I$ $a=-0.254015-0.923303I$ $b=\ \ 1.22771-1.19989I$	$-3.97661-3.74895I$	0
$u=-0.838110+0.385745I$ $a=-1.62040+0.84063I$ $b=\ \ 0.019928+0.419465I$	$-4.41316+4.70182I$	$-9.28883-5.08326I$
$u=-0.838110-0.385745I$ $a=-1.62040-0.84063I$ $b=\ \ 0.019928-0.419465I$	$-4.41316-4.70182I$	$-9.28883+5.08326I$
$u=\ \ 0.655738+0.874329I$ $a=\ \ 0.482098+0.974345I$ $b=-0.90500+1.32060I$	$-4.41316-4.70182I$	0
$u=\ \ 0.655738-0.874329I$ $a=\ \ 0.482098-0.974345I$ $b=-0.90500-1.32060I$	$-4.41316+4.70182I$	0
$u=\ \ 0.664362+0.877603I$ $a=\ \ 0.603363+0.968185I$ $b=-0.72887+1.39102I$	$-2.94615+2.41292I$	0
$u=\ \ 0.664362-0.877603I$ $a=\ \ 0.603363-0.968185I$ $b=-0.72887-1.39102I$	$-2.94615-2.41292I$	0
$u=-0.667775+0.877732I$ $a=-0.575722+0.905547I$ $b=\ \ 0.70769+1.28360I$	$-0.80279+2.13782I$	0
$u=-0.667775-0.877732I$ $a=-0.575722-0.905547I$ $b=\ \ 0.70769-1.28360I$	$-0.80279-2.13782I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.503184+0.998319I$ $a=-0.497086+0.435606I$ $b=\ \ 0.251845+1.083850I$	$-0.68241+2.75592I$	0
$u=-0.503184-0.998319I$ $a=-0.497086-0.435606I$ $b=\ \ 0.251845-1.083850I$	$-0.68241-2.75592I$	0
$u=-0.988830+0.544741I$ $a=-1.21665+1.33681I$ $b=\ \ 0.138189+0.889503I$	$0.11206+6.09970I$	0
$u=-0.988830-0.544741I$ $a=-1.21665-1.33681I$ $b=\ \ 0.138189-0.889503I$	$0.11206-6.09970I$	0
$u=\ \ 1.006250+0.521050I$ $a=\ \ 1.29034+1.38606I$ $b=-0.077021+0.902938I$	$-2.00550-10.91820I$	0
$u=\ \ 1.006250-0.521050I$ $a=\ \ 1.29034-1.38606I$ $b=-0.077021-0.902938I$	$-2.00550+10.91820I$	0
$u=\ \ 0.713392+0.461416I$ $a=\ \ 0.731803-1.062980I$ $b=\ \ 1.41295-1.14632I$	$2.79995-4.40530I$	$-1.85664+11.89899I$
$u=\ \ 0.713392-0.461416I$ $a=\ \ 0.731803+1.062980I$ $b=\ \ 1.41295+1.14632I$	$2.79995+4.40530I$	$-1.85664-11.89899I$
$u=-0.440268+0.724211I$ $a=-0.205437+0.057724I$ $b=\ \ 1.373050+0.237187I$	$-1.98882+6.12259I$	$0.32445-9.83526I$
$u=-0.440268-0.724211I$ $a=-0.205437-0.057724I$ $b=\ \ 1.373050-0.237187I$	$-1.98882-6.12259I$	$0.32445+9.83526I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.783884+0.301519I$ $a=-1.82815+0.64760I$ $b=-0.052502+0.197445I$	$-2.94615-2.41292I$	$-5.85975+2.81162I$
$u=-0.783884-0.301519I$ $a=-1.82815-0.64760I$ $b=-0.052502-0.197445I$	$-2.94615+2.41292I$	$-5.85975-2.81162I$
$u=-0.978723+0.633481I$ $a=-0.96396+1.30760I$ $b=0.300031+0.936915I$	$0.71471+4.40922I$	0
$u=-0.978723-0.633481I$ $a=-0.96396-1.30760I$ $b=0.300031-0.936915I$	$0.71471-4.40922I$	0
$u=-0.750448+0.912373I$ $a=-0.490257+0.851972I$ $b=0.574944+1.026750I$	$-0.37303+2.91970I$	0
$u=-0.750448-0.912373I$ $a=-0.490257-0.851972I$ $b=0.574944-1.026750I$	$-0.37303-2.91970I$	0
$u=0.734411+0.343567I$ $a=1.68997+0.52774I$ $b=-0.094953+0.172627I$	$-0.80279-2.13782I$	$-2.33645+0.81055I$
$u=0.734411-0.343567I$ $a=1.68997-0.52774I$ $b=-0.094953-0.172627I$	$-0.80279+2.13782I$	$-2.33645-0.81055I$
$u=1.107430+0.474599I$ $a=0.056779-0.687226I$ $b=0.571965-0.868277I$	$-6.50257-4.09181I$	0
$u=1.107430-0.474599I$ $a=0.056779+0.687226I$ $b=0.571965+0.868277I$	$-6.50257+4.09181I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.688713+0.384093I$ $a=-0.865622-0.950501I$ $b=-1.52542-1.00016I$	$1.79878-0.77129I$	$-5.60286-8.41847I$
$u=-0.688713-0.384093I$ $a=-0.865622+0.950501I$ $b=-1.52542+1.00016I$	$1.79878+0.77129I$	$-5.60286+8.41847I$
$u=1.007920+0.684334I$ $a=0.82037+1.37323I$ $b=-0.363432+1.005740I$	$-0.933655+0.114205I$	0
$u=1.007920-0.684334I$ $a=0.82037-1.37323I$ $b=-0.363432-1.005740I$	$-0.933655-0.114205I$	0
$u=0.127528+0.728266I$ $a=-0.452419-0.940221I$ $b=-1.87592-0.69195I$	$2.50493-11.29680I$	$5.67648+10.43402I$
$u=0.127528-0.728266I$ $a=-0.452419+0.940221I$ $b=-1.87592+0.69195I$	$2.50493+11.29680I$	$5.67648-10.43402I$
$u=-1.213180+0.372173I$ $a=-0.012938-0.458263I$ $b=-0.472745-0.599319I$	-3.13067	0
$u=-1.213180-0.372173I$ $a=-0.012938+0.458263I$ $b=-0.472745+0.599319I$	-3.13067	0
$u=0.965571+0.828742I$ $a=0.510970+1.199320I$ $b=-0.525646+0.986946I$	$-1.98882-6.12259I$	0
$u=0.965571-0.828742I$ $a=0.510970-1.199320I$ $b=-0.525646-0.986946I$	$-1.98882+6.12259I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.116348+0.703898I$ $a=\ 0.406844-1.021210I$ $b=\ 1.81744-0.75017I$	$4.55793+6.21102I$	$9.11454-6.33203I$
$u=-0.116348-0.703898I$ $a=\ 0.406844+1.021210I$ $b=\ 1.81744+0.75017I$	$4.55793-6.21102I$	$9.11454+6.33203I$
$u=\ 0.527476+0.478971I$ $a=\ 1.142170-0.040811I$ $b=-0.647350-0.009667I$	$-0.37303-2.91970I$	$1.95927+0.79655I$
$u=\ 0.527476-0.478971I$ $a=\ 1.142170+0.040811I$ $b=-0.647350+0.009667I$	$-0.37303+2.91970I$	$1.95927-0.79655I$
$u=\ 0.181333+0.665675I$ $a=-0.151869-0.915760I$ $b=-1.63089-0.60949I$	$-0.19423-4.09608I$	$2.11668+6.01964I$
$u=\ 0.181333-0.665675I$ $a=-0.151869+0.915760I$ $b=-1.63089+0.60949I$	$-0.19423+4.09608I$	$2.11668-6.01964I$
$u=-0.066734+0.644109I$ $a=\ 0.364465-1.283810I$ $b=\ 1.70994-0.95105I$	$5.26187+3.68883I$	$10.94093-6.31491I$
$u=-0.066734-0.644109I$ $a=\ 0.364465+1.283810I$ $b=\ 1.70994+0.95105I$	$5.26187-3.68883I$	$10.94093+6.31491I$
$u=\ 1.278070+0.507990I$ $a=-0.185665-0.545799I$ $b=\ 0.246078-0.751833I$	$-6.50257+4.09181I$	0
$u=\ 1.278070-0.507990I$ $a=-0.185665+0.545799I$ $b=\ 0.246078+0.751833I$	$-6.50257-4.09181I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.033793 + 0.612034I$ $a = -0.37729 - 1.43867I$ $b = -1.66901 - 1.07226I$	$3.85162 + 1.33085I$	$9.33343 + 1.20365I$
$u = 0.033793 - 0.612034I$ $a = -0.37729 + 1.43867I$ $b = -1.66901 + 1.07226I$	$3.85162 - 1.33085I$	$9.33343 - 1.20365I$
$u = -1.09807 + 1.09220I$ $a = 0.038512 + 1.080370I$ $b = 0.677631 + 0.870035I$	$-0.19423 + 4.09608I$	0
$u = -1.09807 - 1.09220I$ $a = 0.038512 - 1.080370I$ $b = 0.677631 - 0.870035I$	$-0.19423 - 4.09608I$	0
$u = -0.436888 + 0.052039I$ $a = -2.74913 - 0.02705I$ $b = 0.015896 - 0.643790I$	$-2.99458 + 7.31406I$	$-5.67566 - 6.83311I$
$u = -0.436888 - 0.052039I$ $a = -2.74913 + 0.02705I$ $b = 0.015896 + 0.643790I$	$-2.99458 - 7.31406I$	$-5.67566 + 6.83311I$
$u = -1.19020 + 1.08400I$ $a = 0.198941 + 1.170700I$ $b = 0.785716 + 0.860699I$	$2.50493 + 11.29680I$	0
$u = -1.19020 - 1.08400I$ $a = 0.198941 - 1.170700I$ $b = 0.785716 - 0.860699I$	$2.50493 - 11.29680I$	0
$u = 0.346330 + 0.150517I$ $a = 2.71989 - 0.75542I$ $b = -0.211981 - 0.698216I$	$-0.68241 - 2.75592I$	$-1.99878 + 3.60983I$
$u = 0.346330 - 0.150517I$ $a = 2.71989 + 0.75542I$ $b = -0.211981 + 0.698216I$	$-0.68241 + 2.75592I$	$-1.99878 - 3.60983I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ 1.18201 + 1.11184I$ $a = -0.200539 + 1.108740I$ $b = -0.765750 + 0.827059I$	$4.55793 - 6.21102I$	0
$u = \ 1.18201 - 1.11184I$ $a = -0.200539 - 1.108740I$ $b = -0.765750 - 0.827059I$	$4.55793 + 6.21102I$	0
$u = -1.51963 + 0.70825I$ $a = \ 0.571398 - 0.342145I$ $b = \ 0.292414 - 0.624469I$	$-3.57874 - 4.50800I$	0
$u = -1.51963 - 0.70825I$ $a = \ 0.571398 + 0.342145I$ $b = \ 0.292414 + 0.624469I$	$-3.57874 + 4.50800I$	0
$u = \ 1.18633 + 1.20329I$ $a = -0.239816 + 0.946287I$ $b = -0.722036 + 0.723602I$	$5.26187 - 3.68883I$	0
$u = \ 1.18633 - 1.20329I$ $a = -0.239816 - 0.946287I$ $b = -0.722036 - 0.723602I$	$5.26187 + 3.68883I$	0
$u = -1.52882 + 0.78446I$ $a = \ 0.680075 - 0.313510I$ $b = \ 0.430335 - 0.633618I$	$-0.86229 - 12.39040I$	0
$u = -1.52882 - 0.78446I$ $a = \ 0.680075 + 0.313510I$ $b = \ 0.430335 + 0.633618I$	$-0.86229 + 12.39040I$	0
$u = \ 0.025728 + 0.280461I$ $a = \ 0.30072 - 3.39115I$ $b = -0.32413 - 1.65229I$	$1.32373 - 2.30468I$	$-8.78048 + 10.23043I$
$u = \ 0.025728 - 0.280461I$ $a = \ 0.30072 + 3.39115I$ $b = -0.32413 + 1.65229I$	$1.32373 + 2.30468I$	$-8.78048 - 10.23043I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.55351 + 0.76807I$ $a = -0.646932 - 0.283652I$ $b = -0.404196 - 0.586023I$	$1.40035 + 7.17372I$	0
$u = 1.55351 - 0.76807I$ $a = -0.646932 + 0.283652I$ $b = -0.404196 + 0.586023I$	$1.40035 - 7.17372I$	0
$u = -1.20178 + 1.26252I$ $a = 0.264973 + 0.857917I$ $b = 0.694318 + 0.661426I$	$3.85162 - 1.33085I$	0
$u = -1.20178 - 1.26252I$ $a = 0.264973 - 0.857917I$ $b = 0.694318 - 0.661426I$	$3.85162 + 1.33085I$	0
$u = -0.244322 + 0.036595I$ $a = -4.28136 - 0.60938I$ $b = 0.030082 + 0.879336I$	$-4.48802 + 0.11163I$	$-8.96076 - 0.03392I$
$u = -0.244322 - 0.036595I$ $a = -4.28136 + 0.60938I$ $b = 0.030082 - 0.879336I$	$-4.48802 - 0.11163I$	$-8.96076 + 0.03392I$
$u = 1.66945 + 0.72257I$ $a = -0.555069 - 0.171819I$ $b = -0.346168 - 0.414881I$	$2.79995 + 4.40530I$	0
$u = 1.66945 - 0.72257I$ $a = -0.555069 + 0.171819I$ $b = -0.346168 + 0.414881I$	$2.79995 - 4.40530I$	0
$u = -0.30049 + 1.79694I$ $a = -0.007389 + 0.403077I$ $b = 0.108868 + 0.663979I$	$1.32373 + 2.30468I$	0
$u = -0.30049 - 1.79694I$ $a = -0.007389 - 0.403077I$ $b = 0.108868 - 0.663979I$	$1.32373 - 2.30468I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.76731+0.66732I$		
$a=\quad 0.487865-0.115529I$	$1.79878+0.77129I$	0
$b=\quad 0.294375-0.312630I$		
$u=-1.76731-0.66732I$		
$a=\quad 0.487865+0.115529I$	$1.79878-0.77129I$	0
$b=\quad 0.294375+0.312630I$		

III.

$\boldsymbol{I_3^u = \langle -u^{26}+u^{25}+\cdots+b+4u,\ -4u^{26}+4u^{25}+\cdots+a-1,\ u^{27}-u^{26}+\cdots-4u^2+1\rangle}$

(i) Arc colorings

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

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

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 4u^{26} - 4u^{25} + \cdots - 4u + 1 \\ u^{26} - u^{25} + \cdots + u^2 - 4u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -4u^{26} + 5u^{25} + \cdots - 6u - 4 \\ -4u^{26} + 4u^{25} + \cdots + 5u - 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 3u^{26} - 3u^{25} + \cdots - u^2 + 1 \\ u^{26} - u^{25} + \cdots + u^2 - 4u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 3u^{26} - 3u^{25} + \cdots - u + 1 \\ u^{26} - u^{25} + \cdots + u^2 - 4u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -7u^{26} + 7u^{25} + \cdots + u - 10 \\ -3u^{26} + 23u^{24} + \cdots + 5u + 1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^{26} + 4u^{25} + \cdots + 4u - 25 \\ -10u^{25} + 12u^{24} + \cdots - 2u + 4 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 3u^{26} - 2u^{25} + \cdots - 10u - 2 \\ -3u^{26} + 3u^{25} + \cdots + u - 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -2u^{26} - u^{25} + \cdots - 4u + 11 \\ -u^{26} + 4u^{25} + \cdots + 3u - 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 8u^{26} - 6u^{25} + \cdots + 10u - 24 \\ 3u^{26} - 15u^{25} + \cdots - 11u + 8 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= u^{26} + 16u^{25} - 31u^{24} - 88u^{23} + 136u^{22} + 223u^{21} - 300u^{20} - 406u^{19} + 587u^{18} + 565u^{17} - 873u^{16} - 672u^{15} + 1075u^{14} + 663u^{13} - 1103u^{12} - 546u^{11} + 976u^{10} + 379u^9 - 718u^8 - 227u^7 + 444u^6 + 104u^5 - 214u^4 - 37u^3 + 89u^2 + 7u - 19$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{27} - 14u^{26} + \cdots - 4u + 1$
c_2	$u^{27} - 2u^{26} + \cdots + 2u - 1$
c_3	$u^{27} + 2u^{26} + \cdots - 4u - 1$
c_4, c_8	$u^{27} - u^{26} + \cdots - 4u^2 + 1$
c_5, c_9	$u^{27} - 4u^{25} + \cdots - u + 1$
c_6	$u^{27} + 2u^{26} + \cdots + 2u + 1$
c_7	$u^{27} + 10u^{26} + \cdots + 82u + 21$
c_{10}, c_{12}	$u^{27} - 8u^{26} + \cdots + 13u - 1$
c_{11}	$u^{27} + 19u^{26} + \cdots + 269u + 21$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{27} + 2y^{26} + \cdots - 8y - 1$
c_2, c_6	$y^{27} + 14y^{26} + \cdots - 4y - 1$
c_3	$y^{27} - 10y^{26} + \cdots - 6y - 1$
c_4, c_8	$y^{27} - 13y^{26} + \cdots + 8y - 1$
c_5, c_9	$y^{27} - 8y^{26} + \cdots + 13y - 1$
c_7	$y^{27} - 2y^{26} + \cdots - 4280y - 441$
c_{10}, c_{12}	$y^{27} + 16y^{26} + \cdots + 13y - 1$
c_{11}	$y^{27} + 5y^{26} + \cdots - 4331y - 441$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.939884+0.236987I$ $a=\ 0.810144+0.741206I$ $b=\ 1.000360+0.252236I$	$2.51856-1.21074I$	$3.94040-0.29577I$
$u=-0.939884-0.236987I$ $a=\ 0.810144-0.741206I$ $b=\ 1.000360-0.252236I$	$2.51856+1.21074I$	$3.94040+0.29577I$
$u=\ 0.548007+0.792337I$ $a=\ 1.085160+0.270704I$ $b=-0.590455+0.853710I$	$-2.27602-8.69889I$	$-1.42722+11.13289I$
$u=\ 0.548007-0.792337I$ $a=\ 1.085160-0.270704I$ $b=-0.590455-0.853710I$	$-2.27602+8.69889I$	$-1.42722-11.13289I$
$u=-0.589968+0.754758I$ $a=-1.038790+0.463379I$ $b=\ 0.642862+0.822425I$	$-0.15087+4.24442I$	$2.14665-7.03819I$
$u=-0.589968-0.754758I$ $a=-1.038790-0.463379I$ $b=\ 0.642862-0.822425I$	$-0.15087-4.24442I$	$2.14665+7.03819I$
$u=\ 0.890158+0.290116I$ $a=-0.713570+0.987743I$ $b=-1.015530+0.330975I$	$3.77214-3.83630I$	$5.06007+5.94321I$
$u=\ 0.890158-0.290116I$ $a=-0.713570-0.987743I$ $b=-1.015530-0.330975I$	$3.77214+3.83630I$	$5.06007-5.94321I$
$u=-0.807919+0.441219I$ $a=\ 0.091226+1.278670I$ $b=\ 0.953401+0.520669I$	$-1.87221+4.10431I$	$-3.94238-5.87297I$
$u=-0.807919-0.441219I$ $a=\ 0.091226-1.278670I$ $b=\ 0.953401-0.520669I$	$-1.87221-4.10431I$	$-3.94238+5.87297I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.636947 + 0.872631I$ $a = 0.752579 + 0.250043I$ $b = -0.545712 + 0.747636I$	$-3.40751 - 1.59530I$	$-3.92861 + 2.68860I$
$u = 0.636947 - 0.872631I$ $a = 0.752579 - 0.250043I$ $b = -0.545712 - 0.747636I$	$-3.40751 + 1.59530I$	$-3.92861 - 2.68860I$
$u = -0.602822 + 0.659526I$ $a = -1.115350 + 0.849181I$ $b = 0.755067 + 0.826092I$	$-0.05975 + 3.16559I$	$1.56369 - 5.73335I$
$u = -0.602822 - 0.659526I$ $a = -1.115350 - 0.849181I$ $b = 0.755067 - 0.826092I$	$-0.05975 - 3.16559I$	$1.56369 + 5.73335I$
$u = -0.839987 + 0.722261I$ $a = -0.390556 + 0.623286I$ $b = 0.684453 + 0.588525I$	$-1.55294 + 3.72964I$	$-4.26933 - 5.42150I$
$u = -0.839987 - 0.722261I$ $a = -0.390556 - 0.623286I$ $b = 0.684453 - 0.588525I$	$-1.55294 - 3.72964I$	$-4.26933 + 5.42150I$
$u = 0.649962 + 0.584702I$ $a = 0.87800 + 1.21188I$ $b = -0.850371 + 0.764989I$	$-3.26608 - 5.58744I$	$-5.80184 + 8.84617I$
$u = 0.649962 - 0.584702I$ $a = 0.87800 - 1.21188I$ $b = -0.850371 - 0.764989I$	$-3.26608 + 5.58744I$	$-5.80184 - 8.84617I$
$u = 0.798802 + 0.345503I$ $a = -0.51460 + 1.42697I$ $b = -1.054580 + 0.456135I$	$2.85840 - 6.36076I$	$2.86410 + 6.10449I$
$u = 0.798802 - 0.345503I$ $a = -0.51460 - 1.42697I$ $b = -1.054580 - 0.456135I$	$2.85840 + 6.36076I$	$2.86410 - 6.10449I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.585205 + 0.621689I$ $a = 1.23433 + 1.02860I$ $b = -0.802792 + 0.852842I$	$-2.06572 + 1.27631I$	$-2.78728 + 1.66276I$
$u = 0.585205 - 0.621689I$ $a = 1.23433 - 1.02860I$ $b = -0.802792 - 0.852842I$	$-2.06572 - 1.27631I$	$-2.78728 - 1.66276I$
$u = -0.767504 + 0.349092I$ $a = 0.47733 + 1.59851I$ $b = 1.079580 + 0.491037I$	$0.73528 + 11.44510I$	$-0.67840 - 10.12582I$
$u = -0.767504 - 0.349092I$ $a = 0.47733 - 1.59851I$ $b = 1.079580 - 0.491037I$	$0.73528 - 11.44510I$	$-0.67840 + 10.12582I$
$u = -1.60182$ $a = 0.243310$ $b = 0.624290$	-3.15306	31.1530
$u = 1.73991 + 0.18336I$ $a = -0.177547 + 0.057851I$ $b = -0.568429 + 0.059903I$	$-6.81621 - 4.56624I$	$37.1836 + 25.7917I$
$u = 1.73991 - 0.18336I$ $a = -0.177547 - 0.057851I$ $b = -0.568429 - 0.059903I$	$-6.81621 + 4.56624I$	$37.1836 - 25.7917I$

IV.

$\boldsymbol{I_4^u = \langle -u^3 - u^2 + b - 3u - 1,\ -u^3 - u^2 + a - 3u - 1,\ u^4 + u^3 + 3u^2 + u + 1 \rangle}$

(i) Arc colorings

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

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

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^3 + u^2 + 3u + 1 \\ u^3 + u^2 + 3u + 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^3 - u^2 - 3u - 1 \\ -u^3 - u^2 - 2u - 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0 \\ u^3 + u^2 + 3u + 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^3 + u^2 + 3u + 1 \\ u^3 + u^2 + 2u + 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^3 + u^2 + 3u + 1 \\ u^3 + u^2 + 2u + 1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^3 - 2u + 2 \\ -u^3 - u^2 - 2u \end{pmatrix}$$

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

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

$$a_2 = \begin{pmatrix} u^2 + 2 \\ -u^3 - u^2 - 2u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -u^3 - u^2 - 2u + 7$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_6	$(y^2+y+1)^2$
c_4, c_5, c_8 c_9	$y^4+5y^3+9y^2+5y+1$
c_7, c_{11}	y^4
c_{10}, c_{12}	$(y-1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.148403+0.632502I$ $a=\ 0.35160+1.49853I$ $b=\ 0.35160+1.49853I$	$1.64493-2.02988I$	$7.50000-0.86603I$
$u=-0.148403-0.632502I$ $a=\ 0.35160-1.49853I$ $b=\ 0.35160-1.49853I$	$1.64493+2.02988I$	$7.50000+0.86603I$
$u=-0.35160+1.49853I$ $a=\ 0.148403+0.632502I$ $b=\ 0.148403+0.632502I$	$1.64493+2.02988I$	$7.50000+0.86603I$
$u=-0.35160-1.49853I$ $a=\ 0.148403-0.632502I$ $b=\ 0.148403-0.632502I$	$1.64493-2.02988I$	$7.50000-0.86603I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2-u+1)^2)(u^{27}-14u^{26}+\cdots-4u+1)$ $\cdot((u^{51}+24u^{50}+\cdots-4u-1)^2)(u^{77}+37u^{76}+\cdots-7u-16)$
c_2	$((u^2+u+1)^2)(u^{27}-2u^{26}+\cdots+2u-1)(u^{51}+2u^{50}+\cdots+4u+1)^2$ $\cdot(u^{77}-5u^{76}+\cdots-33u+4)$
c_3	$((u^2-u+1)^2)(u^{27}+2u^{26}+\cdots-4u-1)$ $\cdot((u^{51}-2u^{50}+\cdots-139u+26)^2)(u^{77}+5u^{76}+\cdots+17874u+1768)$
c_4, c_8	$(u^4+u^3+3u^2+u+1)(u^{27}-u^{26}+\cdots-4u^2+1)(u^{77}+u^{76}+\cdots+2u+1)$ $\cdot(u^{102}+4u^{101}+\cdots+15u+2)$
c_5, c_9	$(u^4+u^3+3u^2+u+1)(u^{27}-4u^{25}+\cdots-u+1)$ $\cdot(u^{77}+3u^{75}+\cdots-9u+2)(u^{102}+2u^{101}+\cdots+2916u+376)$
c_6	$((u^2-u+1)^2)(u^{27}+2u^{26}+\cdots+2u+1)(u^{51}+2u^{50}+\cdots+4u+1)^2$ $\cdot(u^{77}-5u^{76}+\cdots-33u+4)$
c_7	$u^4(u^{27}+10u^{26}+\cdots+82u+21)(u^{51}+15u^{50}+\cdots+1000u+64)^2$ $\cdot(u^{77}-25u^{76}+\cdots-818285u+37300)$
c_{10}, c_{12}	$((u-1)^4)(u^{27}-8u^{26}+\cdots+13u-1)(u^{77}-12u^{76}+\cdots+17u+1)$ $\cdot(u^{102}+5u^{101}+\cdots+10593u+956)$
c_{11}	$u^4(u^{27}+19u^{26}+\cdots+269u+21)(u^{51}+25u^{50}+\cdots-10u-4)^2$ $\cdot(u^{77}-42u^{76}+\cdots+11u-2)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^2+y+1)^2)(y^{27}+2y^{26}+\cdots-8y-1)(y^{51}+8y^{50}+\cdots-32y-1)^2$ $\cdot(y^{77}+9y^{76}+\cdots+401y-256)$
c_2, c_6	$((y^2+y+1)^2)(y^{27}+14y^{26}+\cdots-4y-1)$ $\cdot((y^{51}+24y^{50}+\cdots-4y-1)^2)(y^{77}+37y^{76}+\cdots-7y-16)$
c_3	$((y^2+y+1)^2)(y^{27}-10y^{26}+\cdots-6y-1)$ $\cdot(y^{51}-8y^{50}+\cdots+15733y-676)^2$ $\cdot(y^{77}-19y^{76}+\cdots+74410324y-3125824)$
c_4, c_8	$(y^4+5y^3+9y^2+5y+1)(y^{27}-13y^{26}+\cdots+8y-1)$ $\cdot(y^{77}+33y^{76}+\cdots-86y-1)(y^{102}-20y^{101}+\cdots-57y+4)$
c_5, c_9	$(y^4+5y^3+9y^2+5y+1)(y^{27}-8y^{26}+\cdots+13y-1)$ $\cdot(y^{77}+6y^{76}+\cdots+145y-4)$ $\cdot(y^{102}+96y^{100}+\cdots+16598704y+141376)$
c_7	$y^4(y^{27}-2y^{26}+\cdots-4280y-441)$ $\cdot(y^{51}+19y^{50}+\cdots-5184y-4096)^2$ $\cdot(y^{77}+17y^{76}+\cdots-27321142975y-1391290000)$
c_{10}, c_{12}	$((y-1)^4)(y^{27}+16y^{26}+\cdots+13y-1)(y^{77}-50y^{76}+\cdots+83y-1)$ $\cdot(y^{102}+23y^{101}+\cdots+48008215y+913936)$
c_{11}	$y^4(y^{27}+5y^{26}+\cdots-4331y-441)(y^{51}-5y^{50}+\cdots+428y-16)^2$ $\cdot(y^{77}+60y^{75}+\cdots-39y-4)$