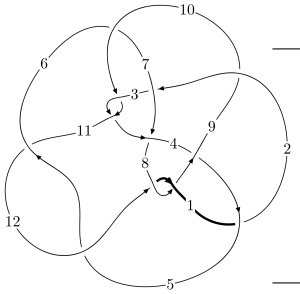
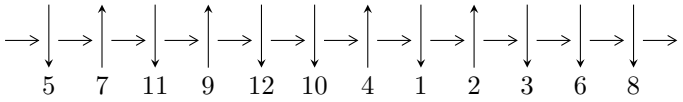
$12a_{1270}$ $(K12a_{1270})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle 7.74082 \times 10^{49} u^{34} - 5.22423 \times 10^{49} u^{33} + \cdots + 1.89535 \times 10^{51} b - 5.14492 \times 10^{51}, \\
&\quad - 9.06527 \times 10^{50} u^{34} + 2.64032 \times 10^{50} u^{33} + \cdots + 1.13721 \times 10^{52} a + 6.01325 \times 10^{52}, \\
&\quad u^{35} - u^{34} + \cdots - 72u + 24 \rangle \\
I_2^u &= \langle 2.37244 \times 10^{960} u^{121} - 2.53157 \times 10^{961} u^{120} + \cdots + 2.07793 \times 10^{963} b + 5.97659 \times 10^{962}, \\
&\quad 6.58503 \times 10^{963} u^{121} - 6.71449 \times 10^{964} u^{120} + \cdots + 2.59741 \times 10^{965} a - 3.63631 \times 10^{966}, \\
&\quad u^{122} - 10u^{121} + \cdots - 1165u - 125 \rangle \\
I_3^u &= \langle -5.91071 \times 10^{45} u^{25} + 3.90400 \times 10^{46} u^{24} + \cdots + 1.44135 \times 10^{48} b - 5.25354 \times 10^{46}, \\
&\quad - 7.34230 \times 10^{46} u^{25} + 5.10520 \times 10^{47} u^{24} + \cdots + 2.59442 \times 10^{49} a - 7.68850 \times 10^{48}, \\
&\quad u^{26} - 5u^{25} + \cdots + 72u + 72 \rangle \\
I_4^u &= \langle -u^4 - 2u^3 - 2u^2 + b + u + 2,\ u^4 + u^3 + 2u^2 + a - u,\ u^5 + u^4 + u^3 - 2u^2 - u + 1 \rangle \\
I_1^v &= \langle a,\ b - 1,\ v - 1 \rangle
\end{aligned}$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 189 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. $\boldsymbol{I_1^u = \langle 7.74 \times 10^{49} u^{34} - 5.22 \times 10^{49} u^{33} + \cdots + 1.90 \times 10^{51} b - 5.14 \times 10^{51},\ -9.07 \times 10^{50} u^{34} + 2.64 \times 10^{50} u^{33} + \cdots + 1.14 \times 10^{52} a + 6.01 \times 10^{52},\ u^{35} - u^{34} + \cdots - 72u + 24 \rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.0797150u^{34} - 0.0232175u^{33} + \cdots + 6.72639u - 5.28772 \\ -0.0408411u^{34} + 0.0275634u^{33} + \cdots + 1.10469u + 2.71450 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.120556u^{34} - 0.0507809u^{33} + \cdots + 5.62170u - 8.00222 \\ -0.0408411u^{34} + 0.0275634u^{33} + \cdots + 1.10469u + 2.71450 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.0824652u^{34} - 0.0487772u^{33} + \cdots + 4.59592u - 3.61311 \\ -0.0251998u^{34} + 0.00644199u^{33} + \cdots - 0.579405u + 3.58059 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.0655862u^{34} - 0.0282322u^{33} + \cdots + 6.52922u - 4.49058 \\ -0.0520750u^{34} + 0.0187396u^{33} + \cdots - 1.39210u + 3.75828 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.0172414u^{34} + 0.0160165u^{33} + \cdots + 6.98453u - 2.51757 \\ -0.0539820u^{34} + 0.0424703u^{33} + \cdots + 1.30295u + 2.09516 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.0922554u^{34} + 0.0569040u^{33} + \cdots - 4.83296u + 4.75136 \\ 0.0643395u^{34} - 0.0476159u^{33} + \cdots + 2.75223u - 5.13137 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.0164467u^{34} + 0.0368134u^{33} + \cdots + 4.66015u - 0.538408 \\ -0.0352242u^{34} + 0.0180585u^{33} + \cdots - 0.463258u + 1.49036 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.0102200u^{34} - 0.0759094u^{33} + \cdots - 6.62406u + 4.46752 \\ 0.102257u^{34} - 0.0983097u^{33} + \cdots - 0.249882u - 4.16563 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.0421436u^{34} + 0.104920u^{33} + \cdots + 3.60754u - 1.84121 \\ 0.00461815u^{34} + 0.0321789u^{33} + \cdots + 5.76299u - 3.08071 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.126101u^{34} + 0.0195036u^{33} + \cdots + 2.65610u - 11.8112$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{35} + u^{34} + \cdots - 72u - 24$
c_2, c_4	$4(4u^{35} - 16u^{34} + \cdots + 6u - 1)$
c_3, c_8, c_{10} c_{12}	$u^{35} - u^{34} + \cdots + 13u + 1$
c_5, c_{11}	$4(4u^{35} - 8u^{34} + \cdots - 448u^2 - 128)$
c_7	$u^{35} - 10u^{34} + \cdots + 18240u - 2880$
c_9	$u^{35} + 5u^{34} + \cdots + 1166u + 268$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{35} - 3y^{34} + \cdots + 11136y - 576$
c_2, c_4	$16(16y^{35} + 160y^{34} + \cdots - 20y - 1)$
c_3, c_8, c_{10} c_{12}	$y^{35} - 23y^{34} + \cdots + 217y - 1$
c_5, c_{11}	$16(16y^{35} + 384y^{34} + \cdots - 114688y - 16384)$
c_7	$y^{35} + 8y^{34} + \cdots - 2390400y - 8294400$
c_9	$y^{35} - 9y^{34} + \cdots + 179820y - 71824$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.743105+0.625315I$ $a=\ \ 0.224684+0.309873I$ $b=-0.120177-0.806594I$	$2.81070+4.31847I$	$0.02638-5.66453I$
$u=-0.743105-0.625315I$ $a=\ \ 0.224684-0.309873I$ $b=-0.120177+0.806594I$	$2.81070-4.31847I$	$0.02638+5.66453I$
$u=-0.798409+0.548304I$ $a=-1.037460-0.810232I$ $b=-1.308290+0.467708I$	$-7.46752+7.34663I$	$-12.52677-6.17572I$
$u=-0.798409-0.548304I$ $a=-1.037460+0.810232I$ $b=-1.308290-0.467708I$	$-7.46752-7.34663I$	$-12.52677+6.17572I$
$u=\ \ 0.976925+0.344857I$ $a=-0.959722+0.124413I$ $b=-0.865289+0.985076I$	$-0.023653+1.127930I$	$-10.10478+0.88302I$
$u=\ \ 0.976925-0.344857I$ $a=-0.959722-0.124413I$ $b=-0.865289-0.985076I$	$-0.023653-1.127930I$	$-10.10478-0.88302I$
$u=\ \ 0.853048+0.649064I$ $a=\ \ 0.547797-1.026300I$ $b=\ \ 1.002960-0.262125I$	$-0.81004+3.41365I$	$-10.43435-4.21994I$
$u=\ \ 0.853048-0.649064I$ $a=\ \ 0.547797+1.026300I$ $b=\ \ 1.002960+0.262125I$	$-0.81004-3.41365I$	$-10.43435+4.21994I$
$u=-0.758809+0.450562I$ $a=-1.56781-2.38091I$ $b=-0.889682-0.120944I$	$0.926289-0.422645I$	$-8.89997-5.86272I$
$u=-0.758809-0.450562I$ $a=-1.56781+2.38091I$ $b=-0.889682+0.120944I$	$0.926289+0.422645I$	$-8.89997+5.86272I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.706010+1.013230I$ $a=\ \ 0.355151+0.130036I$ $b=\ \ 0.243640+1.121330I$	$8.09911+8.05470I$	$1.54795-6.13176I$
$u=-0.706010-1.013230I$ $a=\ \ 0.355151-0.130036I$ $b=\ \ 0.243640-1.121330I$	$8.09911-8.05470I$	$1.54795+6.13176I$
$u=\ \ 0.310600+1.210570I$ $a=\ \ 0.487959-0.160101I$ $b=-0.052662-0.627718I$	$5.68435-2.06312I$	$2.89452+3.67321I$
$u=\ \ 0.310600-1.210570I$ $a=\ \ 0.487959+0.160101I$ $b=-0.052662+0.627718I$	$5.68435+2.06312I$	$2.89452-3.67321I$
$u=\ \ 1.193170+0.377442I$ $a=-1.331010+0.363750I$ $b=-1.204850-0.074357I$	$-6.47571-0.47299I$	$-13.45061-0.55355I$
$u=\ \ 1.193170-0.377442I$ $a=-1.331010-0.363750I$ $b=-1.204850+0.074357I$	$-6.47571+0.47299I$	$-13.45061+0.55355I$
$u=-0.494027+0.506228I$ $a=-0.93006-1.12219I$ $b=-0.664830-0.648856I$	$2.66885-2.56110I$	$0.76974+3.55295I$
$u=-0.494027-0.506228I$ $a=-0.93006+1.12219I$ $b=-0.664830+0.648856I$	$2.66885+2.56110I$	$0.76974-3.55295I$
$u=\ \ 0.513237+0.402612I$ $a=-0.448803-0.445867I$ $b=-0.047772+0.461900I$	$-0.384148-1.201750I$	$-4.76559+5.16723I$
$u=\ \ 0.513237-0.402612I$ $a=-0.448803+0.445867I$ $b=-0.047772-0.461900I$	$-0.384148+1.201750I$	$-4.76559-5.16723I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.994202 + 0.939323I$ $a = 1.24343 - 0.91505I$ $b = 1.267270 + 0.429167I$	$-4.44986 - 13.42210I$	$-7.33283 + 10.23246I$
$u = 0.994202 - 0.939323I$ $a = 1.24343 + 0.91505I$ $b = 1.267270 - 0.429167I$	$-4.44986 + 13.42210I$	$-7.33283 - 10.23246I$
$u = -1.241200 + 0.597729I$ $a = 1.256640 + 0.157556I$ $b = 1.26207 - 0.73224I$	$-3.44745 + 12.16340I$	$-7.50485 - 9.70091I$
$u = -1.241200 - 0.597729I$ $a = 1.256640 - 0.157556I$ $b = 1.26207 + 0.73224I$	$-3.44745 - 12.16340I$	$-7.50485 + 9.70091I$
$u = -0.578602$ $a = -2.20779$ $b = 0.0669685$	2.84525	6.43630
$u = 1.32688 + 0.77751I$ $a = 1.280860 + 0.118894I$ $b = 1.305910 + 0.311259I$	$-3.10003 - 5.12933I$	$-9.17022 + 3.26485I$
$u = 1.32688 - 0.77751I$ $a = 1.280860 - 0.118894I$ $b = 1.305910 - 0.311259I$	$-3.10003 + 5.12933I$	$-9.17022 - 3.26485I$
$u = 0.401727 + 0.087884I$ $a = 0.419510 + 1.323910I$ $b = 1.081750 - 0.491933I$	$-2.03242 + 0.52401I$	$-1.68884 + 3.20849I$
$u = 0.401727 - 0.087884I$ $a = 0.419510 - 1.323910I$ $b = 1.081750 + 0.491933I$	$-2.03242 - 0.52401I$	$-1.68884 - 3.20849I$
$u = 1.21105 + 1.23455I$ $a = -1.260120 + 0.315341I$ $b = -1.33047 - 0.63221I$	$1.1748 - 20.6417I$	$0. + 10.47448I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.21105 - 1.23455I$ $a = -1.260120 - 0.315341I$ $b = -1.33047 + 0.63221I$	$1.1748 + 20.6417I$	$0. - 10.47448I$
$u = -1.18457 + 1.29983I$ $a = 0.924235 + 0.510686I$ $b = 1.152670 - 0.132602I$	$-5.94053 + 5.22826I$	0
$u = -1.18457 - 1.29983I$ $a = 0.924235 - 0.510686I$ $b = 1.152670 + 0.132602I$	$-5.94053 - 5.22826I$	0
$u = -1.06541 + 1.88244I$ $a = -1.101420 - 0.116501I$ $b = -1.365740 + 0.283029I$	$-3.45972 + 8.84721I$	0
$u = -1.06541 - 1.88244I$ $a = -1.101420 + 0.116501I$ $b = -1.365740 - 0.283029I$	$-3.45972 - 8.84721I$	0

II. $\boldsymbol{I_2^u = \langle 2.37 \times 10^{960} u^{121} - 2.53 \times 10^{961} u^{120} + \cdots + 2.08 \times 10^{963} b + 5.98 \times 10^{962},\ 6.59 \times 10^{963} u^{121} - 6.71 \times 10^{964} u^{120} + \cdots + 2.60 \times 10^{965} a - 3.64 \times 10^{966},\ u^{122} - 10 u^{121} + \cdots - 1165 u - 125 \rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.0253523u^{121} + 0.258507u^{120} + \cdots + 85.9840u + 13.9997 \\ -0.00114173u^{121} + 0.0121832u^{120} + \cdots + 10.4661u - 0.287622 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.0242106u^{121} + 0.246324u^{120} + \cdots + 75.5179u + 14.2874 \\ -0.00114173u^{121} + 0.0121832u^{120} + \cdots + 10.4661u - 0.287622 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.0247253u^{121} + 0.252149u^{120} + \cdots + 84.0962u + 13.4725 \\ -0.00133947u^{121} + 0.0142212u^{120} + \cdots + 11.1913u - 0.202908 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.00170178u^{121} - 0.0158265u^{120} + \cdots - 4.36369u - 3.55710 \\ 0.00514350u^{121} - 0.0520866u^{120} + \cdots - 15.0763u - 3.93614 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.00960896u^{121} + 0.0992660u^{120} + \cdots + 39.1663u + 3.85279 \\ 0.00362962u^{121} - 0.0364387u^{120} + \cdots - 7.65652u - 3.24338 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.0331351u^{121} + 0.337007u^{120} + \cdots + 93.2270u + 19.6629 \\ -0.00164599u^{121} + 0.0169720u^{120} + \cdots - 1.38532u - 1.94562 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.0118904u^{121} - 0.118522u^{120} + \cdots - 25.4450u - 15.0847 \\ 0.0150745u^{121} - 0.153448u^{120} + \cdots - 48.8293u - 10.4630 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.0118399u^{121} - 0.120721u^{120} + \cdots - 31.6689u - 4.06732 \\ -0.000359836u^{121} + 0.00356077u^{120} + \cdots - 2.45589u + 0.840103 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.00736804u^{121} - 0.0742955u^{120} + \cdots - 27.2932u - 8.74550 \\ 0.00884442u^{121} - 0.0901755u^{120} + \cdots - 25.3312u - 5.99966 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.0191521u^{121} - 0.194669u^{120} + \cdots - 102.892u - 26.6829$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{122} + 10u^{121} + \cdots + 1165u - 125$
c_2, c_4	$25(25u^{122} + 75u^{121} + \cdots + 7u + 1)$
c_3, c_8, c_{10} c_{12}	$u^{122} - 36u^{120} + \cdots + 929u + 103$
c_5, c_{11}	$25(5u^{61} + u^{60} + \cdots - 2062u + 569)^2$
c_7	$(u^{61} + 8u^{60} + \cdots + 6810u + 724)^2$
c_9	$(u^{61} - 18u^{59} + \cdots - 10865u + 9784)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{122} + 18y^{121} + \cdots - 1184975y + 15625$
c_2, c_4	$625(625y^{122} - 5675y^{121} + \cdots - 29y + 1)$
c_3, c_8, c_{10} c_{12}	$y^{122} - 72y^{121} + \cdots - 412519y + 10609$
c_5, c_{11}	$625(25y^{61} + 1199y^{60} + \cdots - 3158812y - 323761)^2$
c_7	$(y^{61} - 28y^{60} + \cdots - 1108164y - 524176)^2$
c_9	$(y^{61} - 36y^{60} + \cdots + 2341110001y - 95726656)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.344896+0.943013I$ $a=-0.599105-0.080280I$ $b=-1.039280-0.249283I$	$0.44283-2.75797I$	0
$u=-0.344896-0.943013I$ $a=-0.599105+0.080280I$ $b=-1.039280+0.249283I$	$0.44283+2.75797I$	0
$u=\ \ 0.735741+0.690425I$ $a=-1.58994+1.55980I$ $b=-1.142120-0.332656I$	-3.20560	0
$u=\ \ 0.735741-0.690425I$ $a=-1.58994-1.55980I$ $b=-1.142120+0.332656I$	-3.20560	0
$u=-0.496884+0.848888I$ $a=\ \ 2.07101+0.37586I$ $b=\ \ 0.855278-0.341384I$	$0.77506-2.15360I$	0
$u=-0.496884-0.848888I$ $a=\ \ 2.07101-0.37586I$ $b=\ \ 0.855278+0.341384I$	$0.77506+2.15360I$	0
$u=\ \ 0.313005+0.995145I$ $a=\ \ 0.296120-0.166755I$ $b=-0.138377-1.259260I$	$5.85317-3.26425I$	0
$u=\ \ 0.313005-0.995145I$ $a=\ \ 0.296120+0.166755I$ $b=-0.138377+1.259260I$	$5.85317+3.26425I$	0
$u=-0.744001+0.585851I$ $a=-0.212690-0.848290I$ $b=-0.899146-0.319862I$	$0.30534-1.56924I$	0
$u=-0.744001-0.585851I$ $a=-0.212690+0.848290I$ $b=-0.899146+0.319862I$	$0.30534+1.56924I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.350579+0.874543I$ $a=-0.329074-0.131092I$ $b=-0.130068-1.346020I$	$5.04372+0.96008I$	0
$u=-0.350579-0.874543I$ $a=-0.329074+0.131092I$ $b=-0.130068+1.346020I$	$5.04372-0.96008I$	0
$u=0.907758+0.545285I$ $a=0.98203-1.37002I$ $b=0.786601-0.090659I$	$0.30534-1.56924I$	0
$u=0.907758-0.545285I$ $a=0.98203+1.37002I$ $b=0.786601+0.090659I$	$0.30534+1.56924I$	0
$u=-0.879973+0.614710I$ $a=-0.887999-1.010960I$ $b=-1.222680+0.191124I$	$-7.72980-3.10750I$	0
$u=-0.879973-0.614710I$ $a=-0.887999+1.010960I$ $b=-1.222680-0.191124I$	$-7.72980+3.10750I$	0
$u=-0.706675+0.598682I$ $a=-1.378770+0.089695I$ $b=-1.45716+0.71442I$	$1.07069+4.78696I$	0
$u=-0.706675-0.598682I$ $a=-1.378770-0.089695I$ $b=-1.45716-0.71442I$	$1.07069-4.78696I$	0
$u=0.940683+0.525430I$ $a=0.821611-0.841974I$ $b=1.097730+0.388331I$	$-3.17611-1.97793I$	0
$u=0.940683-0.525430I$ $a=0.821611+0.841974I$ $b=1.097730-0.388331I$	$-3.17611+1.97793I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.790673 + 0.764744I$ $a = 0.663204 - 0.078125I$ $b = 0.016357 + 0.608342I$	$0.10617 + 3.36466I$	0
$u = 0.790673 - 0.764744I$ $a = 0.663204 + 0.078125I$ $b = 0.016357 - 0.608342I$	$0.10617 - 3.36466I$	0
$u = -0.258195 + 1.082180I$ $a = -0.296332 + 0.134497I$ $b = 0.671474 - 0.779981I$	$2.91739 + 5.62744I$	0
$u = -0.258195 - 1.082180I$ $a = -0.296332 - 0.134497I$ $b = 0.671474 + 0.779981I$	$2.91739 - 5.62744I$	0
$u = -0.619621 + 0.934025I$ $a = 0.695199 + 1.119970I$ $b = 1.120040 - 0.394013I$	$0.10617 + 3.36466I$	0
$u = -0.619621 - 0.934025I$ $a = 0.695199 - 1.119970I$ $b = 1.120040 + 0.394013I$	$0.10617 - 3.36466I$	0
$u = -0.591252 + 0.960898I$ $a = -0.106773 - 0.250520I$ $b = -0.161790 - 1.173080I$	$6.00057 + 5.23295I$	0
$u = -0.591252 - 0.960898I$ $a = -0.106773 + 0.250520I$ $b = -0.161790 + 1.173080I$	$6.00057 - 5.23295I$	0
$u = 0.896544 + 0.707064I$ $a = -0.489143 + 0.168933I$ $b = -0.156697 - 0.819636I$	$-0.26653 - 9.02592I$	0
$u = 0.896544 - 0.707064I$ $a = -0.489143 - 0.168933I$ $b = -0.156697 + 0.819636I$	$-0.26653 + 9.02592I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.369969 + 0.731942I$ $a = -0.213708 - 0.807599I$ $b = 0.045076 + 0.580892I$	$0.44283 - 2.75797I$	0
$u = 0.369969 - 0.731942I$ $a = -0.213708 + 0.807599I$ $b = 0.045076 - 0.580892I$	$0.44283 + 2.75797I$	0
$u = -0.817541 + 0.058779I$ $a = 1.003230 + 0.191642I$ $b = 0.829240 + 1.130720I$	$-1.37438 + 5.03809I$	0
$u = -0.817541 - 0.058779I$ $a = 1.003230 - 0.191642I$ $b = 0.829240 - 1.130720I$	$-1.37438 - 5.03809I$	0
$u = 0.524914 + 1.071220I$ $a = 0.279357 - 0.309824I$ $b = 0.201360 - 1.075790I$	$6.74364 - 1.82953I$	0
$u = 0.524914 - 1.071220I$ $a = 0.279357 + 0.309824I$ $b = 0.201360 + 1.075790I$	$6.74364 + 1.82953I$	0
$u = -0.660640 + 0.462872I$ $a = 0.942936 - 0.907949I$ $b = 0.234151 + 0.070924I$	$-3.17392 + 4.40270I$	0
$u = -0.660640 - 0.462872I$ $a = 0.942936 + 0.907949I$ $b = 0.234151 - 0.070924I$	$-3.17392 - 4.40270I$	0
$u = 0.611359 + 0.511877I$ $a = 1.218500 - 0.012171I$ $b = 1.34892 + 0.84641I$	$0.77506 - 2.15360I$	0
$u = 0.611359 - 0.511877I$ $a = 1.218500 + 0.012171I$ $b = 1.34892 - 0.84641I$	$0.77506 + 2.15360I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.676011 + 0.995074I$ $a = -0.262278 + 0.188808I$ $b = -0.160143 + 1.220980I$	$4.8547 - 14.2006I$	0
$u = 0.676011 - 0.995074I$ $a = -0.262278 - 0.188808I$ $b = -0.160143 - 1.220980I$	$4.8547 + 14.2006I$	0
$u = -0.049469 + 1.221170I$ $a = -0.537878 - 0.039817I$ $b = 0.585256 + 0.487855I$	$3.38091 + 7.67122I$	0
$u = -0.049469 - 1.221170I$ $a = -0.537878 + 0.039817I$ $b = 0.585256 - 0.487855I$	$3.38091 - 7.67122I$	0
$u = 0.589586 + 0.478408I$ $a = 1.59735 - 0.40331I$ $b = 1.31214 + 0.81529I$	$0.58899 - 6.83774I$	0
$u = 0.589586 - 0.478408I$ $a = 1.59735 + 0.40331I$ $b = 1.31214 - 0.81529I$	$0.58899 + 6.83774I$	0
$u = -0.633627 + 0.344067I$ $a = -1.76866 + 0.00062I$ $b = -1.22270 + 0.75356I$	$2.28409 + 3.58575I$	0
$u = -0.633627 - 0.344067I$ $a = -1.76866 - 0.00062I$ $b = -1.22270 - 0.75356I$	$2.28409 - 3.58575I$	0
$u = -0.017193 + 1.322030I$ $a = 0.352713 - 0.162984I$ $b = -0.657413 + 0.343441I$	$6.74364 - 1.82953I$	0
$u = -0.017193 - 1.322030I$ $a = 0.352713 + 0.162984I$ $b = -0.657413 - 0.343441I$	$6.74364 + 1.82953I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.600197 + 0.312067I$ $a = -0.338113 + 1.077580I$ $b = 0.503287 - 0.360908I$	$-1.60260 - 0.22148I$	$-8.15196 + 3.06639I$
$u = 0.600197 - 0.312067I$ $a = -0.338113 - 1.077580I$ $b = 0.503287 + 0.360908I$	$-1.60260 + 0.22148I$	$-8.15196 - 3.06639I$
$u = 0.529198 + 1.213910I$ $a = -0.438502 - 0.185971I$ $b = -0.142221 + 0.680779I$	$1.18305 - 3.04202I$	0
$u = 0.529198 - 1.213910I$ $a = -0.438502 + 0.185971I$ $b = -0.142221 - 0.680779I$	$1.18305 + 3.04202I$	0
$u = -0.581785 + 0.335169I$ $a = -1.40293 - 0.83160I$ $b = 0.040109 + 0.305612I$	2.82130	$4.70535 + 0.I$
$u = -0.581785 - 0.335169I$ $a = -1.40293 + 0.83160I$ $b = 0.040109 - 0.305612I$	2.82130	$4.70535 + 0.I$
$u = -0.639963 + 0.089726I$ $a = 1.52060 - 0.02924I$ $b = 1.311930 + 0.276930I$	$-1.60260 + 0.22148I$	$-8.15196 - 3.06639I$
$u = -0.639963 - 0.089726I$ $a = 1.52060 + 0.02924I$ $b = 1.311930 - 0.276930I$	$-1.60260 - 0.22148I$	$-8.15196 + 3.06639I$
$u = 0.566158 + 0.303999I$ $a = -1.330430 + 0.255756I$ $b = -1.33865 + 0.80106I$	$-3.00354 - 3.38830I$	$-9.3034 + 15.7841I$
$u = 0.566158 - 0.303999I$ $a = -1.330430 - 0.255756I$ $b = -1.33865 - 0.80106I$	$-3.00354 + 3.38830I$	$-9.3034 - 15.7841I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.961679+0.967643I$ $a=-1.051890-0.777569I$ $b=-1.169780+0.493748I$	$-0.26653+9.02592I$	0
$u=-0.961679-0.967643I$ $a=-1.051890+0.777569I$ $b=-1.169780-0.493748I$	$-0.26653-9.02592I$	0
$u=-1.147810+0.756870I$ $a=1.301440+0.352111I$ $b=1.307180-0.434278I$	$-7.72980+3.10750I$	0
$u=-1.147810-0.756870I$ $a=1.301440-0.352111I$ $b=1.307180+0.434278I$	$-7.72980-3.10750I$	0
$u=0.990199+0.985383I$ $a=0.725232-0.945815I$ $b=1.009300+0.355900I$	$-3.00354-3.38830I$	0
$u=0.990199-0.985383I$ $a=0.725232+0.945815I$ $b=1.009300-0.355900I$	$-3.00354+3.38830I$	0
$u=0.448641+1.334150I$ $a=0.946793-0.143219I$ $b=1.202480-0.257369I$	$-3.31101+6.60026I$	0
$u=0.448641-1.334150I$ $a=0.946793+0.143219I$ $b=1.202480+0.257369I$	$-3.31101-6.60026I$	0
$u=0.129462+0.552946I$ $a=-3.05058+1.94389I$ $b=-0.891064-0.407435I$	$6.00057-5.23295I$	$1.84873+7.74629I$
$u=0.129462-0.552946I$ $a=-3.05058-1.94389I$ $b=-0.891064+0.407435I$	$6.00057+5.23295I$	$1.84873-7.74629I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.89995+1.13098I$ $a=-1.092970-0.358507I$ $b=-1.30794+0.71230I$	$1.45825+7.97801I$	0
$u=-0.89995-1.13098I$ $a=-1.092970+0.358507I$ $b=-1.30794-0.71230I$	$1.45825-7.97801I$	0
$u=0.74020+1.24770I$ $a=-0.821261+0.541383I$ $b=-1.242840-0.407682I$	$-3.31101-6.60026I$	0
$u=0.74020-1.24770I$ $a=-0.821261-0.541383I$ $b=-1.242840+0.407682I$	$-3.31101+6.60026I$	0
$u=-0.494355+0.204787I$ $a=0.356530+0.195010I$ $b=-0.057146+1.136030I$	$-3.17611-1.97793I$	$-14.9748-1.5830I$
$u=-0.494355-0.204787I$ $a=0.356530-0.195010I$ $b=-0.057146-1.136030I$	$-3.17611+1.97793I$	$-14.9748+1.5830I$
$u=0.41895+1.45466I$ $a=-0.281617-0.119487I$ $b=-0.413054+0.357878I$	$2.28409-3.58575I$	0
$u=0.41895-1.45466I$ $a=-0.281617+0.119487I$ $b=-0.413054-0.357878I$	$2.28409+3.58575I$	0
$u=1.17563+0.96053I$ $a=-1.101820+0.441791I$ $b=-1.106580-0.348173I$	$-3.17392-4.40270I$	0
$u=1.17563-0.96053I$ $a=-1.101820-0.441791I$ $b=-1.106580+0.348173I$	$-3.17392+4.40270I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.144405+0.450720I$ $a=\ \ 3.89399+2.43715I$ $b=\ \ 0.925254-0.418220I$	$2.40959+11.44890I$	$-1.70053-10.31542I$
$u=-0.144405-0.450720I$ $a=\ \ 3.89399-2.43715I$ $b=\ \ 0.925254+0.418220I$	$2.40959-11.44890I$	$-1.70053+10.31542I$
$u=\ \ 0.87831+1.25741I$ $a=\ \ 1.132530-0.284190I$ $b=\ \ 1.44157+0.65642I$	$1.05957-10.04140I$	0
$u=\ \ 0.87831-1.25741I$ $a=\ \ 1.132530+0.284190I$ $b=\ \ 1.44157-0.65642I$	$1.05957+10.04140I$	0
$u=\ \ 1.17486+0.98749I$ $a=-1.61460+0.21853I$ $b=-1.010390-0.366048I$	$0.58899-6.83774I$	0
$u=\ \ 1.17486-0.98749I$ $a=-1.61460-0.21853I$ $b=-1.010390+0.366048I$	$0.58899+6.83774I$	0
$u=-1.11980+1.07506I$ $a=-1.39892-0.38174I$ $b=-1.30716+0.61211I$	$2.40959+11.44890I$	0
$u=-1.11980-1.07506I$ $a=-1.39892+0.38174I$ $b=-1.30716-0.61211I$	$2.40959-11.44890I$	0
$u=\ \ 1.40089+0.76880I$ $a=-1.165290+0.216440I$ $b=-1.127600-0.656228I$	$-1.37438-5.03809I$	0
$u=\ \ 1.40089-0.76880I$ $a=-1.165290-0.216440I$ $b=-1.127600+0.656228I$	$-1.37438+5.03809I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.58037+0.26664I$ $a=-1.311870+0.166164I$ $b=-0.723762+0.302661I$	$3.17421+0.38606I$	0
$u=-1.58037-0.26664I$ $a=-1.311870-0.166164I$ $b=-0.723762-0.302661I$	$3.17421-0.38606I$	0
$u=\ \ 0.396540$ $a=-1.29887$ $b=\ \ 0.620446$	-1.56136	-7.63810
$u=-0.037201+0.332227I$ $a=\ \ 1.78667-3.78999I$ $b=\ \ 0.578478+0.585209I$	$3.17421+0.38606I$	$5.14225-2.45135I$
$u=-0.037201-0.332227I$ $a=\ \ 1.78667+3.78999I$ $b=\ \ 0.578478-0.585209I$	$3.17421-0.38606I$	$5.14225+2.45135I$
$u=-0.319659$ $a=\ \ 2.92467$ $b=\ \ 1.10789$	-1.56136	-7.63810
$u=\ \ 1.20015+1.18066I$ $a=\ \ 1.335850-0.225523I$ $b=\ \ 1.270010+0.582561I$	$3.38091-7.67122I$	0
$u=\ \ 1.20015-1.18066I$ $a=\ \ 1.335850+0.225523I$ $b=\ \ 1.270010-0.582561I$	$3.38091+7.67122I$	0
$u=-0.92322+1.40919I$ $a=-0.760983-0.333462I$ $b=-0.755945-0.396817I$	$3.01460-2.93673I$	0
$u=-0.92322-1.40919I$ $a=-0.760983+0.333462I$ $b=-0.755945+0.396817I$	$3.01460+2.93673I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.175473+0.216791I$ $a=-4.72010-0.88886I$ $b=-0.982810+0.647353I$	$3.01460+2.93673I$	$2.71064-4.31841I$
$u=-0.175473-0.216791I$ $a=-4.72010+0.88886I$ $b=-0.982810-0.647353I$	$3.01460-2.93673I$	$2.71064+4.31841I$
$u=-1.26065+1.24332I$ $a=1.227040+0.294446I$ $b=1.27312-0.62375I$	$4.8547+14.2006I$	0
$u=-1.26065-1.24332I$ $a=1.227040-0.294446I$ $b=1.27312+0.62375I$	$4.8547-14.2006I$	0
$u=-0.183442+0.050314I$ $a=-2.15551+3.44438I$ $b=-1.56584+0.08837I$	$1.18305+3.04202I$	$-7.30430-3.73323I$
$u=-0.183442-0.050314I$ $a=-2.15551-3.44438I$ $b=-1.56584-0.08837I$	$1.18305-3.04202I$	$-7.30430+3.73323I$
$u=0.157988+0.083431I$ $a=2.49309+2.31984I$ $b=2.01787-0.14443I$	$-1.73688-7.47793I$	$-21.7278+13.8856I$
$u=0.157988-0.083431I$ $a=2.49309-2.31984I$ $b=2.01787+0.14443I$	$-1.73688+7.47793I$	$-21.7278-13.8856I$
$u=-0.04459+1.87707I$ $a=0.317304-0.063687I$ $b=0.834718+0.221281I$	$1.07069-4.78696I$	0
$u=-0.04459-1.87707I$ $a=0.317304+0.063687I$ $b=0.834718-0.221281I$	$1.07069+4.78696I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.37917 + 1.51463I$ $a = -1.157720 + 0.289268I$ $b = -1.162460 - 0.485021I$	$-1.73688 - 7.47793I$	0
$u = 1.37917 - 1.51463I$ $a = -1.157720 - 0.289268I$ $b = -1.162460 + 0.485021I$	$-1.73688 + 7.47793I$	0
$u = 2.08788 + 0.25972I$ $a = -1.243040 - 0.304914I$ $b = -0.805807 - 0.214546I$	$1.45825 + 7.97801I$	0
$u = 2.08788 - 0.25972I$ $a = -1.243040 + 0.304914I$ $b = -0.805807 + 0.214546I$	$1.45825 - 7.97801I$	0
$u = 1.85592 + 1.19470I$ $a = 1.231730 + 0.024229I$ $b = 1.051450 + 0.384190I$	$2.91739 - 5.62744I$	0
$u = 1.85592 - 1.19470I$ $a = 1.231730 - 0.024229I$ $b = 1.051450 - 0.384190I$	$2.91739 + 5.62744I$	0
$u = -1.97170 + 0.99606I$ $a = 1.339360 - 0.085014I$ $b = 0.941989 - 0.287213I$	$5.04372 - 0.96008I$	0
$u = -1.97170 - 0.99606I$ $a = 1.339360 + 0.085014I$ $b = 0.941989 + 0.287213I$	$5.04372 + 0.96008I$	0
$u = -0.86426 + 2.62514I$ $a = 0.723391 + 0.070268I$ $b = 0.761110 + 0.158550I$	$5.85317 - 3.26425I$	0
$u = -0.86426 - 2.62514I$ $a = 0.723391 - 0.070268I$ $b = 0.761110 - 0.158550I$	$5.85317 + 3.26425I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 2.07272 + 2.12436I$		
$a = -0.849224 + 0.216330I$	$1.05957 + 10.04140I$	0
$b = -0.939027 + 0.212548I$		
$u = \quad 2.07272 - 2.12436I$		
$a = -0.849224 - 0.216330I$	$1.05957 - 10.04140I$	0
$b = -0.939027 - 0.212548I$		

III. $I_3^u = \langle -5.91\times 10^{45}u^{25} + 3.90\times 10^{46}u^{24} + \cdots + 1.44\times 10^{48}b - 5.25\times 10^{46},\ -7.34\times 10^{46}u^{25} + 5.11\times 10^{47}u^{24} + \cdots + 2.59\times 10^{49}a - 7.69\times 10^{48},\ u^{26} - 5u^{25} + \cdots + 72u + 72\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.00283003u^{25} - 0.0196776u^{24} + \cdots - 0.171032u + 0.296347 \\ 0.00410083u^{25} - 0.0270858u^{24} + \cdots + 0.896673u + 0.0364488 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.00127080u^{25} + 0.00740817u^{24} + \cdots - 1.06770u + 0.259898 \\ 0.00410083u^{25} - 0.0270858u^{24} + \cdots + 0.896673u + 0.0364488 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.00337665u^{25} - 0.0228206u^{24} + \cdots - 0.186628u + 0.372249 \\ 0.00463676u^{25} - 0.0276966u^{24} + \cdots + 1.06545u + 0.539840 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.00198736u^{25} + 0.00969786u^{24} + \cdots - 0.111126u - 0.0881769 \\ 0.00279986u^{25} - 0.0117111u^{24} + \cdots + 1.00084u + 0.467511 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.00548912u^{25} - 0.0331545u^{24} + \cdots - 0.217562u + 0.496326 \\ 0.000480416u^{25} - 0.00619053u^{24} + \cdots - 0.164514u + 0.204863 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.000332728u^{25} - 0.00314793u^{24} + \cdots - 1.49622u - 1.24392 \\ 0.00682593u^{25} - 0.0384138u^{24} + \cdots - 1.54824u - 1.77725 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.00820086u^{25} + 0.0379672u^{24} + \cdots - 1.13406u - 0.153281 \\ -0.0166543u^{25} + 0.0765172u^{24} + \cdots - 1.61999u - 0.637907 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.00112518u^{25} + 0.00798859u^{24} + \cdots + 0.175461u + 0.455177 \\ 0.00312682u^{25} - 0.0138912u^{24} + \cdots + 1.05302u + 1.03415 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.0106336u^{25} + 0.0551673u^{24} + \cdots - 2.17842u - 0.748964 \\ -0.00673065u^{25} + 0.0369688u^{24} + \cdots - 2.28784u - 0.162962 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -0.0538162u^{25} + 0.297083u^{24} + \cdots - 1.49417u - 5.56503$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{26} - 5u^{25} + \cdots + 72u + 72$
c_2, c_4	$36(36u^{26} - 64u^{24} + \cdots + 3u + 1)$
c_3, c_{12}	$u^{26} + u^{25} + \cdots - u + 1$
c_5, c_{11}	$36(36u^{26} + 512u^{24} + \cdots + 1550u^2 + 113)$
c_7	$(u^{13} + 6u^{12} + \cdots + 3u - 1)^2$
c_8, c_{10}	$u^{26} - u^{25} + \cdots + u + 1$
c_9	$(u^{13} + 2u^{12} + \cdots + 11u + 2)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{26} + 11y^{25} + \cdots + 10944y + 5184$
c_2, c_4	$1296(1296y^{26} - 4608y^{25} + \cdots - y + 1)$
c_3, c_8, c_{10} c_{12}	$y^{26} - 19y^{25} + \cdots - 19y + 1$
c_5, c_{11}	$1296(36y^{13} + 512y^{12} + \cdots + 1550y + 113)^2$
c_7	$(y^{13} - 4y^{12} + \cdots + 3y - 1)^2$
c_9	$(y^{13} - 8y^{12} + \cdots + 21y - 4)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.818792 + 0.588791I$ $a = 1.54607 - 0.01755I$ $b = 1.105830 + 0.603431I$	$2.07800 - 4.16695I$	$-0.78590 + 6.73016I$
$u = 0.818792 - 0.588791I$ $a = 1.54607 + 0.01755I$ $b = 1.105830 - 0.603431I$	$2.07800 + 4.16695I$	$-0.78590 - 6.73016I$
$u = -0.346674 + 0.961533I$ $a = -0.258359 - 0.241943I$ $b = 0.024817 - 1.263200I$	$5.63220 + 2.75504I$	$-0.857086 - 0.087467I$
$u = -0.346674 - 0.961533I$ $a = -0.258359 + 0.241943I$ $b = 0.024817 + 1.263200I$	$5.63220 - 2.75504I$	$-0.857086 + 0.087467I$
$u = -0.843567 + 0.120573I$ $a = -2.01435 + 0.02026I$ $b = -0.525765 + 0.186753I$	2.25263	$-4.75779 + 0.I$
$u = -0.843567 - 0.120573I$ $a = -2.01435 - 0.02026I$ $b = -0.525765 - 0.186753I$	2.25263	$-4.75779 + 0.I$
$u = 0.643283 + 0.443438I$ $a = 1.47082 + 0.06023I$ $b = 1.43845 + 0.73280I$	$1.75210 - 3.87661I$	$-5.92175 + 8.27031I$
$u = 0.643283 - 0.443438I$ $a = 1.47082 - 0.06023I$ $b = 1.43845 - 0.73280I$	$1.75210 + 3.87661I$	$-5.92175 - 8.27031I$
$u = 0.082526 + 1.304870I$ $a = -0.0965806 + 0.1024740I$ $b = -0.588688 - 0.448640I$	$2.07800 - 4.16695I$	$-0.78590 + 6.73016I$
$u = 0.082526 - 1.304870I$ $a = -0.0965806 - 0.1024740I$ $b = -0.588688 + 0.448640I$	$2.07800 + 4.16695I$	$-0.78590 - 6.73016I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.060880 + 0.855857I$ $a = -0.872778 + 0.818917I$ $b = -1.012320 - 0.339179I$	$-3.10825 - 2.94174I$	$-11.87764 - 0.77447I$
$u = 1.060880 - 0.855857I$ $a = -0.872778 - 0.818917I$ $b = -1.012320 + 0.339179I$	$-3.10825 + 2.94174I$	$-11.87764 + 0.77447I$
$u = -0.055307 + 0.619318I$ $a = -1.51632 - 0.26589I$ $b = -1.79863 + 0.08354I$	$-1.43134 + 7.41780I$	$3.89732 - 7.81880I$
$u = -0.055307 - 0.619318I$ $a = -1.51632 + 0.26589I$ $b = -1.79863 - 0.08354I$	$-1.43134 - 7.41780I$	$3.89732 + 7.81880I$
$u = -0.90196 + 1.14405I$ $a = -1.189760 - 0.345469I$ $b = -1.38118 + 0.68005I$	$1.35320 + 9.54720I$	$-0.35383 - 4.72435I$
$u = -0.90196 - 1.14405I$ $a = -1.189760 + 0.345469I$ $b = -1.38118 - 0.68005I$	$1.35320 - 9.54720I$	$-0.35383 + 4.72435I$
$u = -0.432859 + 0.312166I$ $a = 1.67415 + 0.04406I$ $b = 0.907337 + 0.774765I$	$-3.10825 + 2.94174I$	$-11.87764 + 0.77447I$
$u = -0.432859 - 0.312166I$ $a = 1.67415 - 0.04406I$ $b = 0.907337 - 0.774765I$	$-3.10825 - 2.94174I$	$-11.87764 - 0.77447I$
$u = 0.21989 + 1.48866I$ $a = 0.446786 + 0.350595I$ $b = 0.241470 - 0.201081I$	$1.75210 - 3.87661I$	$-5.92175 + 8.27031I$
$u = 0.21989 - 1.48866I$ $a = 0.446786 - 0.350595I$ $b = 0.241470 + 0.201081I$	$1.75210 + 3.87661I$	$-5.92175 - 8.27031I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.27926 + 1.55184I$ $a = 1.162720 - 0.260867I$ $b = 1.194910 + 0.453756I$	$-1.43134 - 7.41780I$	$3.89732 + 7.81880I$
$u = 1.27926 - 1.55184I$ $a = 1.162720 + 0.260867I$ $b = 1.194910 - 0.453756I$	$-1.43134 + 7.41780I$	$3.89732 - 7.81880I$
$u = -0.89322 + 1.95341I$ $a = 0.617507 + 0.397322I$ $b = 0.753866 + 0.045956I$	$5.63220 - 2.75504I$	0
$u = -0.89322 - 1.95341I$ $a = 0.617507 - 0.397322I$ $b = 0.753866 - 0.045956I$	$5.63220 + 2.75504I$	0
$u = 1.86895 + 1.17491I$ $a = -1.081020 + 0.464007I$ $b = -0.860091 + 0.185425I$	$1.35320 + 9.54720I$	0
$u = 1.86895 - 1.17491I$ $a = -1.081020 - 0.464007I$ $b = -0.860091 - 0.185425I$	$1.35320 - 9.54720I$	0

IV.

$\boldsymbol{I_4^u = \langle -u^4-2u^3-2u^2+b+u+2,\ u^4+u^3+2u^2+a-u,\ u^5+u^4+u^3-2u^2-u+1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

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

$$a_{10} = \begin{pmatrix} -1 \\ 2u^4 + 3u^3 + 3u^2 - 2u - 3 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^4 + u^3 + 2u^2 - u \\ -u^4 - 2u^3 - 3u^2 + u + 2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u \\ u^4 + u^3 + 2u^2 - 2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ 2u^4 + 3u^3 + 4u^2 - u - 3 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} 0 \\ 2u^4 + 3u^3 + 4u^2 - u - 3 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^4 + u^3 + 2u^2 - u \\ u^4 + 2u^3 + 2u^2 - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 2u^4 + 2u^3 + 3u^2 - 9u - 15$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^5 + y^4 + 3y^3 - 8y^2 + 5y - 1$
c_2, c_4	$y^5 + y^4 - y^3 - 4y^2 - 3y - 1$
c_3, c_8, c_{10} c_{12}	$y^5 - 4y^4 + 8y^3 - 9y^2 + 6y - 1$
c_5, c_{11}	y^5
c_7	$y^5 + 5y^4 + 3y^3 - 31y^2 - 2y - 1$
c_9	$y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.821196$ $a=-2.07090$ $b=-0.482881$	2.24708	-5.78420
$u=\ \ 0.688402+0.106340I$ $a=-0.732208-0.471915I$ $b=-0.964913+0.621896I$	$-2.50012+0.60716I$	$-18.8170+0.0530I$
$u=\ \ 0.688402-0.106340I$ $a=-0.732208+0.471915I$ $b=-0.964913-0.621896I$	$-2.50012-0.60716I$	$-18.8170-0.0530I$
$u=-0.77780+1.38013I$ $a=\ \ 0.767660+0.216900I$ $b=\ \ 1.206350-0.340852I$	$-5.20316+6.77491I$	$-9.79092-7.94775I$
$u=-0.77780-1.38013I$ $a=\ \ 0.767660-0.216900I$ $b=\ \ 1.206350+0.340852I$	$-5.20316-6.77491I$	$-9.79092+7.94775I$

V. $I_1^v = \langle a,\ b-1,\ v-1 \rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -1 \\ 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ -2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v =$ 1.00000		
$a =$ 0	-1.64493	-6.00000
$b =$ 1.00000		

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_6	$u(u^5+u^4+\cdots-u+1)(u^{26}-5u^{25}+\cdots+72u+72)$ $\cdot(u^{35}+u^{34}+\cdots-72u-24)(u^{122}+10u^{121}+\cdots+1165u-125)$
c_2, c_4	$3600(u+1)(u^5+u^4+\cdots+u+1)(36u^{26}-64u^{24}+\cdots+3u+1)$ $\cdot(4u^{35}-16u^{34}+\cdots+6u-1)(25u^{122}+75u^{121}+\cdots+7u+1)$
c_3, c_{12}	$(u+1)(u^5-2u^3-u^2+2u+1)(u^{26}+u^{25}+\cdots-u+1)$ $\cdot(u^{35}-u^{34}+\cdots+13u+1)(u^{122}-36u^{120}+\cdots+929u+103)$
c_5, c_{11}	$3600u^5(u+1)(36u^{26}+512u^{24}+\cdots+1550u^2+113)$ $\cdot(4u^{35}-8u^{34}+\cdots-448u^2-128)(5u^{61}+u^{60}+\cdots-2062u+569)^2$
c_7	$u(u^5-3u^4+\cdots+4u-1)(u^{13}+6u^{12}+\cdots+3u-1)^2$ $\cdot(u^{35}-10u^{34}+\cdots+18240u-2880)$ $\cdot(u^{61}+8u^{60}+\cdots+6810u+724)^2$
c_8, c_{10}	$(u+1)(u^5-2u^3+u^2+2u-1)(u^{26}-u^{25}+\cdots+u+1)$ $\cdot(u^{35}-u^{34}+\cdots+13u+1)(u^{122}-36u^{120}+\cdots+929u+103)$
c_9	$(u+1)(u^5-3u^4+\cdots-u+1)(u^{13}+2u^{12}+\cdots+11u+2)^2$ $\cdot(u^{35}+5u^{34}+\cdots+1166u+268)$ $\cdot(u^{61}-18u^{59}+\cdots-10865u+9784)^2$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y(y^5+y^4+\cdots+5y-1)(y^{26}+11y^{25}+\cdots+10944y+5184)$ $\cdot(y^{35}-3y^{34}+\cdots+11136y-576)$ $\cdot(y^{122}+18y^{121}+\cdots-1184975y+15625)$
c_2, c_4	$12960000(y-1)(y^5+y^4-y^3-4y^2-3y-1)$ $\cdot(1296y^{26}-4608y^{25}+\cdots-y+1)(16y^{35}+160y^{34}+\cdots-20y-1)$ $\cdot(625y^{122}-5675y^{121}+\cdots-29y+1)$
c_3, c_8, c_{10} c_{12}	$(y-1)(y^5-4y^4+\cdots+6y-1)(y^{26}-19y^{25}+\cdots-19y+1)$ $\cdot(y^{35}-23y^{34}+\cdots+217y-1)$ $\cdot(y^{122}-72y^{121}+\cdots-412519y+10609)$
c_5, c_{11}	$12960000y^5(y-1)(36y^{13}+512y^{12}+\cdots+1550y+113)^2$ $\cdot(16y^{35}+384y^{34}+\cdots-114688y-16384)$ $\cdot(25y^{61}+1199y^{60}+\cdots-3158812y-323761)^2$
c_7	$y(y^5+5y^4+\cdots-2y-1)(y^{13}-4y^{12}+\cdots+3y-1)^2$ $\cdot(y^{35}+8y^{34}+\cdots-2390400y-8294400)$ $\cdot(y^{61}-28y^{60}+\cdots-1108164y-524176)^2$
c_9	$(y-1)(y^5-y^4+\cdots+3y-1)(y^{13}-8y^{12}+\cdots+21y-4)^2$ $\cdot(y^{35}-9y^{34}+\cdots+179820y-71824)$ $\cdot(y^{61}-36y^{60}+\cdots+2341110001y-95726656)^2$