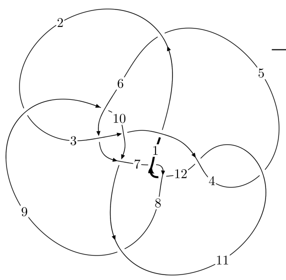
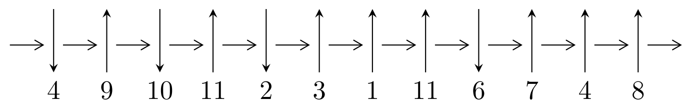
$12n_{0879}$ ($K12n_{0879}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$
\begin{aligned}
I_1^u &= \langle 2.18451\times10^{18}u^{23} - 3.11362\times10^{18}u^{22} + \cdots + 1.10562\times10^{17}b + 1.21069\times10^{18},\ a-1,\\
&\quad 3u^{24} - 3u^{23} + \cdots + u + 1\rangle\\
I_2^u &= \langle 2.45436\times10^{314}u^{67} - 2.51900\times10^{313}u^{66} + \cdots + 3.33912\times10^{315}b - 2.97612\times10^{315},\\
&\quad 5.14656\times10^{314}u^{67} + 3.56618\times10^{314}u^{66} + \cdots + 6.67823\times10^{315}a - 2.19657\times10^{315},\\
&\quad 8u^{68} + 40u^{66} + \cdots - 270u + 50\rangle\\
I_3^u &= \langle 83485020528u^{16} - 39219382232u^{15} + \cdots + 28622039510b + 39645537732,\ a+1,\\
&\quad 4u^{17} - 4u^{16} + \cdots + 3u - 1\rangle\\
I_4^u &= \langle -18u^3 + 24u^2 + b - 21u + 8,\ -30u^3 + 42u^2 + 2a - 41u + 17,\ 6u^4 - 12u^3 + 13u^2 - 8u + 2\rangle
\end{aligned}
$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 113 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. $I^u_1 = \langle 2.18 \times 10^{18} u^{23} - 3.11 \times 10^{18} u^{22} + \cdots + 1.11 \times 10^{17} b + 1.21 \times 10^{18},\ a - 1,\ 3u^{24} - 3u^{23} + \cdots + u + 1 \rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 1 \\ -19.7583u^{23} + 28.1618u^{22} + \cdots + 11.4162u - 10.9504 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -19.7583u^{23} + 28.1618u^{22} + \cdots + 11.4162u - 9.95035 \\ -19.7583u^{23} + 28.1618u^{22} + \cdots + 11.4162u - 10.9504 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -3.47015u^{23} + 5.78314u^{22} + \cdots - 3.89407u + 1.41709 \\ -11.8736u^{23} + 19.3044u^{22} + \cdots + 0.470185u - 5.16901 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u \\ 8.40348u^{23} - 13.5213u^{22} + \cdots - 3.36425u + 6.58610 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -5.11782u^{23} + 8.44910u^{22} + \cdots + 3.78494u - 1.80116 \\ 2.31299u^{23} - 4.48479u^{22} + \cdots + 2.57381u + 1.15672 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.316894u^{23} - 0.861176u^{22} + \cdots + 5.76323u + 0.465985 \\ 5.20333u^{23} - 8.76032u^{22} + \cdots + 2.47662u + 2.65983 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -8.28934u^{23} + 7.65842u^{22} + \cdots + 6.46724u - 3.91525 \\ -27.1673u^{23} + 42.5966u^{22} + \cdots + 5.38232u - 13.8780 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -18.0653u^{23} + 25.7028u^{22} + \cdots + 5.14347u - 6.60098 \\ -18.6559u^{23} + 29.0833u^{22} + \cdots + 3.56041u - 6.94383 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 13.1720u^{23} - 21.8361u^{22} + \cdots + 3.80961u + 2.98092 \\ 17.5768u^{23} - 28.7733u^{22} + \cdots - 1.58709u + 7.28605 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{10401411537800859069}{110561902854140359}u^{23} + \frac{17169214705690460772}{110561902854140359}u^{22} + \cdots + \frac{24972599995252940046}{110561902854140359}u - \frac{61905964059727124 60}{110561902854140359}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$3(3u^{24} - 3u^{23} + \cdots - 19u + 1)$
c_2, c_{10}	$u^{24} + u^{23} + \cdots - 3u - 3$
c_3, c_9	$3(3u^{24} + 3u^{23} + \cdots - u + 1)$
c_4, c_{11}	$3(3u^{24} - 3u^{23} + \cdots + 2u + 1)$
c_5	$u^{24} - 3u^{23} + \cdots - 33u + 3$
c_6	$u^{24} - 17u^{23} + \cdots + 448u - 64$
c_7, c_{12}	$u^{24} - 11u^{23} + \cdots - 192u + 32$
c_8	$9(9u^{24} + 168u^{23} + \cdots - 30720u - 4096)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$9(9y^{24} + 201y^{23} + \cdots - 165y + 1)$
c_2, c_{10}	$y^{24} - 5y^{23} + \cdots + 21y + 9$
c_3, c_9	$9(9y^{24} - 51y^{23} + \cdots - 17y + 1)$
c_4, c_{11}	$9(9y^{24} - 267y^{23} + \cdots - 18y + 1)$
c_5	$y^{24} + 11y^{23} + \cdots - 69y + 9$
c_6	$y^{24} + 7y^{23} + \cdots - 36864y + 4096$
c_7, c_{12}	$y^{24} + 9y^{23} + \cdots + 4608y + 1024$
c_8	$81(81y^{24} - 558y^{23} + \cdots - 4.40402 \times 10^7 y + 1.67772 \times 10^7)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_1	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.532676 + 0.913923I$ $a = 1.00000$ $b = -0.790735 + 0.557429I$	$0.60856 - 1.63023I$	$4.46172 + 2.19213I$
$u = 0.532676 - 0.913923I$ $a = 1.00000$ $b = -0.790735 - 0.557429I$	$0.60856 + 1.63023I$	$4.46172 - 2.19213I$
$u = -0.706049 + 0.814568I$ $a = 1.00000$ $b = -1.19229 - 0.96975I$	$3.12317 + 4.41220I$	$8.88741 - 6.41775I$
$u = -0.706049 - 0.814568I$ $a = 1.00000$ $b = -1.19229 + 0.96975I$	$3.12317 - 4.41220I$	$8.88741 + 6.41775I$
$u = 1.077440 + 0.425171I$ $a = 1.00000$ $b = -0.372534 + 0.567998I$	$0.51482 - 4.14942I$	$0.15057 + 3.98630I$
$u = 1.077440 - 0.425171I$ $a = 1.00000$ $b = -0.372534 - 0.567998I$	$0.51482 + 4.14942I$	$0.15057 - 3.98630I$
$u = 0.799855 + 0.085298I$ $a = 1.00000$ $b = 0.479827 + 0.465785I$	$-2.57731 + 3.83319I$	$9.74735 - 1.51258I$
$u = 0.799855 - 0.085298I$ $a = 1.00000$ $b = 0.479827 - 0.465785I$	$-2.57731 - 3.83319I$	$9.74735 + 1.51258I$
$u = 0.968057 + 0.775960I$ $a = 1.00000$ $b = -1.25250 + 1.11203I$	$-2.68123 - 8.44569I$	$4.87208 + 6.96290I$
$u = 0.968057 - 0.775960I$ $a = 1.00000$ $b = -1.25250 - 1.11203I$	$-2.68123 + 8.44569I$	$4.87208 - 6.96290I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.712863$ $a=1.00000$ $b=0.384370$	1.52481	8.20500
$u=-0.899468+0.933589I$ $a=1.00000$ $b=-0.534071-0.239788I$	$1.44603-1.35473I$	$0.81221+4.49282I$
$u=-0.899468-0.933589I$ $a=1.00000$ $b=-0.534071+0.239788I$	$1.44603+1.35473I$	$0.81221-4.49282I$
$u=-0.603700+0.327165I$ $a=1.00000$ $b=-0.64481+1.66099I$	$3.38556+9.86546I$	$0.31403-9.36723I$
$u=-0.603700-0.327165I$ $a=1.00000$ $b=-0.64481-1.66099I$	$3.38556-9.86546I$	$0.31403+9.36723I$
$u=-0.676903$ $a=1.00000$ $b=-1.90202$	4.28877	-4.23850
$u=-0.502333+0.277465I$ $a=1.00000$ $b=-0.22982-1.47598I$	$-4.98881+0.86817I$	$-1.31263-8.38596I$
$u=-0.502333-0.277465I$ $a=1.00000$ $b=-0.22982+1.47598I$	$-4.98881-0.86817I$	$-1.31263+8.38596I$
$u=0.417523+0.252999I$ $a=1.00000$ $b=-0.67427-1.95408I$	$4.92870-2.24110I$	$-2.79694+9.86890I$
$u=0.417523-0.252999I$ $a=1.00000$ $b=-0.67427+1.95408I$	$4.92870+2.24110I$	$-2.79694-9.86890I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.13728 + 1.04931I$ $a = \quad 1.00000$ $b = -1.26137 - 0.99901I$	$6.84073 + 11.26200I$	$6.34322 - 5.87609I$
$u = -1.13728 - 1.04931I$ $a = \quad 1.00000$ $b = -1.26137 + 0.99901I$	$6.84073 - 11.26200I$	$6.34322 + 5.87609I$
$u = \quad 1.24817 + 1.05440I$ $a = \quad 1.00000$ $b = -1.26861 + 0.96825I$	$5.4097 - 18.4597I$	$4.00000 + 9.52264I$
$u = \quad 1.24817 - 1.05440I$ $a = \quad 1.00000$ $b = -1.26861 - 0.96825I$	$5.4097 + 18.4597I$	$4.00000 - 9.52264I$

II. $I_2^u = \langle 2.45\times10^{314}u^{67} - 2.52\times10^{313}u^{66} + \cdots + 3.34\times10^{315}b - 2.98\times10^{315},\ 5.15\times10^{314}u^{67} + 3.57\times10^{314}u^{66} + \cdots + 6.68\times10^{315}a - 2.20\times10^{315},\ 8u^{68} + 40u^{66} + \cdots - 270u + 50\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-0.0770647u^{67} - 0.0534000u^{66} + \cdots - 16.8229u + 0.328914\\-0.0735034u^{67} + 0.00754390u^{66} + \cdots + 2.00619u + 0.891289\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-0.150568u^{67} - 0.0458561u^{66} + \cdots - 14.8167u + 1.22020\\-0.0735034u^{67} + 0.00754390u^{66} + \cdots + 2.00619u + 0.891289\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0.994747u^{67} + 0.163784u^{66} + \cdots + 31.3491u - 25.1360\\0.0657230u^{67} - 0.00810655u^{66} + \cdots - 4.39556u - 0.739629\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0.893408u^{67} + 0.167359u^{66} + \cdots + 39.7338u - 23.1675\\0.0356157u^{67} + 0.00453081u^{66} + \cdots - 1.98921u - 1.22896\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-0.482326u^{67} - 0.145242u^{66} + \cdots - 39.3734u + 10.6341\\-0.0384659u^{67} - 0.0181689u^{66} + \cdots - 0.0483855u + 1.94402\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-0.469780u^{67} - 0.153990u^{66} + \cdots - 37.5345u + 11.6703\\-0.0365482u^{67} - 0.0214924u^{66} + \cdots - 0.422063u + 1.99869\end{pmatrix}$$
$$a_5 = \begin{pmatrix}1.82905u^{67} + 0.339241u^{66} + \cdots + 48.1219u - 49.9002\\-0.0247642u^{67} - 0.00963364u^{66} + \cdots - 0.636979u - 0.894487\end{pmatrix}$$
$$a_8 = \begin{pmatrix}0.699429u^{67} + 0.125955u^{66} + \cdots + 11.4056u - 22.0627\\-0.0339967u^{67} - 0.00175580u^{66} + \cdots + 0.286722u + 0.383406\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-0.955082u^{67} - 0.162043u^{66} + \cdots - 27.6430u + 24.8520\\-0.0707061u^{67} + 0.0132240u^{66} + \cdots + 4.20640u + 0.728749\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.623974u^{67} + 0.335986u^{66} + \cdots + 24.1020u - 21.7293$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$8(8u^{68} + 172u^{66} + \cdots + 1.91280 \times 10^9 u + 3.08885 \times 10^8)$
c_2, c_{10}	$2(2u^{68} - 7u^{66} + \cdots + 10344u + 1196)$
c_3, c_9	$8(8u^{68} + 40u^{66} + \cdots + 270u + 50)$
c_4, c_{11}	$8(8u^{68} - 184u^{66} + \cdots + 3891182u + 266986)$
c_5	$2(2u^{68} + 21u^{66} + \cdots - 27024u + 18932)$
c_6	$(u^{34} + 8u^{33} + \cdots + 10u + 2)^2$
c_7, c_{12}	$(u^{34} + 6u^{33} + \cdots + 6u + 2)^2$
c_8	$16(4u^{34} - 54u^{33} + \cdots + 2256u + 523)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$64(64y^{68} + 2752y^{67} + \cdots - 2.42039 \times 10^{16}y + 9.54099 \times 10^{16})$
c_2, c_{10}	$4(4y^{68} - 28y^{67} + \cdots - 1.47963 \times 10^{7}y + 1430416)$
c_3, c_9	$64(64y^{68} + 640y^{67} + \cdots - 109200y + 2500)$
c_4, c_{11}	$64(64y^{68} - 2944y^{67} + \cdots - 3.77367 \times 10^{12}y + 7.12815 \times 10^{10})$
c_5	$4(4y^{68} + 84y^{67} + \cdots + 2.03431 \times 10^{9}y + 3.58421 \times 10^{8})$
c_6	$(y^{34} - 4y^{33} + \cdots - 64y + 4)^2$
c_7, c_{12}	$(y^{34} + 10y^{33} + \cdots + 80y + 4)^2$
c_8	$256(16y^{34} - 524y^{33} + \cdots - 8625016y + 273529)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.468826 + 0.852869I$ $a = -0.77391 + 1.59871I$ $b = 0.693022 + 0.186434I$	$7.51890 + 2.81171I$	$10.32503 - 3.98363I$
$u = -0.468826 - 0.852869I$ $a = -0.77391 - 1.59871I$ $b = 0.693022 - 0.186434I$	$7.51890 - 2.81171I$	$10.32503 + 3.98363I$
$u = 0.995301 + 0.297202I$ $a = -0.609910 + 0.291744I$ $b = 0.649286 - 0.866728I$	$-3.82331 + 0.42771I$	$-2.75863 + 0.I$
$u = 0.995301 - 0.297202I$ $a = -0.609910 - 0.291744I$ $b = 0.649286 + 0.866728I$	$-3.82331 - 0.42771I$	$-2.75863 + 0.I$
$u = 0.680400 + 0.673865I$ $a = -0.898666 - 0.635347I$ $b = 1.09735 - 1.13898I$	$6.73817 - 0.34876I$	$9.87930 + 1.23396I$
$u = 0.680400 - 0.673865I$ $a = -0.898666 + 0.635347I$ $b = 1.09735 + 1.13898I$	$6.73817 + 0.34876I$	$9.87930 - 1.23396I$
$u = -0.183314 + 1.037870I$ $a = -0.741922 - 0.524531I$ $b = 1.09735 + 1.13898I$	$6.73817 + 0.34876I$	$9.87930 - 1.23396I$
$u = -0.183314 - 1.037870I$ $a = -0.741922 + 0.524531I$ $b = 1.09735 - 1.13898I$	$6.73817 - 0.34876I$	$9.87930 + 1.23396I$
$u = 0.799744 + 0.356609I$ $a = -0.633337 + 0.028903I$ $b = 0.724976 + 0.995650I$	$-2.27163 - 2.86243I$	$4.65330 + 7.44714I$
$u = 0.799744 - 0.356609I$ $a = -0.633337 - 0.028903I$ $b = 0.724976 - 0.995650I$	$-2.27163 + 2.86243I$	$4.65330 - 7.44714I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.525695 + 1.012530I$ $a = -0.95830 - 1.27829I$ $b = 0.719391 - 0.178386I$	$6.92940 - 9.49005I$	0
$u = 0.525695 - 1.012530I$ $a = -0.95830 + 1.27829I$ $b = 0.719391 + 0.178386I$	$6.92940 + 9.49005I$	0
$u = -0.783891 + 0.272664I$ $a = 1.81278 - 0.91048I$ $b = -0.628715 - 0.960903I$	$2.54618 + 9.70408I$	$1.30183 - 8.87741I$
$u = -0.783891 - 0.272664I$ $a = 1.81278 + 0.91048I$ $b = -0.628715 + 0.960903I$	$2.54618 - 9.70408I$	$1.30183 + 8.87741I$
$u = -0.845838 + 0.808955I$ $a = -0.940084 + 0.472817I$ $b = 1.13687 + 1.03425I$	$7.05120 + 7.79983I$	0
$u = -0.845838 - 0.808955I$ $a = -0.940084 - 0.472817I$ $b = 1.13687 - 1.03425I$	$7.05120 - 7.79983I$	0
$u = 0.124602 + 1.176870I$ $a = 1.086090 + 0.366101I$ $b = -0.709035 + 0.133102I$	$1.08787 - 1.51029I$	0
$u = 0.124602 - 1.176870I$ $a = 1.086090 - 0.366101I$ $b = -0.709035 - 0.133102I$	$1.08787 + 1.51029I$	0
$u = 0.733204 + 0.331461I$ $a = 1.74987 + 1.06963I$ $b = -0.515136 + 0.944106I$	$3.57407 - 2.76213I$	$2.69378 + 6.04053I$
$u = 0.733204 - 0.331461I$ $a = 1.74987 - 1.06963I$ $b = -0.515136 - 0.944106I$	$3.57407 + 2.76213I$	$2.69378 - 6.04053I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.056350 + 0.633111I$ $a = 0.285872 - 0.364191I$ $b = -1.132560 + 0.289085I$	$6.45659 - 2.10452I$	0
$u = -1.056350 - 0.633111I$ $a = 0.285872 + 0.364191I$ $b = -1.132560 - 0.289085I$	$6.45659 + 2.10452I$	0
$u = 0.412671 + 1.160410I$ $a = -0.848977 + 0.426994I$ $b = 1.13687 - 1.03425I$	$7.05120 - 7.79983I$	0
$u = 0.412671 - 1.160410I$ $a = -0.848977 - 0.426994I$ $b = 1.13687 + 1.03425I$	$7.05120 + 7.79983I$	0
$u = 1.201900 + 0.270973I$ $a = 0.229366 + 0.205547I$ $b = -1.330840 - 0.425024I$	$5.18347 - 3.76978I$	0
$u = 1.201900 - 0.270973I$ $a = 0.229366 - 0.205547I$ $b = -1.330840 + 0.425024I$	$5.18347 + 3.76978I$	0
$u = -0.693751 + 0.109107I$ $a = -1.33429 - 0.63824I$ $b = 0.649286 - 0.866728I$	$-3.82331 + 0.42771I$	$-2.75863 + 0.63001I$
$u = -0.693751 - 0.109107I$ $a = -1.33429 + 0.63824I$ $b = 0.649286 + 0.866728I$	$-3.82331 - 0.42771I$	$-2.75863 - 0.63001I$
$u = -0.055320 + 0.688385I$ $a = 0.213319 + 0.886260I$ $b = 0.23733 - 1.44997I$	$-4.86346 + 0.65866I$	$2.97197 - 10.93905I$
$u = -0.055320 - 0.688385I$ $a = 0.213319 - 0.886260I$ $b = 0.23733 + 1.44997I$	$-4.86346 - 0.65866I$	$2.97197 + 10.93905I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.077309+0.640233I$ $a=\ 3.17254-1.64334I$ $b=-0.339874+0.241600I$	$-0.169612-0.106946I$	$2.05478-7.99940I$
$u=-0.077309-0.640233I$ $a=\ 3.17254+1.64334I$ $b=-0.339874-0.241600I$	$-0.169612+0.106946I$	$2.05478+7.99940I$
$u=-0.295523+1.323800I$ $a=\ 0.826792-0.278697I$ $b=-0.709035+0.133102I$	$1.08787-1.51029I$	0
$u=-0.295523-1.323800I$ $a=\ 0.826792+0.278697I$ $b=-0.709035-0.133102I$	$1.08787+1.51029I$	0
$u=-0.323505+0.550313I$ $a=-2.09178-1.20192I$ $b=\ 0.714129+0.426902I$	$-1.73503+4.63424I$	$1.41391-8.73652I$
$u=-0.323505-0.550313I$ $a=-2.09178+1.20192I$ $b=\ 0.714129-0.426902I$	$-1.73503-4.63424I$	$1.41391+8.73652I$
$u=-0.621889+0.097818I$ $a=\ 0.256714-1.066550I$ $b=\ 0.23733-1.44997I$	$-4.86346+0.65866I$	$2.97197-10.93905I$
$u=-0.621889-0.097818I$ $a=\ 0.256714+1.066550I$ $b=\ 0.23733+1.44997I$	$-4.86346-0.65866I$	$2.97197+10.93905I$
$u=-1.058490+0.909565I$ $a=-1.136770-0.125774I$ $b=\ 1.134040+0.771245I$	$-2.27862+6.60178I$	0
$u=-1.058490-0.909565I$ $a=-1.136770+0.125774I$ $b=\ 1.134040-0.771245I$	$-2.27862-6.60178I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.071407 + 0.565700I$ $a = 1.33362 + 1.69899I$ $b = -1.132560 + 0.289085I$	$6.45659 - 2.10452I$	$9.49776 + 3.04081I$
$u = -0.071407 - 0.565700I$ $a = 1.33362 - 1.69899I$ $b = -1.132560 - 0.289085I$	$6.45659 + 2.10452I$	$9.49776 - 3.04081I$
$u = -0.516815 + 0.202739I$ $a = -1.57566 + 0.07191I$ $b = 0.724976 - 0.995650I$	$-2.27163 + 2.86243I$	$4.65330 - 7.44714I$
$u = -0.516815 - 0.202739I$ $a = -1.57566 - 0.07191I$ $b = 0.724976 + 0.995650I$	$-2.27163 - 2.86243I$	$4.65330 + 7.44714I$
$u = 1.33813 + 0.76231I$ $a = -0.359403 - 0.206510I$ $b = 0.714129 - 0.426902I$	$-1.73503 - 4.63424I$	0
$u = 1.33813 - 0.76231I$ $a = -0.359403 + 0.206510I$ $b = 0.714129 + 0.426902I$	$-1.73503 + 4.63424I$	0
$u = -1.21633 + 0.94957I$ $a = -1.051920 + 0.120713I$ $b = 1.094950 + 0.826706I$	$-1.10719 + 9.53077I$	0
$u = -1.21633 - 0.94957I$ $a = -1.051920 - 0.120713I$ $b = 1.094950 - 0.826706I$	$-1.10719 - 9.53077I$	0
$u = 1.31766 + 0.90084I$ $a = -0.869045 - 0.096152I$ $b = 1.134040 - 0.771245I$	$-2.27862 - 6.60178I$	0
$u = 1.31766 - 0.90084I$ $a = -0.869045 + 0.096152I$ $b = 1.134040 + 0.771245I$	$-2.27862 + 6.60178I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.219976 + 0.309198I$ $a = 2.41799 - 2.16689I$ $b = -1.330840 - 0.425024I$	$5.18347 - 3.76978I$	$7.61093 + 4.09207I$
$u = 0.219976 - 0.309198I$ $a = 2.41799 + 2.16689I$ $b = -1.330840 + 0.425024I$	$5.18347 + 3.76978I$	$7.61093 - 4.09207I$
$u = 1.16486 + 1.14571I$ $a = -0.938285 + 0.107673I$ $b = 1.094950 - 0.826706I$	$-1.10719 - 9.53077I$	0
$u = 1.16486 - 1.14571I$ $a = -0.938285 - 0.107673I$ $b = 1.094950 + 0.826706I$	$-1.10719 + 9.53077I$	0
$u = 0.92847 + 1.36427I$ $a = 0.416025 - 0.254301I$ $b = -0.515136 + 0.944106I$	$3.57407 - 2.76213I$	0
$u = 0.92847 - 1.36427I$ $a = 0.416025 + 0.254301I$ $b = -0.515136 - 0.944106I$	$3.57407 + 2.76213I$	0
$u = -1.17276 + 1.20800I$ $a = 0.440515 + 0.221252I$ $b = -0.628715 - 0.960903I$	$2.54618 + 9.70408I$	0
$u = -1.17276 - 1.20800I$ $a = 0.440515 - 0.221252I$ $b = -0.628715 + 0.960903I$	$2.54618 - 9.70408I$	0
$u = -1.00066 + 1.40956I$ $a = -0.245311 + 0.506752I$ $b = 0.693022 - 0.186434I$	$7.51890 - 2.81171I$	0
$u = -1.00066 - 1.40956I$ $a = -0.245311 - 0.506752I$ $b = 0.693022 + 0.186434I$	$7.51890 + 2.81171I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.195791 + 0.026637I$ $a = -9.61408 - 3.32356I$ $b = 0.454798 - 0.372120I$	$0.416750 - 0.601408I$	$1.43686 + 9.41286I$
$u = 0.195791 - 0.026637I$ $a = -9.61408 + 3.32356I$ $b = 0.454798 + 0.372120I$	$0.416750 + 0.601408I$	$1.43686 - 9.41286I$
$u = 0.79054 + 1.64230I$ $a = -0.375455 - 0.500826I$ $b = 0.719391 + 0.178386I$	$6.92940 + 9.49005I$	0
$u = 0.79054 - 1.64230I$ $a = -0.375455 + 0.500826I$ $b = 0.719391 - 0.178386I$	$6.92940 - 9.49005I$	0
$u = -1.79382 + 0.90682I$ $a = -0.0929107 - 0.0321190I$ $b = 0.454798 + 0.372120I$	$0.416750 + 0.601408I$	0
$u = -1.79382 - 0.90682I$ $a = -0.0929107 + 0.0321190I$ $b = 0.454798 - 0.372120I$	$0.416750 - 0.601408I$	0
$u = 0.80685 + 2.15821I$ $a = 0.248523 + 0.128732I$ $b = -0.339874 + 0.241600I$	$-0.169612 - 0.106946I$	0
$u = 0.80685 - 2.15821I$ $a = 0.248523 - 0.128732I$ $b = -0.339874 - 0.241600I$	$-0.169612 + 0.106946I$	0

III. $\boldsymbol{I_3^u = \langle 8.35 \times 10^{10}u^{16} - 3.92 \times 10^{10}u^{15} + \cdots + 2.86 \times 10^9 b + 3.96 \times 10^{10},\ a+1,\ 4u^{17} - 4u^{16} + \cdots + 3u - 1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} -1 \\ -29.1681u^{16} + 13.7025u^{15} + \cdots + 14.5094u - 13.8514 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -29.1681u^{16} + 13.7025u^{15} + \cdots + 14.5094u - 14.8514 \\ -29.1681u^{16} + 13.7025u^{15} + \cdots + 14.5094u - 13.8514 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 21.2708u^{16} - 11.2975u^{15} + \cdots - 9.62148u + 12.5516 \\ 5.80518u^{16} - 4.26392u^{15} + \cdots - 1.59682u + 5.25961 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u \\ 15.4656u^{16} - 7.03360u^{15} + \cdots - 7.02466u + 7.29202 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 8.43198u^{16} - 3.84679u^{15} + \cdots - 4.30716u + 4.86639 \\ 9.97324u^{16} - 6.25135u^{15} + \cdots - 3.40144u + 5.31769 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 15.6935u^{16} - 8.45787u^{15} + \cdots - 6.37770u + 9.03779 \\ 11.1387u^{16} - 7.65532u^{15} + \cdots - 3.57388u + 5.98030 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -19.9888u^{16} + 9.79709u^{15} + \cdots + 8.99838u - 11.5058 \\ -19.9888u^{16} + 9.79709u^{15} + \cdots + 8.99838u - 11.5058 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -30.4245u^{16} + 11.4764u^{15} + \cdots + 18.1218u - 18.7023 \\ -8.55005u^{16} + 2.81847u^{15} + \cdots + 6.03957u - 7.50334 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 23.3540u^{16} - 14.1281u^{15} + \cdots - 9.05605u + 15.3179 \\ 5.11652u^{16} - 4.84615u^{15} + \cdots - 0.515530u + 5.07278 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= \frac{232960675924}{2862203951}u^{16} - \frac{140394778628}{2862203951}u^{15} + \cdots - \frac{87916155015}{2862203951}u + \frac{138818591522}{2862203951}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$4(4u^{17} - 16u^{16} + \cdots - 345u + 89)$
c_2, c_{10}	$u^{17} - u^{16} + \cdots - 4u - 4$
c_3, c_9	$4(4u^{17} - 4u^{16} + \cdots + 3u - 1)$
c_4	$4(4u^{17} + 4u^{16} + \cdots - 4u - 1)$
c_5	$u^{17} + u^{16} + \cdots - 48u - 28$
c_6	$u^{17} + 6u^{16} + \cdots + 5u - 1$
c_7	$u^{17} - 2u^{16} + \cdots - u - 1$
c_8	$16(16u^{17} + 64u^{16} + \cdots + 276u + 149)$
c_{11}	$4(4u^{17} - 4u^{16} + \cdots - 4u + 1)$
c_{12}	$u^{17} + 2u^{16} + \cdots - u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$16(16y^{17} + 32y^{16} + \cdots + 31449y - 7921)$
c_2, c_{10}	$y^{17} - 5y^{16} + \cdots - 32y - 16$
c_3, c_9	$16(16y^{17} - 96y^{16} + \cdots + 13y - 1)$
c_4, c_{11}	$16(16y^{17} - 96y^{16} + \cdots - 18y - 1)$
c_5	$y^{17} - y^{16} + \cdots + 4432y - 784$
c_6	$y^{17} + 4y^{16} + \cdots + 21y - 1$
c_7, c_{12}	$y^{17} + 10y^{16} + \cdots + y - 1$
c_8	$256(256y^{17} - 1664y^{16} + \cdots - 129146y - 22201)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.349992 + 0.941594I$ $a = -1.00000$ $b = 0.382221 - 1.039030I$	$4.86685 - 9.32651I$	$5.41608 + 7.90457I$
$u = 0.349992 - 0.941594I$ $a = -1.00000$ $b = 0.382221 + 1.039030I$	$4.86685 + 9.32651I$	$5.41608 - 7.90457I$
$u = -0.925285 + 0.049672I$ $a = -1.00000$ $b = -0.324837 + 0.399070I$	$-3.01855 - 3.88143I$	$-8.52830 + 3.72764I$
$u = -0.925285 - 0.049672I$ $a = -1.00000$ $b = -0.324837 - 0.399070I$	$-3.01855 + 3.88143I$	$-8.52830 - 3.72764I$
$u = 1.105130 + 0.043646I$ $a = -1.00000$ $b = -0.289360 - 0.016387I$	$0.282501 - 0.033649I$	$-0.021483 - 0.214659I$
$u = 1.105130 - 0.043646I$ $a = -1.00000$ $b = -0.289360 + 0.016387I$	$0.282501 + 0.033649I$	$-0.021483 + 0.214659I$
$u = -0.779267 + 0.338902I$ $a = -1.00000$ $b = 0.869461 - 0.624268I$	$-3.27381 + 2.66022I$	$-5.11049 - 5.19029I$
$u = -0.779267 - 0.338902I$ $a = -1.00000$ $b = 0.869461 + 0.624268I$	$-3.27381 - 2.66022I$	$-5.11049 + 5.19029I$
$u = -0.181322 + 0.635600I$ $a = -1.00000$ $b = 0.097483 + 1.352810I$	$5.51202 + 1.96200I$	$8.78340 - 3.00810I$
$u = -0.181322 - 0.635600I$ $a = -1.00000$ $b = 0.097483 - 1.352810I$	$5.51202 - 1.96200I$	$8.78340 + 3.00810I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.138810 + 0.797369I$ $a = -1.00000$ $b = 1.18485 + 0.98213I$	$-4.13204 + 8.52148I$	$-2.44134 - 7.06872I$
$u = -1.138810 - 0.797369I$ $a = -1.00000$ $b = 1.18485 - 0.98213I$	$-4.13204 - 8.52148I$	$-2.44134 + 7.06872I$
$u = 0.589412 + 0.054615I$ $a = -1.00000$ $b = 0.72146 - 1.54093I$	$-5.44098 + 0.16624I$	$-9.87770 - 0.33991I$
$u = 0.589412 - 0.054615I$ $a = -1.00000$ $b = 0.72146 + 1.54093I$	$-5.44098 - 0.16624I$	$-9.87770 + 0.33991I$
$u = 0.393230$ $a = -1.00000$ $b = -1.47554$	4.97612	9.22450
$u = 1.28353 + 1.07729I$ $a = -1.00000$ $b = 1.096500 - 0.719832I$	$-2.21885 - 8.19478I$	$0.16759 + 8.21222I$
$u = 1.28353 - 1.07729I$ $a = -1.00000$ $b = 1.096500 + 0.719832I$	$-2.21885 + 8.19478I$	$0.16759 - 8.21222I$

IV. $\boldsymbol{I_4^u = \langle -18u^3 + 24u^2 + b - 21u + 8,\ -30u^3 + 42u^2 + 2a - 41u + 17,\ 6u^4 - 12u^3 + 13u^2 - 8u + 2\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 15u^3 - 21u^2 + \frac{41}{2}u - \frac{17}{2} \\ 18u^3 - 24u^2 + 21u - 8 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 33u^3 - 45u^2 + \frac{83}{2}u - \frac{33}{2} \\ 18u^3 - 24u^2 + 21u - 8 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{39}{2}u^3 + 21u^2 - \frac{85}{4}u + 5 \\ -6u^3 + 6u^2 - 6u + 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -\frac{15}{2}u^3 + 9u^2 - \frac{37}{4}u + 3 \\ -6u^3 + 6u^2 - 4u + 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{21}{2}u^3 - 15u^2 + \frac{55}{4}u - 4 \\ 3u^2 - 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{15}{2}u^3 - 9u^2 + \frac{37}{4}u - 3 \\ 2u^3 + u - 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} \frac{75}{2}u^3 - \frac{111}{2}u^2 + \frac{205}{4}u - \frac{87}{4} \\ 15u^3 - 21u^2 + \frac{41}{2}u - 9 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 51u^3 - 72u^2 + \frac{133}{2}u - 27 \\ 16u^3 - 24u^2 + 24u - 10 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -\frac{21}{2}u^3 + 9u^2 - \frac{39}{4}u \\ -2u^3 - u - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$6(6u^4 - 24u^3 + 31u^2 - 10u + 1)$
c_2, c_5, c_{10}	$2(2u^4 + 5u^2 + 6u + 3)$
c_3, c_9, c_{11}	$6(6u^4 - 12u^3 + 13u^2 - 8u + 2)$
c_4	$6(6u^4 + 12u^3 + 13u^2 + 8u + 2)$
c_6, c_7, c_{12}	$(u^2 + 2)^2$
c_8	$9(3u^2 + 2u + 3)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$36(36y^4 - 204y^3 + 493y^2 - 38y + 1)$
c_2, c_5, c_{10}	$4(4y^4 + 20y^3 + 37y^2 - 6y + 9)$
c_3, c_4, c_9 c_{11}	$36(36y^4 + 12y^3 + y^2 - 12y + 4)$
c_6, c_7, c_{12}	$(y + 2)^4$
c_8	$81(9y^2 + 14y + 9)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_4	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.375454 + 0.826676I$ $a = -0.164544 + 0.680759I$ $b = -1.414210I$	-4.93480	0
$u = 0.375454 - 0.826676I$ $a = -0.164544 - 0.680759I$ $b = 1.414210I$	-4.93480	0
$u = 0.624546 + 0.119569I$ $a = -0.33546 + 1.38787I$ $b = 1.414210I$	-4.93480	0
$u = 0.624546 - 0.119569I$ $a = -0.33546 - 1.38787I$ $b = -1.414210I$	-4.93480	0

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$576(6u^4-24u^3+\cdots-10u+1)(4u^{17}-16u^{16}+\cdots-345u+89)$ $\cdot(3u^{24}-3u^{23}+\cdots-19u+1)$ $\cdot(8u^{68}+172u^{66}+\cdots+1912799780u+308884925)$
c_2, c_{10}	$4(2u^4+5u^2+6u+3)(u^{17}-u^{16}+\cdots-4u-4)(u^{24}+u^{23}+\cdots-3u-3)$ $\cdot(2u^{68}-7u^{66}+\cdots+10344u+1196)$
c_3, c_9	$576(6u^4-12u^3+\cdots-8u+2)(4u^{17}-4u^{16}+\cdots+3u-1)$ $\cdot(3u^{24}+3u^{23}+\cdots-u+1)(8u^{68}+40u^{66}+\cdots+270u+50)$
c_4	$576(6u^4+12u^3+\cdots+8u+2)(4u^{17}+4u^{16}+\cdots-4u-1)$ $\cdot(3u^{24}-3u^{23}+\cdots+2u+1)$ $\cdot(8u^{68}-184u^{66}+\cdots+3891182u+266986)$
c_5	$4(2u^4+5u^2+6u+3)(u^{17}+u^{16}+\cdots-48u-28)$ $\cdot(u^{24}-3u^{23}+\cdots-33u+3)(2u^{68}+21u^{66}+\cdots-27024u+18932)$
c_6	$((u^2+2)^2)(u^{17}+6u^{16}+\cdots+5u-1)(u^{24}-17u^{23}+\cdots+448u-64)$ $\cdot(u^{34}+8u^{33}+\cdots+10u+2)^2$
c_7	$((u^2+2)^2)(u^{17}-2u^{16}+\cdots-u-1)(u^{24}-11u^{23}+\cdots-192u+32)$ $\cdot(u^{34}+6u^{33}+\cdots+6u+2)^2$
c_8	$20736(3u^2+2u+3)^2(16u^{17}+64u^{16}+\cdots+276u+149)$ $\cdot(9u^{24}+168u^{23}+\cdots-30720u-4096)$ $\cdot(4u^{34}-54u^{33}+\cdots+2256u+523)^2$
c_{11}	$576(6u^4-12u^3+\cdots-8u+2)(4u^{17}-4u^{16}+\cdots-4u+1)$ $\cdot(3u^{24}-3u^{23}+\cdots+2u+1)$ $\cdot(8u^{68}-184u^{66}+\cdots+3891182u+266986)$
c_{12}	$((u^2+2)^2)(u^{17}+2u^{16}+\cdots-u+1)(u^{24}-11u^{23}+\cdots-192u+32)$ $\cdot(u^{34}+6u^{33}+\cdots+6u+2)^2$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$331776(36y^4-204y^3+493y^2-38y+1)$ $\cdot(16y^{17}+32y^{16}+\cdots+31449y-7921)$ $\cdot(9y^{24}+201y^{23}+\cdots-165y+1)$ $\cdot(64y^{68}+2752y^{67}+\cdots-2.42\times10^{16}y+9.54\times10^{16})$
c_2, c_{10}	$16(4y^4+20y^3+\cdots-6y+9)(y^{17}-5y^{16}+\cdots-32y-16)$ $\cdot(y^{24}-5y^{23}+\cdots+21y+9)$ $\cdot(4y^{68}-28y^{67}+\cdots-14796304y+1430416)$
c_3, c_9	$331776(36y^4+12y^3+\cdots-12y+4)(16y^{17}-96y^{16}+\cdots+13y-1)$ $\cdot(9y^{24}-51y^{23}+\cdots-17y+1)$ $\cdot(64y^{68}+640y^{67}+\cdots-109200y+2500)$
c_4, c_{11}	$331776(36y^4+12y^3+\cdots-12y+4)(16y^{17}-96y^{16}+\cdots-18y-1)$ $\cdot(9y^{24}-267y^{23}+\cdots-18y+1)$ $\cdot(64y^{68}-2944y^{67}+\cdots-3773667301888y+71281524196)$
c_5	$16(4y^4+20y^3+\cdots-6y+9)(y^{17}-y^{16}+\cdots+4432y-784)$ $\cdot(y^{24}+11y^{23}+\cdots-69y+9)$ $\cdot(4y^{68}+84y^{67}+\cdots+2034305520y+358420624)$
c_6	$((y+2)^4)(y^{17}+4y^{16}+\cdots+21y-1)$ $\cdot(y^{24}+7y^{23}+\cdots-36864y+4096)(y^{34}-4y^{33}+\cdots-64y+4)^2$
c_7, c_{12}	$((y+2)^4)(y^{17}+10y^{16}+\cdots+y-1)(y^{24}+9y^{23}+\cdots+4608y+1024)$ $\cdot(y^{34}+10y^{33}+\cdots+80y+4)^2$
c_8	$429981696(9y^2+14y+9)^2$ $\cdot(256y^{17}-1664y^{16}+\cdots-129146y-22201)$ $\cdot(81y^{24}-558y^{23}+\cdots-44040192y+16777216)$ $\cdot(16y^{34}-524y^{33}+\cdots-8625016y+273529)^2$