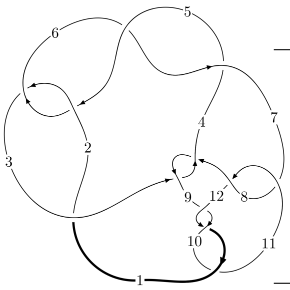
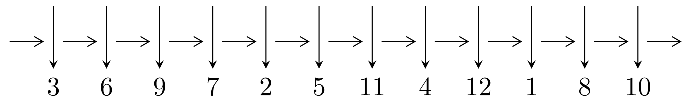
$12a_{0344}$ ($K12a_{0344}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -9.85235 \times 10^{24} u^{79} - 2.72115 \times 10^{25} u^{78} + \cdots + 9.93119 \times 10^{23} b - 7.91401 \times 10^{24},$$
$$- 6.33480 \times 10^{24} u^{79} - 2.53760 \times 10^{25} u^{78} + \cdots + 1.98624 \times 10^{24} a - 1.64622 \times 10^{25},\ u^{80} + 4u^{79} + \cdots + 6u -$$
$$I_2^u = \langle u^4 - u^2 + b - u + 2,\ 2u^4 + u^3 + a - 2u + 2,\ u^5 + u^4 - u^2 + u + 1 \rangle$$
$$I_3^u = \langle u^2 + b,\ -2u^2 a + a^2 + au - 2u^2 + a + 2u - 1,\ u^3 - u^2 + 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 91 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.

$$\boldsymbol{I_1^u = \langle -9.85\times 10^{24}u^{79} - 2.72\times 10^{25}u^{78} + \cdots + 9.93\times 10^{23}b - 7.91\times 10^{24},\ -6.33\times 10^{24}u^{79} - 2.54\times 10^{25}u^{78} + \cdots + 1.99\times 10^{24}a - 1.65\times 10^{25},\ u^{80} + 4u^{79} + \cdots + 6u + 1\rangle}$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 3.18934u^{79} + 12.7759u^{78} + \cdots + 47.5761u + 8.28813 \\ 9.92061u^{79} + 27.4001u^{78} + \cdots + 40.9951u + 7.96884 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 7.35876u^{79} + 21.6854u^{78} + \cdots + 23.9027u + 7.03413 \\ -0.876176u^{79} + 2.07029u^{78} + \cdots + 16.0513u + 4.25701 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^4 - u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -1.44610u^{79} - 3.25664u^{78} + \cdots - 0.0887997u + 2.46775 \\ 3.89301u^{79} + 9.15127u^{78} + \cdots + 9.76680u + 2.44691 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 3.89399u^{79} + 14.3516u^{78} + \cdots + 46.8184u + 7.87170 \\ 8.12729u^{79} + 22.9501u^{78} + \cdots + 35.1348u + 6.87334 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 7.21937u^{79} + 24.5178u^{78} + \cdots + 58.4840u + 11.4296 \\ 7.78413u^{79} + 24.6495u^{78} + \cdots + 45.8212u + 9.60214 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{2253445550428814715628672 45}{993119401398295715683309}u^{79} + \frac{14865689107595589277914334 33}{1986238802796591431366618}u^{78} + \cdots + \frac{29479325815778746584574722 91}{1986238802796591431366618}u + \frac{61948779193823245508221619 1}{1986238802796591431366618}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_6	$u^{80} + 20u^{79} + \cdots + 42u + 1$
c_2, c_5	$u^{80} + 4u^{79} + \cdots + 6u + 1$
c_3, c_8	$u^{80} - 2u^{79} + \cdots + 160u - 64$
c_7, c_{11}	$u^{80} + 4u^{79} + \cdots - 128u - 32$
c_9, c_{10}, c_{12}	$u^{80} - 9u^{79} + \cdots + 27u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_6	$y^{80} + 84y^{79} + \cdots - 682y + 1$
c_2, c_5	$y^{80} - 20y^{79} + \cdots - 42y + 1$
c_3, c_8	$y^{80} + 42y^{79} + \cdots - 5120y + 4096$
c_7, c_{11}	$y^{80} - 42y^{79} + \cdots - 66048y + 1024$
c_9, c_{10}, c_{12}	$y^{80} - 75y^{79} + \cdots - 213y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.937313 + 0.347751I$ $a = 0.174266 - 0.787568I$ $b = -0.727576 + 0.727455I$	$-3.33822 - 4.82117I$	0
$u = 0.937313 - 0.347751I$ $a = 0.174266 + 0.787568I$ $b = -0.727576 - 0.727455I$	$-3.33822 + 4.82117I$	0
$u = 0.582846 + 0.818388I$ $a = -0.672268 + 0.203176I$ $b = -0.086980 - 0.893421I$	$-1.26973 - 4.01147I$	0
$u = 0.582846 - 0.818388I$ $a = -0.672268 - 0.203176I$ $b = -0.086980 + 0.893421I$	$-1.26973 + 4.01147I$	0
$u = 0.845099 + 0.506123I$ $a = -0.017809 + 0.337413I$ $b = 0.369387 - 0.227156I$	$1.73618 - 2.77244I$	0
$u = 0.845099 - 0.506123I$ $a = -0.017809 - 0.337413I$ $b = 0.369387 + 0.227156I$	$1.73618 + 2.77244I$	0
$u = -0.950543 + 0.403879I$ $a = 0.090000 - 0.577227I$ $b = -0.64347 - 1.42153I$	$-8.56535 + 4.83425I$	0
$u = -0.950543 - 0.403879I$ $a = 0.090000 + 0.577227I$ $b = -0.64347 + 1.42153I$	$-8.56535 - 4.83425I$	0
$u = -0.959530 + 0.120935I$ $a = -0.838995 - 0.755294I$ $b = -0.656494 + 0.002059I$	$-2.04664 - 1.46066I$	0
$u = -0.959530 - 0.120935I$ $a = -0.838995 + 0.755294I$ $b = -0.656494 - 0.002059I$	$-2.04664 + 1.46066I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.975562 + 0.382659I$ $a = -0.471936 + 0.931640I$ $b = -1.112520 + 0.332535I$	$-0.55792 - 7.07014I$	0
$u = 0.975562 - 0.382659I$ $a = -0.471936 - 0.931640I$ $b = -1.112520 - 0.332535I$	$-0.55792 + 7.07014I$	0
$u = 0.870682 + 0.332652I$ $a = 1.25916 - 1.20100I$ $b = 0.603918 + 0.379611I$	$-2.02857 - 2.17557I$	0
$u = 0.870682 - 0.332652I$ $a = 1.25916 + 1.20100I$ $b = 0.603918 - 0.379611I$	$-2.02857 + 2.17557I$	0
$u = -0.904570 + 0.199072I$ $a = 0.152725 - 0.178138I$ $b = 1.40879 + 0.86692I$	$-4.19881 + 0.29220I$	0
$u = -0.904570 - 0.199072I$ $a = 0.152725 + 0.178138I$ $b = 1.40879 - 0.86692I$	$-4.19881 - 0.29220I$	0
$u = -1.069250 + 0.146998I$ $a = 0.899094 + 0.683161I$ $b = -0.0510110 - 0.0498696I$	$-7.63820 - 4.53013I$	0
$u = -1.069250 - 0.146998I$ $a = 0.899094 - 0.683161I$ $b = -0.0510110 + 0.0498696I$	$-7.63820 + 4.53013I$	0
$u = -0.853249 + 0.283826I$ $a = 0.382918 + 1.152640I$ $b = 0.939067 + 0.906091I$	$-2.31119 + 2.17762I$	0
$u = -0.853249 - 0.283826I$ $a = 0.382918 - 1.152640I$ $b = 0.939067 - 0.906091I$	$-2.31119 - 2.17762I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.047550 + 0.374433I$ $a = 0.269786 - 0.393377I$ $b = 1.006870 - 0.937317I$	$-6.26460 - 11.20980I$	0
$u = 1.047550 - 0.374433I$ $a = 0.269786 + 0.393377I$ $b = 1.006870 + 0.937317I$	$-6.26460 + 11.20980I$	0
$u = 0.882220 + 0.717129I$ $a = -0.443888 + 1.246120I$ $b = -0.226602 - 0.774802I$	$2.32601 - 2.74241I$	0
$u = 0.882220 - 0.717129I$ $a = -0.443888 - 1.246120I$ $b = -0.226602 + 0.774802I$	$2.32601 + 2.74241I$	0
$u = 0.848871 + 0.109256I$ $a = -1.96581 + 0.51451I$ $b = 0.377107 - 0.195551I$	$-10.28610 - 0.13892I$	$-24.9438 + 9.7256I$
$u = 0.848871 - 0.109256I$ $a = -1.96581 - 0.51451I$ $b = 0.377107 + 0.195551I$	$-10.28610 + 0.13892I$	$-24.9438 - 9.7256I$
$u = 0.859887 + 0.789823I$ $a = 2.69951 + 2.32641I$ $b = -3.15862 + 0.26803I$	$1.64882 - 2.07054I$	0
$u = 0.859887 - 0.789823I$ $a = 2.69951 - 2.32641I$ $b = -3.15862 - 0.26803I$	$1.64882 + 2.07054I$	0
$u = -0.892015 + 0.791150I$ $a = 0.598424 + 0.150430I$ $b = 0.240714 - 1.363070I$	$-5.15784 + 2.97447I$	0
$u = -0.892015 - 0.791150I$ $a = 0.598424 - 0.150430I$ $b = 0.240714 + 1.363070I$	$-5.15784 - 2.97447I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.836397 + 0.864338I$ $a = -2.07623 + 0.93166I$ $b = 2.19378 + 1.00704I$	$4.36446 - 2.41660I$	0
$u = -0.836397 - 0.864338I$ $a = -2.07623 - 0.93166I$ $b = 2.19378 - 1.00704I$	$4.36446 + 2.41660I$	0
$u = 0.865180 + 0.835627I$ $a = 1.50909 + 1.74688I$ $b = -2.39004 - 0.66512I$	$4.48911 - 0.87143I$	0
$u = 0.865180 - 0.835627I$ $a = 1.50909 - 1.74688I$ $b = -2.39004 + 0.66512I$	$4.48911 + 0.87143I$	0
$u = 0.917805 + 0.779835I$ $a = -2.54765 - 1.79888I$ $b = 3.28237 - 0.10616I$	$1.47178 - 3.83910I$	0
$u = 0.917805 - 0.779835I$ $a = -2.54765 + 1.79888I$ $b = 3.28237 + 0.10616I$	$1.47178 + 3.83910I$	0
$u = 0.494296 + 0.619420I$ $a = -0.118161 + 0.445938I$ $b = 0.050487 + 0.469304I$	$2.81647 - 1.39098I$	$-4.65333 + 3.39574I$
$u = 0.494296 - 0.619420I$ $a = -0.118161 - 0.445938I$ $b = 0.050487 - 0.469304I$	$2.81647 + 1.39098I$	$-4.65333 - 3.39574I$
$u = -0.800901 + 0.904702I$ $a = 1.55800 - 1.78263I$ $b = -2.53254 + 0.77113I$	$2.23380 - 9.78191I$	0
$u = -0.800901 - 0.904702I$ $a = 1.55800 + 1.78263I$ $b = -2.53254 - 0.77113I$	$2.23380 + 9.78191I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.856330 + 0.854982I$ $a = 1.166280 - 0.386013I$ $b = -1.60157 + 0.16248I$	$5.34443 + 0.79481I$	0
$u = -0.856330 - 0.854982I$ $a = 1.166280 + 0.386013I$ $b = -1.60157 - 0.16248I$	$5.34443 - 0.79481I$	0
$u = -0.828964 + 0.884459I$ $a = -1.60651 + 1.16176I$ $b = 2.28569 - 0.38260I$	$7.64873 - 4.89072I$	0
$u = -0.828964 - 0.884459I$ $a = -1.60651 - 1.16176I$ $b = 2.28569 + 0.38260I$	$7.64873 + 4.89072I$	0
$u = 1.017270 + 0.661319I$ $a = -0.318473 + 0.115749I$ $b = -0.238056 - 0.984477I$	$-2.61888 - 1.46312I$	0
$u = 1.017270 - 0.661319I$ $a = -0.318473 - 0.115749I$ $b = -0.238056 + 0.984477I$	$-2.61888 + 1.46312I$	0
$u = 0.169440 + 0.760477I$ $a = 0.000302 + 0.920026I$ $b = -0.886187 - 0.066321I$	$-3.38617 + 7.21522I$	$-11.57739 - 4.93181I$
$u = 0.169440 - 0.760477I$ $a = 0.000302 - 0.920026I$ $b = -0.886187 + 0.066321I$	$-3.38617 - 7.21522I$	$-11.57739 + 4.93181I$
$u = 0.838303 + 0.889934I$ $a = -0.82802 - 2.20009I$ $b = 2.09293 + 1.43375I$	$-0.22327 + 2.37163I$	0
$u = 0.838303 - 0.889934I$ $a = -0.82802 + 2.20009I$ $b = 2.09293 - 1.43375I$	$-0.22327 - 2.37163I$	0

Solutions to I^u_1	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.933131 + 0.813064I$ $a = -2.36608 - 1.04014I$ $b = 2.31780 - 1.05442I$	$4.27708 - 5.28117I$	0
$u = 0.933131 - 0.813064I$ $a = -2.36608 + 1.04014I$ $b = 2.31780 + 1.05442I$	$4.27708 + 5.28117I$	0
$u = -0.887481 + 0.879573I$ $a = 1.58106 - 0.65269I$ $b = -1.76830 - 0.70972I$	$10.21390 + 1.20204I$	0
$u = -0.887481 - 0.879573I$ $a = 1.58106 + 0.65269I$ $b = -1.76830 + 0.70972I$	$10.21390 - 1.20204I$	0
$u = -0.948192 + 0.820603I$ $a = -1.13552 + 1.28892I$ $b = 1.38937 + 0.40661I$	$5.05593 + 5.43924I$	0
$u = -0.948192 - 0.820603I$ $a = -1.13552 - 1.28892I$ $b = 1.38937 - 0.40661I$	$5.05593 - 5.43924I$	0
$u = -0.965009 + 0.816000I$ $a = 1.18309 - 1.63202I$ $b = -2.56538 + 0.59228I$	$3.96142 + 8.66250I$	0
$u = -0.965009 - 0.816000I$ $a = 1.18309 + 1.63202I$ $b = -2.56538 - 0.59228I$	$3.96142 - 8.66250I$	0
$u = -0.942925 + 0.856435I$ $a = -0.96892 + 1.24837I$ $b = 1.88035 - 0.35749I$	$10.03880 + 5.22302I$	0
$u = -0.942925 - 0.856435I$ $a = -0.96892 - 1.24837I$ $b = 1.88035 + 0.35749I$	$10.03880 - 5.22302I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.979592 + 0.822863I$ $a = 1.89112 - 1.38953I$ $b = -2.23000 - 0.70512I$	$7.17373 + 11.21830I$	0
$u = -0.979592 - 0.822863I$ $a = 1.89112 + 1.38953I$ $b = -2.23000 + 0.70512I$	$7.17373 - 11.21830I$	0
$u = 0.977444 + 0.830015I$ $a = 2.51218 + 0.28028I$ $b = -2.10646 + 1.76637I$	$-0.66511 - 8.73988I$	0
$u = 0.977444 - 0.830015I$ $a = 2.51218 - 0.28028I$ $b = -2.10646 - 1.76637I$	$-0.66511 + 8.73988I$	0
$u = -0.321779 + 0.632139I$ $a = 0.756357 + 0.960282I$ $b = 0.871646 - 0.585910I$	$-6.55850 - 1.01923I$	$-15.1391 + 0.I$
$u = -0.321779 - 0.632139I$ $a = 0.756357 - 0.960282I$ $b = 0.871646 + 0.585910I$	$-6.55850 + 1.01923I$	$-15.1391 + 0.I$
$u = -1.004210 + 0.817409I$ $a = -2.33088 + 1.12360I$ $b = 2.59048 + 1.17800I$	$1.5910 + 16.1481I$	0
$u = -1.004210 - 0.817409I$ $a = -2.33088 - 1.12360I$ $b = 2.59048 - 1.17800I$	$1.5910 - 16.1481I$	0
$u = -0.700562$ $a = -4.30574$ $b = -3.73829$	-2.59838	-119.010
$u = 0.237042 + 0.644569I$ $a = -0.711917 - 0.474272I$ $b = 1.050580 - 0.217495I$	$1.76492 + 3.34953I$	$-6.94493 - 4.05394I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.237042 - 0.644569I$ $a = -0.711917 + 0.474272I$ $b = 1.050580 + 0.217495I$	$1.76492 - 3.34953I$	$-6.94493 + 4.05394I$
$u = -0.941907 + 0.920353I$ $a = -0.680992 - 0.844842I$ $b = 0.006272 + 1.215720I$	$8.88798 + 3.38254I$	0
$u = -0.941907 - 0.920353I$ $a = -0.680992 + 0.844842I$ $b = 0.006272 - 1.215720I$	$8.88798 - 3.38254I$	0
$u = -0.578820$ $a = -0.441740$ $b = -0.634881$	-0.838544	-11.3510
$u = 0.406147 + 0.408093I$ $a = 1.80938 - 0.53475I$ $b = -0.854606 + 0.774894I$	$-0.571047 - 0.765230I$	$-10.03702 + 1.06541I$
$u = 0.406147 - 0.408093I$ $a = 1.80938 + 0.53475I$ $b = -0.854606 - 0.774894I$	$-0.571047 + 0.765230I$	$-10.03702 - 1.06541I$
$u = 0.215457 + 0.521353I$ $a = 0.91607 - 1.54710I$ $b = -0.199480 - 0.311181I$	$-1.18117 + 1.56184I$	$-9.13121 - 0.95837I$
$u = 0.215457 - 0.521353I$ $a = 0.91607 + 1.54710I$ $b = -0.199480 + 0.311181I$	$-1.18117 - 1.56184I$	$-9.13121 + 0.95837I$
$u = -0.482222$ $a = -0.713720$ $b = -0.780848$	-0.843561	-10.4350
$u = -0.195815$ $a = -2.15633$ $b = -0.689441$	-0.820251	-11.7060

II. $\boldsymbol{I_2^u = \langle u^4 - u^2 + b - u + 2,\ 2u^4 + u^3 + a - 2u + 2,\ u^5 + u^4 - u^2 + u + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 10u^4 + 7u^3 + u^2 - 10u + 7$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_6, c_8	$y^5 + 7y^4 + 16y^3 + 13y^2 + 3y - 1$
c_2, c_5	$y^5 - y^4 + 4y^3 - 3y^2 + 3y - 1$
c_7, c_{11}	y^5
c_9, c_{10}, c_{12}	$(y-1)^5$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.758138 + 0.584034I$ $a = 1.315520 - 0.467517I$ $b = -0.278580 + 1.055720I$	$0.17487 - 2.21397I$	$-10.02401 + 4.83884I$
$u = 0.758138 - 0.584034I$ $a = 1.315520 + 0.467517I$ $b = -0.278580 - 1.055720I$	$0.17487 + 2.21397I$	$-10.02401 - 4.83884I$
$u = -0.935538 + 0.903908I$ $a = 0.368676 + 0.566573I$ $b = -0.020316 - 0.590570I$	$9.31336 + 3.33174I$	$-1.83654 - 1.25445I$
$u = -0.935538 - 0.903908I$ $a = 0.368676 - 0.566573I$ $b = -0.020316 + 0.590570I$	$9.31336 - 3.33174I$	$-1.83654 + 1.25445I$
$u = -0.645200$ $a = -3.36840$ $b = -2.40221$	-2.52712	13.7210

III. $\boldsymbol{I_3^u = \langle u^2 + b,\ -2u^2a + a^2 + au - 2u^2 + a + 2u - 1,\ u^3 - u^2 + 1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^2 + u + 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} a \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} au - 2u^2 + 2u + 1 \\ u^2a - au + 3u^2 - a - 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2 - 1 \\ -u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u \\ -u^2 + u + 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} au - 2u^2 + 2u + 1 \\ u^2a - au + 3u^2 - a - 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -au + 2u^2 - u - 2 \\ -u^2a + au - 3u^2 + a + 1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 2au - 3u^2 + a + 3u + 2 \\ 2u^2a - 2au + 4u^2 - 2a - 2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.877439 + 0.744862I$ $a = -0.586612 + 0.101930I$ $b = -0.215080 - 1.307140I$	$-5.85852 - 2.82812I$	$-18.4326 + 1.8100I$
$u = 0.877439 + 0.744862I$ $a = -0.86067 + 1.76749I$ $b = -0.215080 - 1.307140I$	$2.03717 - 2.82812I$	$-25.9630 + 6.8067I$
$u = 0.877439 - 0.744862I$ $a = -0.586612 - 0.101930I$ $b = -0.215080 + 1.307140I$	$-5.85852 + 2.82812I$	$-18.4326 - 1.8100I$
$u = 0.877439 - 0.744862I$ $a = -0.86067 - 1.76749I$ $b = -0.215080 + 1.307140I$	$2.03717 + 2.82812I$	$-25.9630 - 6.8067I$
$u = -0.754878$ $a = -1.51473$ $b = -0.569840$	-2.10041	-18.3450
$u = -0.754878$ $a = 2.40929$ $b = -0.569840$	-9.99610	0.135730

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_4	$(u^3-u^2+2u-1)^2(u^5-u^4+4u^3-3u^2+3u-1)$ $\cdot(u^{80}+20u^{79}+\cdots+42u+1)$
c_2	$((u^3+u^2-1)^2)(u^5-u^4+u^2+u-1)(u^{80}+4u^{79}+\cdots+6u+1)$
c_3	$u^6(u^5-u^4+\cdots+3u-1)(u^{80}-2u^{79}+\cdots+160u-64)$
c_5	$((u^3-u^2+1)^2)(u^5+u^4-u^2+u+1)(u^{80}+4u^{79}+\cdots+6u+1)$
c_6	$(u^3+u^2+2u+1)^2(u^5+u^4+4u^3+3u^2+3u+1)$ $\cdot(u^{80}+20u^{79}+\cdots+42u+1)$
c_7	$u^5(u^2+u-1)^3(u^{80}+4u^{79}+\cdots-128u-32)$
c_8	$u^6(u^5+u^4+\cdots+3u+1)(u^{80}-2u^{79}+\cdots+160u-64)$
c_9, c_{10}	$((u-1)^5)(u^2+u-1)^3(u^{80}-9u^{79}+\cdots+27u+1)$
c_{11}	$u^5(u^2-u-1)^3(u^{80}+4u^{79}+\cdots-128u-32)$
c_{12}	$((u+1)^5)(u^2-u-1)^3(u^{80}-9u^{79}+\cdots+27u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_6	$(y^3+3y^2+2y-1)^2(y^5+7y^4+16y^3+13y^2+3y-1)$ $\cdot\,(y^{80}+84y^{79}+\cdots-682y+1)$
c_2, c_5	$(y^3-y^2+2y-1)^2(y^5-y^4+4y^3-3y^2+3y-1)$ $\cdot\,(y^{80}-20y^{79}+\cdots-42y+1)$
c_3, c_8	$y^6(y^5+7y^4+\cdots+3y-1)(y^{80}+42y^{79}+\cdots-5120y+4096)$
c_7, c_{11}	$y^5(y^2-3y+1)^3(y^{80}-42y^{79}+\cdots-66048y+1024)$
c_9, c_{10}, c_{12}	$((y-1)^5)(y^2-3y+1)^3(y^{80}-75y^{79}+\cdots-213y+1)$