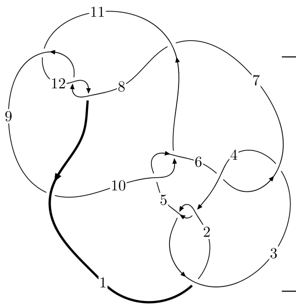
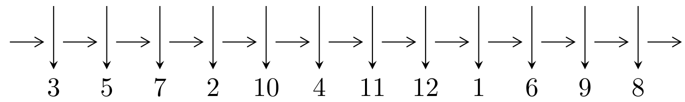
$12a_{0053}$ ($K12a_{0053}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I^u_1 = \langle & -3.63164\times 10^{260}u^{101} + 2.67815\times 10^{260}u^{100} + \cdots + 1.75319\times 10^{262}b - 2.53854\times 10^{263},\\
& -1.79420\times 10^{261}u^{101} + 8.56337\times 10^{260}u^{100} + \cdots + 7.01276\times 10^{262}a - 7.92227\times 10^{263},\\
& u^{102} - 2u^{101} + \cdots - 1024u - 512\rangle\\
I^u_2 = \langle & b+1,\ u^5 - 4u^3 - u^2 + a + 4u + 3,\ u^6 - u^5 - 3u^4 + 2u^3 + 2u^2 + u - 1\rangle
\end{aligned}$$

$$\begin{aligned}
I^v_1 &= \langle a,\ v^2 + b + 2v,\ v^3 + 3v^2 + 2v + 1\rangle\\
I^v_2 &= \langle a,\ -6v^5 + 29v^4 - 57v^3 - 43v^2 + 10b + 2v - 1,\ v^6 - 5v^5 + 10v^4 + 7v^3 - 4v^2 - 2v + 1\rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 117 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. $\boldsymbol{I_1^u = \langle -3.63 \times 10^{260} u^{101} + 2.68 \times 10^{260} u^{100} + \cdots + 1.75 \times 10^{262} b - 2.54 \times 10^{263},\ -1.79 \times 10^{261} u^{101} + 8.56 \times 10^{260} u^{100} + \cdots + 7.01 \times 10^{262} a - 7.92 \times 10^{263},\ u^{102} - 2u^{101} + \cdots - 1024u - 512 \rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.0255848u^{101} - 0.0122111u^{100} + \cdots + 83.4661u + 11.2969 \\ 0.0207145u^{101} - 0.0152759u^{100} + \cdots + 31.4829u + 14.4796 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.0462992u^{101} - 0.0274870u^{100} + \cdots + 114.949u + 25.7765 \\ 0.0207145u^{101} - 0.0152759u^{100} + \cdots + 31.4829u + 14.4796 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.0274317u^{101} + 0.0331153u^{100} + \cdots - 44.0458u - 25.7039 \\ 0.0488757u^{101} - 0.0591895u^{100} + \cdots + 95.3012u + 28.8088 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.0272415u^{101} - 0.00262615u^{100} + \cdots + 74.8617u + 22.1520 \\ 0.0457661u^{101} - 0.0510031u^{100} + \cdots + 104.242u + 36.2491 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.0214440u^{101} - 0.0260743u^{100} + \cdots + 51.2554u + 3.10487 \\ -0.0386065u^{101} + 0.0480052u^{100} + \cdots - 67.1046u - 20.2002 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.0429892u^{101} - 0.0538624u^{100} + \cdots + 87.5705u + 14.2399 \\ -0.0455989u^{101} + 0.0579958u^{100} + \cdots - 76.7190u - 23.5004 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.0657508u^{101} - 0.101129u^{100} + \cdots + 110.895u + 1.93899 \\ -0.0556268u^{101} + 0.0657875u^{100} + \cdots - 118.941u - 39.5496 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.0157934u^{101} + 0.0415356u^{100} + \cdots + 36.6963u + 23.0326 \\ 0.00311735u^{101} + 0.00656623u^{100} + \cdots - 7.45847u + 6.07217 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.0103007u^{101} + 0.100685u^{100} + \cdots - 40.1004u + 18.3924$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{102} + 50u^{101} + \cdots + 200u + 1$
c_2, c_4	$u^{102} - 10u^{101} + \cdots - 100u^2 + 1$
c_3, c_6	$u^{102} - 4u^{101} + \cdots + 384u - 64$
c_5, c_{10}	$u^{102} - 2u^{101} + \cdots - 1024u - 512$
c_7, c_9	$u^{102} + 5u^{101} + \cdots + 22859u + 3137$
c_8, c_{11}, c_{12}	$u^{102} - 5u^{101} + \cdots + 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{102} + 14y^{101} + \cdots - 37224y + 1$
c_2, c_4	$y^{102} - 50y^{101} + \cdots - 200y + 1$
c_3, c_6	$y^{102} + 48y^{101} + \cdots - 24576y + 4096$
c_5, c_{10}	$y^{102} - 56y^{101} + \cdots - 10878976y + 262144$
c_7, c_9	$y^{102} - 71y^{101} + \cdots + 595599577y + 9840769$
c_8, c_{11}, c_{12}	$y^{102} + 85y^{101} + \cdots + 57y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.469735 + 0.883162I$ $a = 0.286453 - 0.882567I$ $b = 0.479220 + 0.391058I$	$2.77045 - 2.21678I$	0
$u = 0.469735 - 0.883162I$ $a = 0.286453 + 0.882567I$ $b = 0.479220 - 0.391058I$	$2.77045 + 2.21678I$	0
$u = -0.965899 + 0.256296I$ $a = -0.99583 - 1.74154I$ $b = -1.049970 + 0.394446I$	$-2.68165 + 2.67345I$	0
$u = -0.965899 - 0.256296I$ $a = -0.99583 + 1.74154I$ $b = -1.049970 - 0.394446I$	$-2.68165 - 2.67345I$	0
$u = -0.896724 + 0.456096I$ $a = -0.092216 + 0.231496I$ $b = 0.429580 + 0.543361I$	$0.100178 - 0.283803I$	0
$u = -0.896724 - 0.456096I$ $a = -0.092216 - 0.231496I$ $b = 0.429580 - 0.543361I$	$0.100178 + 0.283803I$	0
$u = 0.859646 + 0.497283I$ $a = -0.52080 + 2.39634I$ $b = -0.930896 - 0.466209I$	$3.08017 - 4.18267I$	0
$u = 0.859646 - 0.497283I$ $a = -0.52080 - 2.39634I$ $b = -0.930896 + 0.466209I$	$3.08017 + 4.18267I$	0
$u = -0.664667 + 0.756869I$ $a = -0.053899 + 1.310560I$ $b = 0.606787 - 0.823071I$	$8.69978 + 0.83422I$	0
$u = -0.664667 - 0.756869I$ $a = -0.053899 - 1.310560I$ $b = 0.606787 + 0.823071I$	$8.69978 - 0.83422I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.255024 + 0.958228I$ $a = 1.22671 + 1.38675I$ $b = -1.047270 - 0.391591I$	$0.18214 - 4.88214I$	0
$u = -0.255024 - 0.958228I$ $a = 1.22671 - 1.38675I$ $b = -1.047270 + 0.391591I$	$0.18214 + 4.88214I$	0
$u = 0.852957 + 0.467639I$ $a = -0.358332 - 0.587928I$ $b = 0.558508 - 0.610769I$	$5.28770 + 3.54945I$	0
$u = 0.852957 - 0.467639I$ $a = -0.358332 + 0.587928I$ $b = 0.558508 + 0.610769I$	$5.28770 - 3.54945I$	0
$u = -0.458068 + 0.947743I$ $a = 0.328346 + 1.239270I$ $b = 0.341772 - 0.633589I$	$-0.30629 - 1.47045I$	0
$u = -0.458068 - 0.947743I$ $a = 0.328346 - 1.239270I$ $b = 0.341772 + 0.633589I$	$-0.30629 + 1.47045I$	0
$u = 0.678873 + 0.626121I$ $a = 1.18836 - 1.02645I$ $b = -0.757090 + 0.486265I$	$3.62452 - 0.25444I$	$-12.00000 + 0.I$
$u = 0.678873 - 0.626121I$ $a = 1.18836 + 1.02645I$ $b = -0.757090 - 0.486265I$	$3.62452 + 0.25444I$	$-12.00000 + 0.I$
$u = 0.119286 + 0.909951I$ $a = 1.22475 - 1.50418I$ $b = -1.071070 + 0.323375I$	$-3.94455 + 1.08858I$	$-17.6433 + 0.I$
$u = 0.119286 - 0.909951I$ $a = 1.22475 + 1.50418I$ $b = -1.071070 - 0.323375I$	$-3.94455 - 1.08858I$	$-17.6433 + 0.I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.054683 + 0.909702I$ $a = 1.07662 + 1.64430I$ $b = -1.126830 - 0.260614I$	$-0.13399 + 2.63215I$	$-12.00000 - 4.25973I$
$u = 0.054683 - 0.909702I$ $a = 1.07662 - 1.64430I$ $b = -1.126830 + 0.260614I$	$-0.13399 - 2.63215I$	$-12.00000 + 4.25973I$
$u = -0.552950 + 0.718959I$ $a = -0.470014 - 1.024770I$ $b = 1.024520 + 0.708766I$	$7.46771 - 4.86452I$	$-5.39463 + 0.I$
$u = -0.552950 - 0.718959I$ $a = -0.470014 + 1.024770I$ $b = 1.024520 - 0.708766I$	$7.46771 + 4.86452I$	$-5.39463 + 0.I$
$u = 1.077250 + 0.202520I$ $a = 1.49875 - 0.60317I$ $b = 1.007730 + 0.542878I$	$3.95319 - 1.01949I$	0
$u = 1.077250 - 0.202520I$ $a = 1.49875 + 0.60317I$ $b = 1.007730 - 0.542878I$	$3.95319 + 1.01949I$	0
$u = 0.847792 + 0.305277I$ $a = -0.306504 - 1.308290I$ $b = 0.816745 + 0.899720I$	$5.48740 - 6.77518I$	$-12.0000 + 8.1278I$
$u = 0.847792 - 0.305277I$ $a = -0.306504 + 1.308290I$ $b = 0.816745 - 0.899720I$	$5.48740 + 6.77518I$	$-12.0000 - 8.1278I$
$u = 0.505238 + 0.996875I$ $a = 0.276220 - 1.351900I$ $b = 0.335981 + 0.733204I$	$4.20848 + 5.36069I$	0
$u = 0.505238 - 0.996875I$ $a = 0.276220 + 1.351900I$ $b = 0.335981 - 0.733204I$	$4.20848 - 5.36069I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.879562 + 0.061987I$ $a = -1.67185 - 0.65129I$ $b = -1.118850 + 0.248432I$	$-3.01354 - 0.43650I$	$-16.9920 + 5.6265I$
$u = 0.879562 - 0.061987I$ $a = -1.67185 + 0.65129I$ $b = -1.118850 - 0.248432I$	$-3.01354 + 0.43650I$	$-16.9920 - 5.6265I$
$u = 1.010690 + 0.491378I$ $a = -0.304624 + 0.260791I$ $b = 0.311768 - 0.732223I$	$1.33313 - 3.20923I$	0
$u = 1.010690 - 0.491378I$ $a = -0.304624 - 0.260791I$ $b = 0.311768 + 0.732223I$	$1.33313 + 3.20923I$	0
$u = -0.697298 + 0.512897I$ $a = -0.85017 - 1.31278I$ $b = -1.203620 - 0.053436I$	$2.04651 + 2.09519I$	$-6.28035 - 5.02967I$
$u = -0.697298 - 0.512897I$ $a = -0.85017 + 1.31278I$ $b = -1.203620 + 0.053436I$	$2.04651 - 2.09519I$	$-6.28035 + 5.02967I$
$u = 0.415660 + 0.730923I$ $a = -0.077135 - 1.102180I$ $b = 0.691438 + 0.664577I$	$3.13379 - 1.41013I$	$-5.75364 + 1.93454I$
$u = 0.415660 - 0.730923I$ $a = -0.077135 + 1.102180I$ $b = 0.691438 - 0.664577I$	$3.13379 + 1.41013I$	$-5.75364 - 1.93454I$
$u = -0.978284 + 0.623736I$ $a = -0.719027 - 0.315629I$ $b = 0.422219 + 0.829820I$	$7.68710 + 4.41199I$	0
$u = -0.978284 - 0.623736I$ $a = -0.719027 + 0.315629I$ $b = 0.422219 - 0.829820I$	$7.68710 - 4.41199I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.804564 + 0.094462I$ $a = -0.412124 + 1.223020I$ $b = 0.928475 - 0.856899I$	$5.15559 - 0.37233I$	$-13.56324 + 1.75422I$
$u = 0.804564 - 0.094462I$ $a = -0.412124 - 1.223020I$ $b = 0.928475 + 0.856899I$	$5.15559 + 0.37233I$	$-13.56324 - 1.75422I$
$u = -1.183540 + 0.152520I$ $a = 0.584352 + 0.866013I$ $b = -0.327386 - 0.735963I$	$-1.90155 - 2.90937I$	0
$u = -1.183540 - 0.152520I$ $a = 0.584352 - 0.866013I$ $b = -0.327386 + 0.735963I$	$-1.90155 + 2.90937I$	0
$u = 1.167870 + 0.278365I$ $a = 0.687171 - 0.928053I$ $b = -0.421218 + 0.731632I$	$-5.42236 - 1.22087I$	0
$u = 1.167870 - 0.278365I$ $a = 0.687171 + 0.928053I$ $b = -0.421218 - 0.731632I$	$-5.42236 + 1.22087I$	0
$u = -1.161710 + 0.380863I$ $a = 0.754334 + 0.984612I$ $b = -0.493125 - 0.737361I$	$-1.13135 + 5.34314I$	0
$u = -1.161710 - 0.380863I$ $a = 0.754334 - 0.984612I$ $b = -0.493125 + 0.737361I$	$-1.13135 - 5.34314I$	0
$u = -0.760304 + 0.132527I$ $a = -0.345603 + 1.251750I$ $b = 0.865317 - 0.863222I$	$1.28913 + 3.15635I$	$-18.6926 - 4.9567I$
$u = -0.760304 - 0.132527I$ $a = -0.345603 - 1.251750I$ $b = 0.865317 + 0.863222I$	$1.28913 - 3.15635I$	$-18.6926 + 4.9567I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.118500 + 0.552200I$ $a = 0.95395 + 1.54284I$ $b = 1.114870 - 0.615352I$	$5.60729 + 9.79157I$	0
$u = -1.118500 - 0.552200I$ $a = 0.95395 - 1.54284I$ $b = 1.114870 + 0.615352I$	$5.60729 - 9.79157I$	0
$u = -1.226270 + 0.279300I$ $a = 1.044130 + 0.778399I$ $b = 1.067550 - 0.516419I$	$-1.78322 + 4.05653I$	0
$u = -1.226270 - 0.279300I$ $a = 1.044130 - 0.778399I$ $b = 1.067550 + 0.516419I$	$-1.78322 - 4.05653I$	0
$u = 0.341376 + 0.658757I$ $a = 0.850121 - 0.679018I$ $b = 0.134755 + 0.186887I$	$2.73869 - 2.12194I$	$-5.45556 + 2.97058I$
$u = 0.341376 - 0.658757I$ $a = 0.850121 + 0.679018I$ $b = 0.134755 - 0.186887I$	$2.73869 + 2.12194I$	$-5.45556 - 2.97058I$
$u = 0.237869 + 1.242390I$ $a = -0.439691 + 0.766188I$ $b = 1.059290 - 0.500801I$	$0.93403 + 1.83086I$	0
$u = 0.237869 - 1.242390I$ $a = -0.439691 - 0.766188I$ $b = 1.059290 + 0.500801I$	$0.93403 - 1.83086I$	0
$u = 0.131680 + 0.704994I$ $a = -0.328865 + 0.986806I$ $b = 0.921623 - 0.644162I$	$2.47180 + 3.64125I$	$-5.93260 - 6.08823I$
$u = 0.131680 - 0.704994I$ $a = -0.328865 - 0.986806I$ $b = 0.921623 + 0.644162I$	$2.47180 - 3.64125I$	$-5.93260 + 6.08823I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.364857 + 1.236950I$ $a = -0.495662 - 0.796350I$ $b = 1.095170 + 0.535588I$	$-2.46443 - 6.07420I$	0
$u = -0.364857 - 1.236950I$ $a = -0.495662 + 0.796350I$ $b = 1.095170 - 0.535588I$	$-2.46443 + 6.07420I$	0
$u = 1.258950 + 0.297340I$ $a = -0.401660 - 0.297563I$ $b = -1.314010 + 0.281641I$	$-4.86882 + 0.96261I$	0
$u = 1.258950 - 0.297340I$ $a = -0.401660 + 0.297563I$ $b = -1.314010 - 0.281641I$	$-4.86882 - 0.96261I$	0
$u = 0.458497 + 1.227020I$ $a = -0.532964 + 0.821965I$ $b = 1.118460 - 0.562936I$	$1.92668 + 10.29270I$	0
$u = 0.458497 - 1.227020I$ $a = -0.532964 - 0.821965I$ $b = 1.118460 + 0.562936I$	$1.92668 - 10.29270I$	0
$u = 1.187880 + 0.553524I$ $a = -0.355130 + 0.685776I$ $b = 0.239674 - 0.902710I$	$0.19904 - 3.04869I$	0
$u = 1.187880 - 0.553524I$ $a = -0.355130 - 0.685776I$ $b = 0.239674 + 0.902710I$	$0.19904 + 3.04869I$	0
$u = -1.251460 + 0.405072I$ $a = -0.311122 + 0.114315I$ $b = -1.340840 - 0.245232I$	$-8.19580 + 3.31639I$	0
$u = -1.251460 - 0.405072I$ $a = -0.311122 - 0.114315I$ $b = -1.340840 + 0.245232I$	$-8.19580 - 3.31639I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.250310+0.409568I$ $a=-0.27505-1.58198I$ $b=-1.122860+0.534778I$	$-4.28336+1.91291I$	0
$u=-1.250310-0.409568I$ $a=-0.27505+1.58198I$ $b=-1.122860-0.534778I$	$-4.28336-1.91291I$	0
$u=1.245540+0.444122I$ $a=0.86118-1.13024I$ $b=1.119470+0.554114I$	$-1.00865-8.08532I$	0
$u=1.245540-0.444122I$ $a=0.86118+1.13024I$ $b=1.119470-0.554114I$	$-1.00865+8.08532I$	0
$u=1.238600+0.485737I$ $a=-0.238880+0.015588I$ $b=-1.358710+0.216589I$	$-3.76353-7.55514I$	0
$u=1.238600-0.485737I$ $a=-0.238880-0.015588I$ $b=-1.358710-0.216589I$	$-3.76353+7.55514I$	0
$u=1.248460+0.507912I$ $a=-0.17120+1.69208I$ $b=-1.098050-0.574579I$	$-7.44285-6.21744I$	0
$u=1.248460-0.507912I$ $a=-0.17120-1.69208I$ $b=-1.098050+0.574579I$	$-7.44285+6.21744I$	0
$u=-1.199110+0.632919I$ $a=-0.476470-0.759573I$ $b=0.281258+0.951290I$	$-2.72286+7.32646I$	0
$u=-1.199110-0.632919I$ $a=-0.476470+0.759573I$ $b=0.281258-0.951290I$	$-2.72286-7.32646I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.236410+0.575925I$ $a=-0.10670-1.76523I$ $b=-1.076880+0.600242I$	$-2.88830+10.46490I$	0
$u=-1.236410-0.575925I$ $a=-0.10670+1.76523I$ $b=-1.076880-0.600242I$	$-2.88830-10.46490I$	0
$u=1.192890+0.683328I$ $a=-0.556877+0.795127I$ $b=0.311441-0.974383I$	$1.98421-11.53410I$	0
$u=1.192890-0.683328I$ $a=-0.556877-0.795127I$ $b=0.311441+0.974383I$	$1.98421+11.53410I$	0
$u=1.34180+0.63995I$ $a=0.457492-1.332140I$ $b=1.196990+0.583051I$	$-2.67024-8.45023I$	0
$u=1.34180-0.63995I$ $a=0.457492+1.332140I$ $b=1.196990-0.583051I$	$-2.67024+8.45023I$	0
$u=1.28912+0.75340I$ $a=0.36121-1.54178I$ $b=1.209450+0.627942I$	$-0.7652-17.3335I$	0
$u=1.28912-0.75340I$ $a=0.36121+1.54178I$ $b=1.209450-0.627942I$	$-0.7652+17.3335I$	0
$u=-1.31875+0.71144I$ $a=0.38934+1.45200I$ $b=1.207890-0.609037I$	$-5.54444+12.98070I$	0
$u=-1.31875-0.71144I$ $a=0.38934-1.45200I$ $b=1.207890+0.609037I$	$-5.54444-12.98070I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.497844$ $a=\ \ 0.865204$ $b=-0.0717077$	-0.675799	-14.6910
$u=-0.326069+0.266750I$ $a=\ \ 1.77180+0.55149I$ $b=-0.719427-0.150406I$	$-0.978110-0.104240I$	$-10.05546-1.12981I$
$u=-0.326069-0.266750I$ $a=\ \ 1.77180-0.55149I$ $b=-0.719427+0.150406I$	$-0.978110+0.104240I$	$-10.05546+1.12981I$
$u=-0.400500+0.102762I$ $a=-7.18535-4.89337I$ $b=-0.879416+0.112735I$	$1.77306-2.64662I$	$-33.5126-4.0993I$
$u=-0.400500-0.102762I$ $a=-7.18535+4.89337I$ $b=-0.879416-0.112735I$	$1.77306+2.64662I$	$-33.5126+4.0993I$
$u=-1.59121+0.07207I$ $a=\ \ 0.446162-0.200488I$ $b=\ \ 1.058940+0.304432I$	$-5.92991-5.44719I$	0
$u=-1.59121-0.07207I$ $a=\ \ 0.446162+0.200488I$ $b=\ \ 1.058940-0.304432I$	$-5.92991+5.44719I$	0
$u=-1.58344+0.30802I$ $a=\ \ 0.395590-0.007776I$ $b=\ \ 0.988167+0.243027I$	$-5.46115+3.91765I$	0
$u=-1.58344-0.30802I$ $a=\ \ 0.395590+0.007776I$ $b=\ \ 0.988167-0.243027I$	$-5.46115-3.91765I$	0
$u=\ \ 1.60314+0.19201I$ $a=\ \ 0.413865+0.095304I$ $b=\ \ 1.025450-0.268432I$	$-9.63402+0.74509I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.60314 - 0.19201I$ $a = 0.413865 - 0.095304I$ $b = 1.025450 + 0.268432I$	$-9.63402 - 0.74509I$	0
$u = 0.341325$ $a = -10.9115$ $b = -0.954265$	-2.53188	-77.9360

II. $I_2^u = \langle b+1,\ u^5-4u^3-u^2+a+4u+3,\ u^6-u^5-3u^4+2u^3+2u^2+u-1\rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_6 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-u^5+4u^3+u^2-4u-3\\-1\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-u\\-u^3+u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-u^5+4u^3+u^2-4u-4\\-1\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-1\\0\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-u^5+4u^3+u^2-4u-3\\-1\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-u^2+1\\-u^4+2u^2\end{pmatrix}$$
$$a_9 = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}u^5-2u^3-u\\u^5-3u^3+u\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 7u^5-3u^4-19u^3+5u^2+8u-6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^6$
c_3, c_6	y^6
c_5, c_7, c_9 c_{10}	$y^6 - 7y^5 + 17y^4 - 16y^3 + 6y^2 - 5y + 1$
c_8, c_{11}, c_{12}	$y^6 + 5y^5 + 9y^4 + 4y^3 - 6y^2 - 5y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.493180+0.575288I$ $a=\ \ 0.26610-1.72116I$ $b=-1.00000$	$1.31531+1.97241I$	$-15.7816-4.5012I$
$u=-0.493180-0.575288I$ $a=\ \ 0.26610+1.72116I$ $b=-1.00000$	$1.31531-1.97241I$	$-15.7816+4.5012I$
$u=\ \ 0.483672$ $a=-4.27462$ $b=-1.00000$	-2.38379	-3.08970
$u=\ \ 1.52087+0.16310I$ $a=-0.417699+0.090629I$ $b=-1.00000$	$-5.34051-4.59213I$	$-11.43321+5.39767I$
$u=\ \ 1.52087-0.16310I$ $a=-0.417699-0.090629I$ $b=-1.00000$	$-5.34051+4.59213I$	$-11.43321-5.39767I$
$u=-1.53904$ $a=-0.422181$ $b=-1.00000$	-9.30502	-14.4810

III. $I_1^v = \langle a,\ v^2 + b + 2v,\ v^3 + 3v^2 + 2v + 1\rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0 \\ -v^2 - 2v \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -v^2 - 2v \\ -v^2 - 2v \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -v^2 - 2v \\ v + 2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} v^2 + 3v + 2 \\ v^2 + 3v + 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} v^2 + 2v \\ -v - 2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -1 \\ -v - 2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -v^2 - 2v - 1 \\ -v^2 - 2v + 1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} v + 1 \\ 2v^2 + 6v + 3 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -5v^2 - 11v - 13$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$v = -0.337641 + 0.562280I$ $a = 0$ $b = 0.877439 - 0.744862I$	$6.04826 + 5.65624I$	$-8.27516 - 4.28659I$
$v = -0.337641 - 0.562280I$ $a = 0$ $b = 0.877439 + 0.744862I$	$6.04826 - 5.65624I$	$-8.27516 + 4.28659I$
$v = -2.32472$ $a = 0$ $b = -0.754878$	-2.22691	-14.4500

IV. $\boldsymbol{I_2^v =}$
$\boldsymbol{\langle a,\ -6v^5+29v^4-57v^3-43v^2+10b+2v-1,\ v^6-5v^5+10v^4+7v^3-4v^2-2v+1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0 \\ \frac{3}{5}v^5 - \frac{29}{10}v^4 + \cdots - \frac{1}{5}v + \frac{1}{10} \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} \frac{3}{5}v^5 - \frac{29}{10}v^4 + \cdots - \frac{1}{5}v + \frac{1}{10} \\ \frac{3}{5}v^5 - \frac{29}{10}v^4 + \cdots - \frac{1}{5}v + \frac{1}{10} \end{pmatrix}$$
$$a_1 = \begin{pmatrix} \frac{3}{5}v^5 - \frac{29}{10}v^4 + \cdots - \frac{1}{5}v + \frac{1}{10} \\ -\frac{9}{20}v^5 + \frac{11}{5}v^4 + \cdots + \frac{3}{20}v + \frac{9}{4} \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -1.05000v^5 + 5.10000v^4 + \cdots + 0.350000v + 2.15000 \\ -1.05000v^5 + 5.10000v^4 + \cdots + 0.350000v + 1.15000 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -\frac{3}{5}v^5 + \frac{29}{10}v^4 + \cdots + \frac{1}{5}v - \frac{1}{10} \\ \frac{9}{20}v^5 - \frac{11}{5}v^4 + \cdots - \frac{3}{20}v - \frac{9}{4} \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.650000v^5 + 3.30000v^4 + \cdots + 0.550000v - 0.0500000 \\ \frac{9}{20}v^5 - \frac{11}{5}v^4 + \cdots - \frac{3}{20}v - \frac{9}{4} \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -\frac{1}{10}v^5 + \frac{3}{10}v^4 + \cdots - \frac{13}{10}v + \frac{3}{5} \\ \frac{1}{5}v^5 - \frac{7}{10}v^4 + \cdots - \frac{7}{5}v - \frac{3}{2} \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} \frac{1}{4}v^5 - \frac{13}{10}v^4 + \cdots + \frac{5}{4}v - \frac{3}{20} \\ \frac{7}{20}v^5 - \frac{21}{10}v^4 + \cdots - \frac{49}{20}v + \frac{7}{4} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{3}{5}v^5 - \frac{17}{5}v^4 + \frac{41}{5}v^3 + \frac{4}{5}v^2 - \frac{26}{5}v - \frac{37}{5}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = -0.609638 + 0.241870I$ $a = 0$ $b = 0.877439 + 0.744862I$	6.04826	$-4.97493 + 1.29886I$
$v = -0.609638 - 0.241870I$ $a = 0$ $b = 0.877439 - 0.744862I$	6.04826	$-4.97493 - 1.29886I$
$v = 0.407481 + 0.137827I$ $a = 0$ $b = 0.877439 + 0.744862I$	$1.91067 - 2.82812I$	$-9.06804 - 0.18883I$
$v = 0.407481 - 0.137827I$ $a = 0$ $b = 0.877439 - 0.744862I$	$1.91067 + 2.82812I$	$-9.06804 + 0.18883I$
$v = 2.70216 + 2.29387I$ $a = 0$ $b = -0.754878$	$1.91067 - 2.82812I$	$-11.4570 + 15.2977I$
$v = 2.70216 - 2.29387I$ $a = 0$ $b = -0.754878$	$1.91067 + 2.82812I$	$-11.4570 - 15.2977I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^6)(u^3-u^2+2u-1)^3(u^{102}+50u^{101}+\cdots+200u+1)$
c_2	$((u-1)^6)(u^3+u^2-1)^3(u^{102}-10u^{101}+\cdots-100u^2+1)$
c_3	$u^6(u^3-u^2+2u-1)^3(u^{102}-4u^{101}+\cdots+384u-64)$
c_4	$((u+1)^6)(u^3-u^2+1)^3(u^{102}-10u^{101}+\cdots-100u^2+1)$
c_5	$u^9(u^6-u^5+\cdots+u-1)(u^{102}-2u^{101}+\cdots-1024u-512)$
c_6	$u^6(u^3+u^2+2u+1)^3(u^{102}-4u^{101}+\cdots+384u-64)$
c_7, c_9	$(u^3+u^2-1)^3(u^6-u^5-3u^4+2u^3+2u^2+u-1)$ $\cdot(u^{102}+5u^{101}+\cdots+22859u+3137)$
c_8	$(u^3-u^2+2u-1)^3(u^6+u^5+3u^4+2u^3+2u^2+u-1)$ $\cdot(u^{102}-5u^{101}+\cdots+3u+1)$
c_{10}	$u^9(u^6+u^5+\cdots-u-1)(u^{102}-2u^{101}+\cdots-1024u-512)$
c_{11}, c_{12}	$(u^3+u^2+2u+1)^3(u^6-u^5+3u^4-2u^3+2u^2-u-1)$ $\cdot(u^{102}-5u^{101}+\cdots+3u+1)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^6)(y^3+3y^2+2y-1)^3(y^{102}+14y^{101}+\cdots-37224y+1)$
c_2, c_4	$((y-1)^6)(y^3-y^2+2y-1)^3(y^{102}-50y^{101}+\cdots-200y+1)$
c_3, c_6	$y^6(y^3+3y^2+2y-1)^3(y^{102}+48y^{101}+\cdots-24576y+4096)$
c_5, c_{10}	$y^9(y^6-7y^5+17y^4-16y^3+6y^2-5y+1)$ $\cdot\,(y^{102}-56y^{101}+\cdots-10878976y+262144)$
c_7, c_9	$(y^3-y^2+2y-1)^3(y^6-7y^5+17y^4-16y^3+6y^2-5y+1)$ $\cdot\,(y^{102}-71y^{101}+\cdots+595599577y+9840769)$
c_8, c_{11}, c_{12}	$(y^3+3y^2+2y-1)^3(y^6+5y^5+9y^4+4y^3-6y^2-5y+1)$ $\cdot\,(y^{102}+85y^{101}+\cdots+57y+1)$