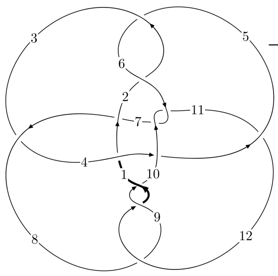
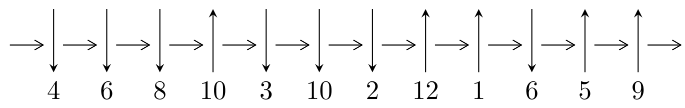
$12n_{0754}$ $(K12n_{0754})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 2.68814 \times 10^{39} u^{31} + 4.43259 \times 10^{39} u^{30} + \cdots + 1.03715 \times 10^{39} b + 8.81961 \times 10^{39}, \\
& - 2.68814 \times 10^{39} u^{31} - 4.43259 \times 10^{39} u^{30} + \cdots + 1.03715 \times 10^{39} a - 9.85676 \times 10^{39},\ u^{32} + 2u^{31} + \cdots + 3u - \\
I_2^u = \langle & -9.65086 \times 10^{81} u^{35} - 1.35252 \times 10^{82} u^{34} + \cdots + 5.32581 \times 10^{85} b + 4.57159 \times 10^{85}, \\
& - 7.17774 \times 10^{84} u^{35} - 2.27336 \times 10^{85} u^{34} + \cdots + 7.05055 \times 10^{87} a + 1.28066 \times 10^{88}, \\
& u^{36} + 2u^{35} + \cdots - 345u + 1721 \rangle \\
I_3^u = \langle & -588u^{14} - 1117u^{13} + \cdots + 1513b + 3572,\ 588u^{14} + 1117u^{13} + \cdots + 1513a - 2059, \\
& u^{15} + 3u^{14} + 3u^{13} - 7u^{11} - 16u^{10} - 14u^9 + 2u^8 + 26u^7 + 50u^6 + 59u^5 + 48u^4 + 30u^3 + 13u^2 + 4u + 1 \rangle \\
I_4^u = \langle & b,\ a - 1,\ u - 1 \rangle \\
I_5^u = \langle & b,\ a - u - 2,\ u^2 + u - 1 \rangle
\end{aligned}$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 86 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.

$\boldsymbol{I^u_1 = \langle 2.69\times 10^{39}u^{31} + 4.43\times 10^{39}u^{30} + \cdots + 1.04\times 10^{39}b + 8.82\times 10^{39},\ -2.69\times 10^{39}u^{31} - 4.43\times 10^{39}u^{30} + \cdots + 1.04\times 10^{39}a - 9.86\times 10^{39},\ u^{32} + 2u^{31} + \cdots + 3u + 1\rangle}$

(i) Arc colorings

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

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

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

$$a_3 = \begin{pmatrix} 2.59186u^{31} + 4.27384u^{30} + \cdots + 0.0225842u + 9.50373 \\ -2.59186u^{31} - 4.27384u^{30} + \cdots - 0.0225842u - 8.50373 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 1 \\ -2.59186u^{31} - 4.27384u^{30} + \cdots - 0.0225842u - 8.50373 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -2.59186u^{31} - 4.27384u^{30} + \cdots - 0.0225842u - 7.50373 \\ 0.934704u^{31} + 1.45438u^{30} + \cdots + 1.23689u + 2.26933 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 3.21748u^{31} + 5.20620u^{30} + \cdots + 1.12168u + 10.8632 \\ -0.625617u^{31} - 0.932359u^{30} + \cdots - 1.09909u - 1.35945 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.835399u^{31} - 1.31731u^{30} + \cdots - 0.385321u - 1.44477 \\ -1.30325u^{31} - 2.20760u^{30} + \cdots + 2.32421u - 4.36458 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 3.21748u^{31} + 5.20620u^{30} + \cdots + 1.12168u + 10.8632 \\ -0.182315u^{31} - 0.176177u^{30} + \cdots - 0.630287u - 0.130685 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1.47940u^{31} + 2.41530u^{30} + \cdots - 0.101041u + 4.07523 \\ 0.504058u^{31} + 0.994655u^{30} + \cdots - 0.583979u + 1.83194 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -1.16297u^{31} - 1.83866u^{30} + \cdots - 0.347165u - 4.48853 \\ 0.540348u^{31} + 0.679881u^{30} + \cdots + 0.438800u + 2.01562 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 8.53130u^{31} + 14.3893u^{30} + \cdots + 9.88172u + 20.4373$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^{32} - 2u^{30} + \cdots + 6u^2 + 1$
c_2, c_5	$u^{32} - 9u^{31} + \cdots - 12u + 9$
c_4	$u^{32} - 2u^{31} + \cdots + 22u + 4$
c_6, c_{10}	$u^{32} - 2u^{31} + \cdots - 3u + 1$
c_7	$u^{32} + 31u^{31} + \cdots + 1966080u + 131072$
c_8, c_9, c_{12}	$u^{32} - 10u^{31} + \cdots + 24u + 9$
c_{11}	$u^{32} - 2u^{31} + \cdots - 926u + 233$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^{32} - 4y^{31} + \cdots + 12y + 1$
c_2, c_5	$y^{32} + 13y^{31} + \cdots - 630y + 81$
c_4	$y^{32} + 2y^{31} + \cdots - 188y + 16$
c_6, c_{10}	$y^{32} - 40y^{31} + \cdots - 11y + 1$
c_7	$y^{32} + 3y^{31} + \cdots - 51539607552y + 17179869184$
c_8, c_9, c_{12}	$y^{32} - 34y^{31} + \cdots + 1260y + 81$
c_{11}	$y^{32} + 30y^{31} + \cdots + 118794y + 54289$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.727787 + 0.359428I$ $a = 1.50645 + 0.30685I$ $b = -0.506447 - 0.306846I$	$3.01151 - 0.12453I$	$2.01930 - 0.65952I$
$u = -0.727787 - 0.359428I$ $a = 1.50645 - 0.30685I$ $b = -0.506447 + 0.306846I$	$3.01151 + 0.12453I$	$2.01930 + 0.65952I$
$u = -1.088820 + 0.491186I$ $a = 0.429547 + 0.223085I$ $b = 0.570453 - 0.223085I$	$2.15764 - 0.43132I$	$3.87708 + 2.50521I$
$u = -1.088820 - 0.491186I$ $a = 0.429547 - 0.223085I$ $b = 0.570453 + 0.223085I$	$2.15764 + 0.43132I$	$3.87708 - 2.50521I$
$u = 0.123243 + 0.684919I$ $a = 1.074160 + 0.889657I$ $b = -0.074156 - 0.889657I$	$1.24572 - 1.59798I$	$-0.69901 + 4.34280I$
$u = 0.123243 - 0.684919I$ $a = 1.074160 - 0.889657I$ $b = -0.074156 + 0.889657I$	$1.24572 + 1.59798I$	$-0.69901 - 4.34280I$
$u = -0.181903 + 0.562687I$ $a = 1.76402 - 0.20287I$ $b = -0.764020 + 0.202871I$	$3.20927 + 1.51045I$	$1.61636 - 4.36798I$
$u = -0.181903 - 0.562687I$ $a = 1.76402 + 0.20287I$ $b = -0.764020 - 0.202871I$	$3.20927 - 1.51045I$	$1.61636 + 4.36798I$
$u = 0.570063 + 0.113911I$ $a = 1.10156 - 1.54628I$ $b = -0.10156 + 1.54628I$	$9.84884 + 5.18562I$	$1.41138 - 2.71485I$
$u = 0.570063 - 0.113911I$ $a = 1.10156 + 1.54628I$ $b = -0.10156 - 1.54628I$	$9.84884 - 5.18562I$	$1.41138 + 2.71485I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.097390 + 0.483297I$ $a = 1.44762 - 1.17049I$ $b = -0.447624 + 1.170490I$	$5.83833 + 4.06602I$	$6.43607 - 3.22823I$
$u = 0.097390 - 0.483297I$ $a = 1.44762 + 1.17049I$ $b = -0.447624 - 1.170490I$	$5.83833 - 4.06602I$	$6.43607 + 3.22823I$
$u = -1.30092 + 0.76651I$ $a = 0.565351 - 1.100220I$ $b = 0.434649 + 1.100220I$	$4.66242 - 4.30535I$	0
$u = -1.30092 - 0.76651I$ $a = 0.565351 + 1.100220I$ $b = 0.434649 - 1.100220I$	$4.66242 + 4.30535I$	0
$u = -1.58301 + 0.10612I$ $a = -0.040653 - 0.769050I$ $b = 1.040650 + 0.769050I$	$-5.78170 + 5.02185I$	0
$u = -1.58301 - 0.10612I$ $a = -0.040653 + 0.769050I$ $b = 1.040650 - 0.769050I$	$-5.78170 - 5.02185I$	0
$u = 1.59789 + 0.07572I$ $a = 0.152087 + 0.822987I$ $b = 0.847913 - 0.822987I$	$-4.90783 - 0.17419I$	0
$u = 1.59789 - 0.07572I$ $a = 0.152087 - 0.822987I$ $b = 0.847913 + 0.822987I$	$-4.90783 + 0.17419I$	0
$u = 1.59468 + 0.12683I$ $a = -0.176743 + 0.703049I$ $b = 1.176740 - 0.703049I$	$0.33699 - 8.78781I$	0
$u = 1.59468 - 0.12683I$ $a = -0.176743 - 0.703049I$ $b = 1.176740 + 0.703049I$	$0.33699 + 8.78781I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.224964 + 0.303301I$ $a = 1.60702 + 0.01432I$ $b = -0.607019 - 0.014324I$	$-1.277390 - 0.391091I$	$-8.45483 + 1.44760I$
$u = 0.224964 - 0.303301I$ $a = 1.60702 - 0.01432I$ $b = -0.607019 + 0.014324I$	$-1.277390 + 0.391091I$	$-8.45483 - 1.44760I$
$u = -0.329013 + 0.018023I$ $a = 1.16462 + 1.38080I$ $b = -0.164619 - 1.380800I$	$3.64918 - 3.45629I$	$-10.02596 + 4.62950I$
$u = -0.329013 - 0.018023I$ $a = 1.16462 - 1.38080I$ $b = -0.164619 + 1.380800I$	$3.64918 + 3.45629I$	$-10.02596 - 4.62950I$
$u = -1.74543 + 0.37989I$ $a = 0.439100 + 0.949102I$ $b = 0.560900 - 0.949102I$	$4.10800 + 2.16881I$	0
$u = -1.74543 - 0.37989I$ $a = 0.439100 - 0.949102I$ $b = 0.560900 + 0.949102I$	$4.10800 - 2.16881I$	0
$u = 1.71462 + 0.67318I$ $a = 0.120504 - 1.186710I$ $b = 0.87950 + 1.18671I$	$1.9107 - 16.1447I$	0
$u = 1.71462 - 0.67318I$ $a = 0.120504 + 1.186710I$ $b = 0.87950 - 1.18671I$	$1.9107 + 16.1447I$	0
$u = -1.72533 + 0.66821I$ $a = 0.136057 + 1.096830I$ $b = 0.863943 - 1.096830I$	$-4.72526 + 11.94950I$	0
$u = -1.72533 - 0.66821I$ $a = 0.136057 - 1.096830I$ $b = 0.863943 + 1.096830I$	$-4.72526 - 11.94950I$	0

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$1.75936+0.67100I$		
$a=$	$0.209299-0.991283I$	$-4.36968-6.32073I$	0
$b=$	$0.790701+0.991283I$		
$u=$	$1.75936-0.67100I$		
$a=$	$0.209299+0.991283I$	$-4.36968+6.32073I$	0
$b=$	$0.790701-0.991283I$		

II. $\boldsymbol{I_2^u = \langle -9.65 \times 10^{81}u^{35} - 1.35 \times 10^{82}u^{34} + \cdots + 5.33 \times 10^{85}b + 4.57 \times 10^{85},\ -7.18 \times 10^{84}u^{35} - 2.27 \times 10^{85}u^{34} + \cdots + 7.05 \times 10^{87}a + 1.28 \times 10^{88},\ u^{36} + 2u^{35} + \cdots - 345u + 1721\rangle}$

(i) Arc colorings

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

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

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

$$a_3 = \begin{pmatrix} 0.00101804u^{35} + 0.00322437u^{34} + \cdots - 3.03218u - 1.81639 \\ 0.000181209u^{35} + 0.000253957u^{34} + \cdots - 1.69137u - 0.858384 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 0.00119925u^{35} + 0.00347833u^{34} + \cdots - 4.72355u - 2.67478 \\ 0.000181209u^{35} + 0.000253957u^{34} + \cdots - 1.69137u - 0.858384 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.00119925u^{35} + 0.00347833u^{34} + \cdots - 4.72355u - 1.67478 \\ 0.000181209u^{35} + 0.000253957u^{34} + \cdots - 1.69137u - 0.858384 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.00122718u^{35} + 0.00328059u^{34} + \cdots - 1.81467u + 0.516616 \\ -0.000330064u^{35} - 0.00139754u^{34} + \cdots + 0.178060u + 0.705552 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.000158903u^{35} + 0.00143193u^{34} + \cdots - 0.847012u - 2.41702 \\ 0.00166960u^{35} + 0.00517909u^{34} + \cdots - 0.901484u - 2.62550 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.00122718u^{35} + 0.00328059u^{34} + \cdots - 1.81467u + 0.516616 \\ 0.000525501u^{35} + 0.00101205u^{34} + \cdots - 1.64888u - 0.716369 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.000933234u^{35} + 0.00308935u^{34} + \cdots + 1.23389u - 4.21048 \\ 0.00191049u^{35} + 0.00584877u^{34} + \cdots - 0.657755u - 3.18542 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.000694411u^{35} + 0.00104134u^{34} + \cdots - 2.62227u + 2.26900 \\ -0.000527487u^{35} - 0.00143426u^{34} + \cdots + 0.446693u + 1.57292 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.00480094u^{35} + 0.0143993u^{34} + \cdots - 10.3752u - 14.3937$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^{36} - 3u^{35} + \cdots - 26u + 1$
c_2, c_5	$(u^{18} + 7u^{17} + \cdots + 3u + 2)^2$
c_4	$u^{36} + 4u^{34} + \cdots - 81u + 7$
c_6, c_{10}	$u^{36} - 2u^{35} + \cdots + 345u + 1721$
c_7	$(u-1)^{36}$
c_8, c_9, c_{12}	$(u^{18} + 2u^{17} + \cdots + 2u + 1)^2$
c_{11}	$u^{36} - 2u^{35} + \cdots - 107951u + 18799$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^{36} + 13y^{35} + \cdots - 238y + 1$
c_2, c_5	$(y^{18} + 3y^{17} + \cdots + 27y + 4)^2$
c_4	$y^{36} + 8y^{35} + \cdots + 24785y + 49$
c_6, c_{10}	$y^{36} - 24y^{35} + \cdots - 23369735y + 2961841$
c_7	$(y - 1)^{36}$
c_8, c_9, c_{12}	$(y^{18} - 18y^{17} + \cdots + 6y + 1)^2$
c_{11}	$y^{36} + 20y^{35} + \cdots + 3655697641y + 353402401$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.951328 + 0.265633I$ $a = -1.00770 + 1.00856I$ $b = -0.799005 - 0.432049I$	$-0.749045 - 0.267600I$	$-5.91340 + 2.02101I$
$u = 0.951328 - 0.265633I$ $a = -1.00770 - 1.00856I$ $b = -0.799005 + 0.432049I$	$-0.749045 + 0.267600I$	$-5.91340 - 2.02101I$
$u = -0.648013 + 0.675517I$ $a = 0.627478 - 0.216336I$ $b = 0.186015 - 0.679590I$	$1.71945 - 1.37809I$	$3.91287 - 1.41254I$
$u = -0.648013 - 0.675517I$ $a = 0.627478 + 0.216336I$ $b = 0.186015 + 0.679590I$	$1.71945 + 1.37809I$	$3.91287 + 1.41254I$
$u = 0.823523 + 0.347145I$ $a = -0.079307 + 0.626674I$ $b = 0.172943 + 0.911158I$	$8.82842 + 4.51784I$	$4.44915 - 1.04065I$
$u = 0.823523 - 0.347145I$ $a = -0.079307 - 0.626674I$ $b = 0.172943 - 0.911158I$	$8.82842 - 4.51784I$	$4.44915 + 1.04065I$
$u = 0.078059 + 1.130100I$ $a = 0.369477 + 1.291370I$ $b = 0.186015 - 0.679590I$	$1.71945 - 1.37809I$	$3.91287 - 1.41254I$
$u = 0.078059 - 1.130100I$ $a = 0.369477 - 1.291370I$ $b = 0.186015 + 0.679590I$	$1.71945 + 1.37809I$	$3.91287 + 1.41254I$
$u = -1.207030 + 0.342060I$ $a = -0.344195 - 1.035250I$ $b = -1.007410 + 0.797418I$	$-4.69253 + 2.67585I$	$-11.48246 + 0.04874I$
$u = -1.207030 - 0.342060I$ $a = -0.344195 + 1.035250I$ $b = -1.007410 - 0.797418I$	$-4.69253 - 2.67585I$	$-11.48246 - 0.04874I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.304090 + 0.242334I$ $a = -0.172903 + 0.923671I$ $b = -1.20068 - 1.01012I$	$-1.01052 - 4.22577I$	$-7.20649 + 4.92260I$
$u = 1.304090 - 0.242334I$ $a = -0.172903 - 0.923671I$ $b = -1.20068 + 1.01012I$	$-1.01052 + 4.22577I$	$-7.20649 - 4.92260I$
$u = 1.339670 + 0.120163I$ $a = -0.297280 + 0.744568I$ $b = -0.80875 - 1.24243I$	$1.72404 - 6.10285I$	$-0.03303 + 7.78532I$
$u = 1.339670 - 0.120163I$ $a = -0.297280 - 0.744568I$ $b = -0.80875 + 1.24243I$	$1.72404 + 6.10285I$	$-0.03303 - 7.78532I$
$u = -0.456738 + 1.298950I$ $a = -0.13350 - 1.55902I$ $b = 0.172943 + 0.911158I$	$8.82842 + 4.51784I$	$4.44915 - 1.04065I$
$u = -0.456738 - 1.298950I$ $a = -0.13350 + 1.55902I$ $b = 0.172943 - 0.911158I$	$8.82842 - 4.51784I$	$4.44915 + 1.04065I$
$u = -1.41435 + 0.18193I$ $a = -0.123524 - 0.807920I$ $b = -0.92905 + 1.08318I$	$-3.82636 + 4.39821I$	$-4.26128 - 12.11852I$
$u = -1.41435 - 0.18193I$ $a = -0.123524 + 0.807920I$ $b = -0.92905 - 1.08318I$	$-3.82636 - 4.39821I$	$-4.26128 + 12.11852I$
$u = 0.329048 + 0.415115I$ $a = 2.16953 + 1.12232I$ $b = 0.370956 + 0.584694I$	$1.15682 - 3.56504I$	$-0.39209 + 9.87971I$
$u = 0.329048 - 0.415115I$ $a = 2.16953 - 1.12232I$ $b = 0.370956 - 0.584694I$	$1.15682 + 3.56504I$	$-0.39209 - 9.87971I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.43862 + 0.58080I$ $a = 0.039810 + 1.315730I$ $b = -0.92905 - 1.08318I$	$-3.82636 - 4.39821I$	$-4.26128 + 12.11852I$
$u = 1.43862 - 0.58080I$ $a = 0.039810 - 1.315730I$ $b = -0.92905 + 1.08318I$	$-3.82636 + 4.39821I$	$-4.26128 - 12.11852I$
$u = -0.353911 + 0.263917I$ $a = 1.82923 - 2.67302I$ $b = 0.514983 - 0.621068I$	$7.54180 + 7.47357I$	$0.42672 - 8.56588I$
$u = -0.353911 - 0.263917I$ $a = 1.82923 + 2.67302I$ $b = 0.514983 + 0.621068I$	$7.54180 - 7.47357I$	$0.42672 + 8.56588I$
$u = 0.12734 + 1.61628I$ $a = -0.099767 - 0.766912I$ $b = 0.370956 + 0.584694I$	$1.15682 - 3.56504I$	$-0.39209 + 9.87971I$
$u = 0.12734 - 1.61628I$ $a = -0.099767 + 0.766912I$ $b = 0.370956 - 0.584694I$	$1.15682 + 3.56504I$	$-0.39209 - 9.87971I$
$u = -1.42189 + 0.79988I$ $a = 0.05695 - 1.58085I$ $b = -0.80875 + 1.24243I$	$1.72404 + 6.10285I$	$0. - 7.78532I$
$u = -1.42189 - 0.79988I$ $a = 0.05695 + 1.58085I$ $b = -0.80875 - 1.24243I$	$1.72404 - 6.10285I$	$0. + 7.78532I$
$u = 1.71277 + 0.17526I$ $a = 0.289764 + 0.671140I$ $b = -1.007410 - 0.797418I$	$-4.69253 - 2.67585I$	$-11.48246 + 0.I$
$u = 1.71277 - 0.17526I$ $a = 0.289764 - 0.671140I$ $b = -1.007410 + 0.797418I$	$-4.69253 + 2.67585I$	$-11.48246 + 0.I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.03972 + 1.78449I$ $a = -0.371574 + 0.822587I$ $b = 0.514983 - 0.621068I$	$7.54180 + 7.47357I$	$0. - 8.56588I$
$u = 0.03972 - 1.78449I$ $a = -0.371574 - 0.822587I$ $b = 0.514983 + 0.621068I$	$7.54180 - 7.47357I$	$0. + 8.56588I$
$u = -1.77033 + 0.44561I$ $a = 0.475535 - 1.055760I$ $b = -1.20068 + 1.01012I$	$-1.01052 + 4.22577I$	$0. - 4.92260I$
$u = -1.77033 - 0.44561I$ $a = 0.475535 + 1.055760I$ $b = -1.20068 - 1.01012I$	$-1.01052 - 4.22577I$	$0. + 4.92260I$
$u = -1.87191 + 0.06853I$ $a = 0.296661 + 0.271754I$ $b = -0.799005 - 0.432049I$	$-0.749045 - 0.267600I$	0
$u = -1.87191 - 0.06853I$ $a = 0.296661 - 0.271754I$ $b = -0.799005 + 0.432049I$	$-0.749045 + 0.267600I$	0

III. $\boldsymbol{I_3^u = \langle -588u^{14} - 1117u^{13} + \cdots + 1513b + 3572,\ 588u^{14} + 1117u^{13} + \cdots + 1513a - 2059,\ u^{15} + 3u^{14} + \cdots + 4u + 1\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -0.388632u^{14} - 0.738268u^{13} + \cdots + 5.77859u + 1.36087 \\ 0.388632u^{14} + 0.738268u^{13} + \cdots - 5.77859u - 2.36087 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -1 \\ 0.388632u^{14} + 0.738268u^{13} + \cdots - 5.77859u - 2.36087 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.388632u^{14} - 0.738268u^{13} + \cdots + 5.77859u + 3.36087 \\ 0.815598u^{14} + 1.94052u^{13} + \cdots + 7.27759u + 1.09980 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1.51091u^{14} + 3.39061u^{13} + \cdots + 0.177132u - 0.688698 \\ -1.12227u^{14} - 2.65235u^{13} + \cdots - 5.95572u - 0.672174 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.881031u^{14} - 2.28420u^{13} + \cdots - 5.34038u - 0.967614 \\ -0.688698u^{14} - 2.57700u^{13} + \cdots - 5.30734u - 0.931923 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1.51091u^{14} + 3.39061u^{13} + \cdots + 0.177132u - 0.688698 \\ -0.967614u^{14} - 2.02181u^{13} + \cdots - 2.89822u + 0.469927 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.747521u^{14} + 2.04759u^{13} + \cdots - 3.22208u - 2.47984 \\ -1.99802u^{14} - 4.83807u^{13} + \cdots - 5.42234u - 0.216127 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1.55254u^{14} + 3.79114u^{13} + \cdots + 4.30800u + 1.77264 \\ -0.0647720u^{14} + 1.04362u^{13} + \cdots + 10.7964u + 3.06015 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{11241}{1513}u^{14} - \frac{26858}{1513}u^{13} + \cdots - \frac{17389}{1513}u + \frac{5791}{1513}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^{15} + u^{14} + \cdots - u - 1$
c_2	$u^{15} - 6u^{14} + \cdots + 19u - 5$
c_4	$u^{15} - u^{14} + \cdots - 2u + 1$
c_5	$u^{15} + 6u^{14} + \cdots + 19u + 5$
c_6	$u^{15} + 3u^{14} + \cdots + 4u + 1$
c_7	$u^{15} + 3u^{14} + \cdots + 19u + 7$
c_8, c_9	$u^{15} - 3u^{14} + \cdots - 5u + 1$
c_{10}	$u^{15} - 3u^{14} + \cdots + 4u - 1$
c_{11}	$u^{15} - u^{14} + \cdots + 37u - 7$
c_{12}	$u^{15} + 3u^{14} + \cdots - 5u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^{15} + 9y^{14} + \cdots - y - 1$
c_2, c_5	$y^{15} + 10y^{14} + \cdots - 199y - 25$
c_4	$y^{15} + 7y^{14} + \cdots + 10y - 1$
c_6, c_{10}	$y^{15} - 3y^{14} + \cdots - 10y - 1$
c_7	$y^{15} + 3y^{14} + \cdots + 795y - 49$
c_8, c_9, c_{12}	$y^{15} - 17y^{14} + \cdots + 19y - 1$
c_{11}	$y^{15} + 11y^{14} + \cdots + 1817y - 49$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.987374+0.467890I$ $a=-0.579345+1.158540I$ $b=-0.420655-1.158540I$	$4.31997-4.13409I$	$-3.46958+1.84906I$
$u=-0.987374-0.467890I$ $a=-0.579345-1.158540I$ $b=-0.420655+1.158540I$	$4.31997+4.13409I$	$-3.46958-1.84906I$
$u=\ \ 0.117054+1.115160I$ $a=-1.179320+0.743611I$ $b=\ \ 0.179315-0.743611I$	$8.59029+6.53866I$	$6.63406-4.93610I$
$u=\ \ 0.117054-1.115160I$ $a=-1.179320-0.743611I$ $b=\ \ 0.179315+0.743611I$	$8.59029-6.53866I$	$6.63406+4.93610I$
$u=-0.233685+0.729101I$ $a=-1.02361-1.31637I$ $b=\ \ 0.023606+1.316370I$	$11.04790+5.60149I$	$8.37859-4.59557I$
$u=-0.233685-0.729101I$ $a=-1.02361+1.31637I$ $b=\ \ 0.023606-1.316370I$	$11.04790-5.60149I$	$8.37859+4.59557I$
$u=-0.073575+1.235960I$ $a=-0.884526-0.744696I$ $b=-0.115474+0.744696I$	$1.89869-2.15293I$	$7.70740+10.20235I$
$u=-0.073575-1.235960I$ $a=-0.884526+0.744696I$ $b=-0.115474-0.744696I$	$1.89869+2.15293I$	$7.70740-10.20235I$
$u=-0.690497$ $a=-0.235710$ $b=-0.764290$	0.864751	-3.54690
$u=-1.42824+0.34324I$ $a=\ \ 0.158166-1.046720I$ $b=-1.15817+1.04672I$	$-0.00542+4.12317I$	$3.00102-3.07740I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.42824 - 0.34324I$ $a = 0.158166 + 1.046720I$ $b = -1.15817 - 1.04672I$	$-0.00542 - 4.12317I$	$3.00102 + 3.07740I$
$u = 1.46796 + 0.35294I$ $a = -0.028861 + 0.971059I$ $b = -0.971139 - 0.971059I$	$-4.05276 - 3.56193I$	$-5.72461 + 2.61288I$
$u = 1.46796 - 0.35294I$ $a = -0.028861 - 0.971059I$ $b = -0.971139 + 0.971059I$	$-4.05276 + 3.56193I$	$-5.72461 - 2.61288I$
$u = -0.016884 + 0.466920I$ $a = -0.84466 + 1.26589I$ $b = -0.155342 - 1.265890I$	$4.08794 - 3.40468I$	$8.74659 + 3.38159I$
$u = -0.016884 - 0.466920I$ $a = -0.84466 - 1.26589I$ $b = -0.155342 + 1.265890I$	$4.08794 + 3.40468I$	$8.74659 - 3.38159I$

IV. $I_4^u = \langle b,\ a-1,\ u-1 \rangle$

(i) Arc colorings

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

$a_{10} = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$

$a_7 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$

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

$a_{11} = \begin{pmatrix} -1 \\ 1 \end{pmatrix}$

$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$

$a_8 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$

$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$

$a_{12} = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$

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

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

$a_9 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u		$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	1.00000		
$a =$	1.00000	−1.64493	−6.00000
$b =$	0		

V. $I_5^u = \langle b,\ a - u - 2,\ u^2 + u - 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 5$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.618034$ $a = 2.61803$ $b = 0$	0	5.00000
$u = -1.61803$ $a = 0.381966$ $b = 0$	0	5.00000

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_3	$((u-1)^2)(u+1)(u^{15}+u^{14}+\cdots-u-1)(u^{32}-2u^{30}+\cdots+6u^2+1)$ $\cdot(u^{36}-3u^{35}+\cdots-26u+1)$
c_2	$u^3(u^{15}-6u^{14}+\cdots+19u-5)(u^{18}+7u^{17}+\cdots+3u+2)^2$ $\cdot(u^{32}-9u^{31}+\cdots-12u+9)$
c_4	$(u+1)(u^2+u-1)(u^{15}-u^{14}+\cdots-2u+1)(u^{32}-2u^{31}+\cdots+22u+4)$ $\cdot(u^{36}+4u^{34}+\cdots-81u+7)$
c_5	$u^3(u^{15}+6u^{14}+\cdots+19u+5)(u^{18}+7u^{17}+\cdots+3u+2)^2$ $\cdot(u^{32}-9u^{31}+\cdots-12u+9)$
c_6	$(u+1)(u^2+u-1)(u^{15}+3u^{14}+\cdots+4u+1)(u^{32}-2u^{31}+\cdots-3u+1)$ $\cdot(u^{36}-2u^{35}+\cdots+345u+1721)$
c_7	$((u-1)^{36})(u+1)^3(u^{15}+3u^{14}+\cdots+19u+7)$ $\cdot(u^{32}+31u^{31}+\cdots+1966080u+131072)$
c_8, c_9	$u(u+1)^2(u^{15}-3u^{14}+\cdots-5u+1)(u^{18}+2u^{17}+\cdots+2u+1)^2$ $\cdot(u^{32}-10u^{31}+\cdots+24u+9)$
c_{10}	$(u+1)(u^2-u-1)(u^{15}-3u^{14}+\cdots+4u-1)(u^{32}-2u^{31}+\cdots-3u+1)$ $\cdot(u^{36}-2u^{35}+\cdots+345u+1721)$
c_{11}	$(u+1)(u^2-u-1)(u^{15}-u^{14}+\cdots+37u-7)$ $\cdot(u^{32}-2u^{31}+\cdots-926u+233)(u^{36}-2u^{35}+\cdots-107951u+18799)$
c_{12}	$u(u-1)^2(u^{15}+3u^{14}+\cdots-5u-1)(u^{18}+2u^{17}+\cdots+2u+1)^2$ $\cdot(u^{32}-10u^{31}+\cdots+24u+9)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3	$((y-1)^3)(y^{15}+9y^{14}+\cdots-y-1)(y^{32}-4y^{31}+\cdots+12y+1)$ $\cdot\,(y^{36}+13y^{35}+\cdots-238y+1)$
c_2, c_5	$y^3(y^{15}+10y^{14}+\cdots-199y-25)(y^{18}+3y^{17}+\cdots+27y+4)^2$ $\cdot\,(y^{32}+13y^{31}+\cdots-630y+81)$
c_4	$(y-1)(y^2-3y+1)(y^{15}+7y^{14}+\cdots+10y-1)$ $\cdot\,(y^{32}+2y^{31}+\cdots-188y+16)(y^{36}+8y^{35}+\cdots+24785y+49)$
c_6, c_{10}	$(y-1)(y^2-3y+1)(y^{15}-3y^{14}+\cdots-10y-1)$ $\cdot\,(y^{32}-40y^{31}+\cdots-11y+1)$ $\cdot\,(y^{36}-24y^{35}+\cdots-23369735y+2961841)$
c_7	$((y-1)^{39})(y^{15}+3y^{14}+\cdots+795y-49)$ $\cdot\,(y^{32}+3y^{31}+\cdots-51539607552y+17179869184)$
c_8, c_9, c_{12}	$y(y-1)^2(y^{15}-17y^{14}+\cdots+19y-1)(y^{18}-18y^{17}+\cdots+6y+1)^2$ $\cdot\,(y^{32}-34y^{31}+\cdots+1260y+81)$
c_{11}	$(y-1)(y^2-3y+1)(y^{15}+11y^{14}+\cdots+1817y-49)$ $\cdot\,(y^{32}+30y^{31}+\cdots+118794y+54289)$ $\cdot\,(y^{36}+20y^{35}+\cdots+3655697641y+353402401)$