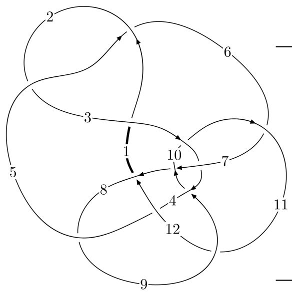
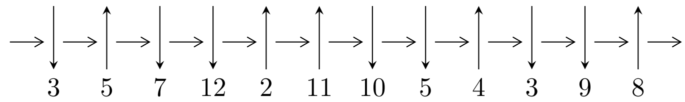
$12n_{0537}$ ($K12n_{0537}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -4.81893 \times 10^{17} u^{27} - 6.03500 \times 10^{17} u^{26} + \cdots + 5.35730 \times 10^{17} b - 3.43509 \times 10^{18}, \\
& -3.83926 \times 10^{18} u^{27} + 2.85325 \times 10^{18} u^{26} + \cdots + 5.35730 \times 10^{17} a - 4.31215 \times 10^{18},\ u^{28} + 2u^{26} + \cdots + 2u -
\end{aligned}$$

$$\begin{aligned}
I_2^u = \langle & 6.36861 \times 10^{214} u^{67} + 1.23983 \times 10^{215} u^{66} + \cdots + 2.21361 \times 10^{214} b + 4.99066 \times 10^{215}, \\
& -6.89986 \times 10^{215} u^{67} - 1.24081 \times 10^{216} u^{66} + \cdots + 2.21361 \times 10^{214} a - 3.68206 \times 10^{216}, \\
& u^{68} + 2u^{67} + \cdots + 21u + 1 \rangle
\end{aligned}$$

$$\begin{aligned}
I_3^u = \langle & -2.25962 \times 10^{48} u^{35} - 8.58758 \times 10^{47} u^{34} + \cdots + 1.17942 \times 10^{46} b + 5.94065 \times 10^{48}, \\
& -1.61303 \times 10^{48} u^{35} - 6.16039 \times 10^{47} u^{34} + \cdots + 1.17942 \times 10^{46} a + 4.20101 \times 10^{48},\ u^{36} + 5u^{34} + \cdots - 6u^2
\end{aligned}$$

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

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

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 139 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.
$\boldsymbol{I_1^u = \langle -4.82\times10^{17}u^{27} - 6.04\times10^{17}u^{26} + \cdots + 5.36\times10^{17}b - 3.44\times10^{18},\ -3.84\times10^{18}u^{27} + 2.85\times10^{18}u^{26} + \cdots + 5.36\times10^{17}a - 4.31\times10^{18},\ u^{28} + 2u^{26} + \cdots + 2u + 1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 7.16640u^{27} - 5.32591u^{26} + \cdots + 6.13836u + 8.04910 \\ 0.899507u^{27} + 1.12650u^{26} + \cdots + 4.01358u + 6.41197 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 8.06591u^{27} - 4.19941u^{26} + \cdots + 10.1519u + 14.4611 \\ 0.899507u^{27} + 1.12650u^{26} + \cdots + 4.01358u + 6.41197 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 5.18943u^{27} - 2.77194u^{26} + \cdots + 6.66653u + 9.13517 \\ 0.163984u^{27} + 0.536152u^{26} + \cdots + 0.882630u + 3.85801 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 6.83813u^{27} - 3.91955u^{26} + \cdots + 6.32359u + 12.0959 \\ -1.93722u^{27} + 1.48121u^{26} + \cdots - 1.00772u - 2.61673 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -14.1808u^{27} + 9.53294u^{26} + \cdots - 9.14159u - 22.3381 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -9.53294u^{27} + 6.37147u^{26} + \cdots - 6.02353u - 13.1808 \\ -u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -13.4897u^{27} + 8.98078u^{26} + \cdots - 9.23353u - 19.5523 \\ -1.82185u^{27} + 1.25415u^{26} + \cdots - 1.26190u - 2.60931 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 5.48144u^{27} - 3.48713u^{26} + \cdots + 3.70672u + 8.83761 \\ 1.93722u^{27} - 1.48121u^{26} + \cdots + 1.00772u + 2.61673 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 19.2062u^{27} - 12.8410u^{26} + \cdots + 15.9255u + 27.6152 \\ 0.163984u^{27} + 0.536152u^{26} + \cdots + 0.882630u + 3.85801 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{18680269678576763267}{535729943333344787}u^{27} + \frac{8598753415343829290}{535729943333344787}u^{26} + \cdots - \frac{35223182169748815025}{535729943333344787}u - \frac{23029573736888830965}{535729943333344787}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{28}+27u^{27}+\cdots+13748u+1296$
c_2, c_5	$u^{28}+3u^{27}+\cdots+2u+36$
c_3, c_4	$u^{28}+2u^{26}+\cdots+2u+1$
c_6, c_{12}	$u^{28}+8u^{27}+\cdots+224u+32$
c_7, c_{11}	$u^{28}+3u^{27}+\cdots+13u+1$
c_8, c_{10}	$u^{28}+u^{27}+\cdots-3u+1$
c_9	$u^{28}+5u^{27}+\cdots+320u+128$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{28} - 49y^{27} + \cdots - 825712y + 1679616$
c_2, c_5	$y^{28} + 27y^{27} + \cdots + 13748y + 1296$
c_3, c_4	$y^{28} + 4y^{27} + \cdots + 6y + 1$
c_6, c_{12}	$y^{28} + 30y^{27} + \cdots + 29696y + 1024$
c_7, c_{11}	$y^{28} - y^{27} + \cdots - y + 1$
c_8, c_{10}	$y^{28} - 29y^{27} + \cdots - 45y + 1$
c_9	$y^{28} - y^{27} + \cdots + 233472y + 16384$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.668779+0.723827I$ $a=-1.042480+0.230333I$ $b=\ \ 0.533282+0.983247I$	$-0.10356+2.64453I$	$1.22282-3.18892I$
$u=-0.668779-0.723827I$ $a=-1.042480-0.230333I$ $b=\ \ 0.533282-0.983247I$	$-0.10356-2.64453I$	$1.22282+3.18892I$
$u=\ \ 0.635506+0.698040I$ $a=\ \ 1.370710+0.155616I$ $b=-2.42228-0.22270I$	$-8.72712-8.29781I$	$-3.70457+10.88184I$
$u=\ \ 0.635506-0.698040I$ $a=\ \ 1.370710-0.155616I$ $b=-2.42228+0.22270I$	$-8.72712+8.29781I$	$-3.70457-10.88184I$
$u=\ \ 0.048408+0.902686I$ $a=\ \ 1.55642-0.39395I$ $b=-0.456492+0.690736I$	$-6.94969-1.95373I$	$0.13138+3.39783I$
$u=\ \ 0.048408-0.902686I$ $a=\ \ 1.55642+0.39395I$ $b=-0.456492-0.690736I$	$-6.94969+1.95373I$	$0.13138-3.39783I$
$u=\ \ 0.983916+0.634599I$ $a=\ \ 0.837957+0.541891I$ $b=-0.560930+1.151500I$	$-2.43111-6.54317I$	$-6.80530+6.55208I$
$u=\ \ 0.983916-0.634599I$ $a=\ \ 0.837957-0.541891I$ $b=-0.560930-1.151500I$	$-2.43111+6.54317I$	$-6.80530-6.55208I$
$u=-0.278802+0.692018I$ $a=-1.019280-0.484379I$ $b=\ \ 2.06902+0.53469I$	$-0.15480+3.78570I$	$3.46312-12.68951I$
$u=-0.278802-0.692018I$ $a=-1.019280+0.484379I$ $b=\ \ 2.06902-0.53469I$	$-0.15480-3.78570I$	$3.46312+12.68951I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.262782 + 0.616933I$ $a = 0.103884 - 0.340572I$ $b = -0.836041 + 0.476997I$	$0.01742 + 1.41732I$	$-1.09305 - 2.14471I$
$u = -0.262782 - 0.616933I$ $a = 0.103884 + 0.340572I$ $b = -0.836041 - 0.476997I$	$0.01742 - 1.41732I$	$-1.09305 + 2.14471I$
$u = -0.659524 + 0.003319I$ $a = -2.13553 + 2.39966I$ $b = 0.278963 + 0.671140I$	$-9.47298 + 2.59610I$	$-14.8510 - 6.7959I$
$u = -0.659524 - 0.003319I$ $a = -2.13553 - 2.39966I$ $b = 0.278963 - 0.671140I$	$-9.47298 - 2.59610I$	$-14.8510 + 6.7959I$
$u = 0.572072 + 0.249132I$ $a = 2.09983 + 0.65588I$ $b = -0.562847 + 0.942357I$	$-2.94382 - 1.92479I$	$-11.20798 + 2.16356I$
$u = 0.572072 - 0.249132I$ $a = 2.09983 - 0.65588I$ $b = -0.562847 - 0.942357I$	$-2.94382 + 1.92479I$	$-11.20798 - 2.16356I$
$u = -0.163734 + 0.512554I$ $a = -0.561467 - 0.153031I$ $b = -0.152593 + 0.805696I$	$0.027219 + 1.275630I$	$0.54017 - 5.75782I$
$u = -0.163734 - 0.512554I$ $a = -0.561467 + 0.153031I$ $b = -0.152593 - 0.805696I$	$0.027219 - 1.275630I$	$0.54017 + 5.75782I$
$u = -0.20976 + 1.48222I$ $a = -0.275606 - 0.434449I$ $b = 0.209091 + 0.559595I$	$2.42708 + 1.71113I$	$-8.50690 - 8.37300I$
$u = -0.20976 - 1.48222I$ $a = -0.275606 + 0.434449I$ $b = 0.209091 - 0.559595I$	$2.42708 - 1.71113I$	$-8.50690 + 8.37300I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.15979 + 1.04033I$ $a = 1.179480 + 0.124327I$ $b = -0.87720 - 1.53540I$	$-12.9356 + 18.0876I$	$-5.50986 - 8.24727I$
$u = -1.15979 - 1.04033I$ $a = 1.179480 - 0.124327I$ $b = -0.87720 + 1.53540I$	$-12.9356 - 18.0876I$	$-5.50986 + 8.24727I$
$u = 1.14462 + 1.07762I$ $a = -0.343283 + 0.540527I$ $b = 0.060499 - 1.217480I$	$-12.42660 + 1.51018I$	$-8.64520 + 0.I$
$u = 1.14462 - 1.07762I$ $a = -0.343283 - 0.540527I$ $b = 0.060499 + 1.217480I$	$-12.42660 - 1.51018I$	$-8.64520 + 0.I$
$u = -1.15228 + 1.07906I$ $a = 0.632964 + 0.320798I$ $b = -0.526893 - 1.288980I$	$-4.70997 + 4.71020I$	$-6.97281 - 3.71311I$
$u = -1.15228 - 1.07906I$ $a = 0.632964 - 0.320798I$ $b = -0.526893 + 1.288980I$	$-4.70997 - 4.71020I$	$-6.97281 + 3.71311I$
$u = 1.17094 + 1.06658I$ $a = -0.903598 + 0.197693I$ $b = 0.74443 - 1.44446I$	$-4.94640 - 12.28330I$	$-5.06082 + 8.01009I$
$u = 1.17094 - 1.06658I$ $a = -0.903598 - 0.197693I$ $b = 0.74443 + 1.44446I$	$-4.94640 + 12.28330I$	$-5.06082 - 8.01009I$

II. $\boldsymbol{I_2^u = \langle 6.37 \times 10^{214} u^{67} + 1.24 \times 10^{215} u^{66} + \cdots + 2.21 \times 10^{214} b + 4.99 \times 10^{215},\ -6.90 \times 10^{215} u^{67} - 1.24 \times 10^{216} u^{66} + \cdots + 2.21 \times 10^{214} a - 3.68 \times 10^{216},\ u^{68} + 2u^{67} + \cdots + 21u + 1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 31.1702u^{67} + 56.0539u^{66} + \cdots + 2647.88u + 166.338 \\ -2.87703u^{67} - 5.60095u^{66} + \cdots - 328.693u - 22.5454 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 28.2932u^{67} + 50.4529u^{66} + \cdots + 2319.19u + 143.792 \\ -2.87703u^{67} - 5.60095u^{66} + \cdots - 328.693u - 22.5454 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 26.7127u^{67} + 47.8406u^{66} + \cdots + 2218.34u + 137.506 \\ -2.95446u^{67} - 5.72854u^{66} + \cdots - 338.974u - 23.2473 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 88.0011u^{67} + 162.387u^{66} + \cdots + 8091.09u + 542.171 \\ -5.68870u^{67} - 10.3246u^{66} + \cdots - 569.445u - 41.1034 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 5.00717u^{67} + 8.61197u^{66} + \cdots + 214.047u - 9.36045 \\ -3.79980u^{67} - 7.12911u^{66} + \cdots - 372.019u - 24.6242 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -63.6091u^{67} - 117.431u^{66} + \cdots - 5857.97u - 389.038 \\ 4.84840u^{67} + 8.68921u^{66} + \cdots + 432.644u + 30.6341 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -69.4105u^{67} - 128.375u^{66} + \cdots - 6432.53u - 429.459 \\ 4.85010u^{67} + 8.61831u^{66} + \cdots + 424.612u + 29.9753 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -63.3932u^{67} - 117.128u^{66} + \cdots - 6447.05u - 489.180 \\ -3.77612u^{67} - 6.57578u^{66} + \cdots - 244.295u - 13.6639 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 102.661u^{67} + 190.241u^{66} + \cdots + 9665.96u + 654.485 \\ -5.94412u^{67} - 11.0219u^{66} + \cdots - 591.464u - 42.5143 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.381385u^{67} + 4.09349u^{66} + \cdots + 460.637u + 29.8348$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{34} + 44u^{33} + \cdots + 211167u + 11664)^2$
c_2, c_5	$(u^{34} - 2u^{33} + \cdots - 27u + 108)^2$
c_3, c_4	$u^{68} + 2u^{67} + \cdots + 21u + 1$
c_6, c_{12}	$u^{68} - 6u^{67} + \cdots + 218203862u + 59673407$
c_7, c_{11}	$u^{68} + 3u^{67} + \cdots + 311u + 59$
c_8, c_{10}	$u^{68} + u^{67} + \cdots + 927119u + 1344671$
c_9	$(u^{34} - u^{33} + \cdots - 71u + 209)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{34} - 92y^{33} + \cdots + 1741335327y + 136048896)^2$
c_2, c_5	$(y^{34} + 44y^{33} + \cdots + 211167y + 11664)^2$
c_3, c_4	$y^{68} - 2y^{67} + \cdots - 119y + 1$
c_6, c_{12}	$y^{68} + 24y^{67} + \cdots + 109187012423296144y + 3560915502987649$
c_7, c_{11}	$y^{68} - 35y^{67} + \cdots + 19745y + 3481$
c_8, c_{10}	$y^{68} - 13y^{67} + \cdots - 6278009008341y + 1808140098241$
c_9	$(y^{34} + 27y^{33} + \cdots + 812985y + 43681)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.988229 + 0.036641I$ $a = 0.541719 - 0.076017I$ $b = -0.092881 + 0.993847I$	$-2.68708 + 3.24701I$	$-7.49713 - 2.56448I$
$u = -0.988229 - 0.036641I$ $a = 0.541719 + 0.076017I$ $b = -0.092881 - 0.993847I$	$-2.68708 - 3.24701I$	$-7.49713 + 2.56448I$
$u = 1.048190 + 0.084796I$ $a = -0.740063 + 0.401409I$ $b = 0.74542 - 1.31472I$	$-11.74950 + 0.99052I$	0
$u = 1.048190 - 0.084796I$ $a = -0.740063 - 0.401409I$ $b = 0.74542 + 1.31472I$	$-11.74950 - 0.99052I$	0
$u = 0.897611 + 0.299654I$ $a = 0.81753 - 2.31884I$ $b = 0.899935 - 0.657412I$	$-10.05820 + 4.24924I$	$-11.45347 - 2.51859I$
$u = 0.897611 - 0.299654I$ $a = 0.81753 + 2.31884I$ $b = 0.899935 + 0.657412I$	$-10.05820 - 4.24924I$	$-11.45347 + 2.51859I$
$u = 0.316205 + 1.016990I$ $a = -1.18839 + 1.71559I$ $b = 0.263043 - 1.081580I$	$-7.73519 - 5.04941I$	0
$u = 0.316205 - 1.016990I$ $a = -1.18839 - 1.71559I$ $b = 0.263043 + 1.081580I$	$-7.73519 + 5.04941I$	0
$u = 0.685355 + 0.849666I$ $a = 0.268449 + 0.431117I$ $b = 0.223062 + 0.797775I$	$-6.57994 - 2.99755I$	0
$u = 0.685355 - 0.849666I$ $a = 0.268449 - 0.431117I$ $b = 0.223062 - 0.797775I$	$-6.57994 + 2.99755I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.468927+0.753341I$ $a=\ \ 1.82075+0.71765I$ $b=-0.601383-0.937913I$	$0.30115+6.48305I$	$2.75382-11.37072I$
$u=-0.468927-0.753341I$ $a=\ \ 1.82075-0.71765I$ $b=-0.601383+0.937913I$	$0.30115-6.48305I$	$2.75382+11.37072I$
$u=-0.247431+0.841447I$ $a=-0.006812-0.392523I$ $b=-0.608249+1.119590I$	$0.134730+1.289890I$	$2.62841-5.51442I$
$u=-0.247431-0.841447I$ $a=-0.006812+0.392523I$ $b=-0.608249-1.119590I$	$0.134730-1.289890I$	$2.62841+5.51442I$
$u=-0.799604+0.350430I$ $a=-1.359860-0.075744I$ $b=\ \ 0.899935-0.657412I$	$-10.05820+4.24924I$	$-11.45347-2.51859I$
$u=-0.799604-0.350430I$ $a=-1.359860+0.075744I$ $b=\ \ 0.899935+0.657412I$	$-10.05820-4.24924I$	$-11.45347+2.51859I$
$u=-0.863696+0.007111I$ $a=-1.55464+0.90908I$ $b=-0.360465+0.686126I$	$-3.46175+1.42507I$	$-10.51067-4.72604I$
$u=-0.863696-0.007111I$ $a=-1.55464-0.90908I$ $b=-0.360465-0.686126I$	$-3.46175-1.42507I$	$-10.51067+4.72604I$
$u=-0.790910+0.123927I$ $a=\ \ 1.041290+0.463826I$ $b=-1.26373-1.89895I$	$-12.11020+6.39851I$	$-11.48496-5.28007I$
$u=-0.790910-0.123927I$ $a=\ \ 1.041290-0.463826I$ $b=-1.26373+1.89895I$	$-12.11020-6.39851I$	$-11.48496+5.28007I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.744234 + 0.181720I$ $a = -0.77241 + 1.52342I$ $b = -0.404490 + 0.921778I$	$-2.66841 - 5.52402I$	$-9.8516 + 10.9069I$
$u = 0.744234 - 0.181720I$ $a = -0.77241 - 1.52342I$ $b = -0.404490 - 0.921778I$	$-2.66841 + 5.52402I$	$-9.8516 - 10.9069I$
$u = -0.139920 + 1.247210I$ $a = 0.063353 + 1.141210I$ $b = 0.059202 - 0.623325I$	$4.42322 + 2.94331I$	0
$u = -0.139920 - 1.247210I$ $a = 0.063353 - 1.141210I$ $b = 0.059202 + 0.623325I$	$4.42322 - 2.94331I$	0
$u = 1.089210 + 0.651528I$ $a = 1.127320 + 0.267005I$ $b = -0.404490 + 0.921778I$	$-2.66841 - 5.52402I$	0
$u = 1.089210 - 0.651528I$ $a = 1.127320 - 0.267005I$ $b = -0.404490 - 0.921778I$	$-2.66841 + 5.52402I$	0
$u = 0.559625 + 0.428522I$ $a = -1.65845 - 0.12542I$ $b = 0.86109 - 1.26732I$	$-1.33870 - 6.60010I$	$-6.29119 + 6.93498I$
$u = 0.559625 - 0.428522I$ $a = -1.65845 + 0.12542I$ $b = 0.86109 + 1.26732I$	$-1.33870 + 6.60010I$	$-6.29119 - 6.93498I$
$u = -0.641696 + 1.127080I$ $a = 0.464741 - 0.402605I$ $b = -1.078840 + 0.695928I$	$0.362177 + 0.737675I$	0
$u = -0.641696 - 1.127080I$ $a = 0.464741 + 0.402605I$ $b = -1.078840 - 0.695928I$	$0.362177 - 0.737675I$	0

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.692090 + 0.104185I$ $a = 1.62625 - 0.34239I$ $b = -0.360465 - 0.686126I$	$-3.46175 - 1.42507I$	$-10.51067 + 4.72604I$
$u = 0.692090 - 0.104185I$ $a = 1.62625 + 0.34239I$ $b = -0.360465 + 0.686126I$	$-3.46175 + 1.42507I$	$-10.51067 - 4.72604I$
$u = -0.630362 + 1.147050I$ $a = -0.606718 - 0.469413I$ $b = 0.89698 + 1.81746I$	$-1.23903 + 3.47975I$	0
$u = -0.630362 - 1.147050I$ $a = -0.606718 + 0.469413I$ $b = 0.89698 - 1.81746I$	$-1.23903 - 3.47975I$	0
$u = -1.214430 + 0.596977I$ $a = -1.203930 + 0.263018I$ $b = 0.624993 + 0.841916I$	$-10.68940 + 6.84316I$	0
$u = -1.214430 - 0.596977I$ $a = -1.203930 - 0.263018I$ $b = 0.624993 - 0.841916I$	$-10.68940 - 6.84316I$	0
$u = -1.055410 + 0.872464I$ $a = -0.935528 - 0.245342I$ $b = -0.092881 + 0.993847I$	$-2.68708 + 3.24701I$	0
$u = -1.055410 - 0.872464I$ $a = -0.935528 + 0.245342I$ $b = -0.092881 - 0.993847I$	$-2.68708 - 3.24701I$	0
$u = -0.505178 + 0.289459I$ $a = 1.303920 - 0.401547I$ $b = -1.078840 - 0.695928I$	$0.362177 - 0.737675I$	$-3.01494 - 2.57610I$
$u = -0.505178 - 0.289459I$ $a = 1.303920 + 0.401547I$ $b = -1.078840 + 0.695928I$	$0.362177 + 0.737675I$	$-3.01494 + 2.57610I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.03822 + 0.97416I$ $a = 1.292760 - 0.248045I$ $b = -1.26373 + 1.89895I$	$-12.11020 - 6.39851I$	0
$u = 1.03822 - 0.97416I$ $a = 1.292760 + 0.248045I$ $b = -1.26373 - 1.89895I$	$-12.11020 + 6.39851I$	0
$u = 0.95320 + 1.07772I$ $a = 0.470263 - 1.062870I$ $b = 0.74542 + 1.31472I$	$-11.74950 - 0.99052I$	0
$u = 0.95320 - 1.07772I$ $a = 0.470263 + 1.062870I$ $b = 0.74542 - 1.31472I$	$-11.74950 + 0.99052I$	0
$u = 0.541931 + 0.113704I$ $a = -0.169744 - 0.186828I$ $b = 0.89698 + 1.81746I$	$-1.23903 + 3.47975I$	$-11.86128 + 7.58185I$
$u = 0.541931 - 0.113704I$ $a = -0.169744 + 0.186828I$ $b = 0.89698 - 1.81746I$	$-1.23903 - 3.47975I$	$-11.86128 - 7.58185I$
$u = -0.486109 + 0.250377I$ $a = 0.54394 + 5.66734I$ $b = 0.624993 + 0.841916I$	$-10.68940 + 6.84316I$	$-13.1700 - 13.6418I$
$u = -0.486109 - 0.250377I$ $a = 0.54394 - 5.66734I$ $b = 0.624993 - 0.841916I$	$-10.68940 - 6.84316I$	$-13.1700 + 13.6418I$
$u = -1.20413 + 0.91553I$ $a = -0.977470 + 0.362937I$ $b = 0.86109 + 1.26732I$	$-1.33870 + 6.60010I$	0
$u = -1.20413 - 0.91553I$ $a = -0.977470 - 0.362937I$ $b = 0.86109 - 1.26732I$	$-1.33870 - 6.60010I$	0

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.10477 + 1.07329I$ $a = -1.038600 + 0.326925I$ $b = 0.543096 - 1.209800I$	$-12.3962 - 9.6578I$	0
$u = 1.10477 - 1.07329I$ $a = -1.038600 - 0.326925I$ $b = 0.543096 + 1.209800I$	$-12.3962 + 9.6578I$	0
$u = -1.15749 + 1.06627I$ $a = 0.773036 + 0.369354I$ $b = -0.206787 - 1.043190I$	$-4.75446 + 3.62192I$	0
$u = -1.15749 - 1.06627I$ $a = 0.773036 - 0.369354I$ $b = -0.206787 + 1.043190I$	$-4.75446 - 3.62192I$	0
$u = 1.36128 + 0.87098I$ $a = 0.679421 + 0.350166I$ $b = -0.601383 + 0.937913I$	$0.30115 - 6.48305I$	0
$u = 1.36128 - 0.87098I$ $a = 0.679421 - 0.350166I$ $b = -0.601383 - 0.937913I$	$0.30115 + 6.48305I$	0
$u = -1.12817 + 1.27635I$ $a = 0.150045 + 0.627835I$ $b = 0.543096 - 1.209800I$	$-12.3962 - 9.6578I$	0
$u = -1.12817 - 1.27635I$ $a = 0.150045 - 0.627835I$ $b = 0.543096 + 1.209800I$	$-12.3962 + 9.6578I$	0
$u = 1.26466 + 1.16633I$ $a = -0.449381 + 0.416092I$ $b = -0.206787 - 1.043190I$	$-4.75446 + 3.62192I$	0
$u = 1.26466 - 1.16633I$ $a = -0.449381 - 0.416092I$ $b = -0.206787 + 1.043190I$	$-4.75446 - 3.62192I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.173722 + 0.166663I$ $a = -2.01494 + 0.17662I$ $b = -0.608249 + 1.119590I$	$0.134730 + 1.289890I$	$2.62841 - 5.51442I$
$u = -0.173722 - 0.166663I$ $a = -2.01494 - 0.17662I$ $b = -0.608249 - 1.119590I$	$0.134730 - 1.289890I$	$2.62841 + 5.51442I$
$u = -0.145879 + 0.018683I$ $a = -12.29330 + 6.13439I$ $b = 0.223062 - 0.797775I$	$-6.57994 + 2.99755I$	$-2.94535 + 1.14914I$
$u = -0.145879 - 0.018683I$ $a = -12.29330 - 6.13439I$ $b = 0.223062 + 0.797775I$	$-6.57994 - 2.99755I$	$-2.94535 - 1.14914I$
$u = -1.41912 + 1.21972I$ $a = -0.491669 - 0.178009I$ $b = 0.263043 + 1.081580I$	$-7.73519 + 5.04941I$	0
$u = -1.41912 - 1.21972I$ $a = -0.491669 + 0.178009I$ $b = 0.263043 - 1.081580I$	$-7.73519 - 5.04941I$	0
$u = 0.76383 + 2.23790I$ $a = -0.0228934 - 0.0620777I$ $b = 0.059202 + 0.623325I$	$4.42322 - 2.94331I$	0
$u = 0.76383 - 2.23790I$ $a = -0.0228934 + 0.0620777I$ $b = 0.059202 - 0.623325I$	$4.42322 + 2.94331I$	0

III. $I_3^u = \langle -2.26\times 10^{48}u^{35} - 8.59\times 10^{47}u^{34} + \cdots + 1.18\times 10^{46}b + 5.94\times 10^{48},\ -1.61\times 10^{48}u^{35} - 6.16\times 10^{47}u^{34} + \cdots + 1.18\times 10^{46}a + 4.20\times 10^{48},\ u^{36} + 5u^{34} + \cdots - 6u^2 + 1\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_9 = \begin{pmatrix}136.764u^{35} + 52.2322u^{34} + \cdots - 952.902u - 356.192\\191.587u^{35} + 72.8118u^{34} + \cdots - 1328.03u - 503.692\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}328.351u^{35} + 125.044u^{34} + \cdots - 2280.93u - 859.884\\191.587u^{35} + 72.8118u^{34} + \cdots - 1328.03u - 503.692\end{pmatrix}$$
$$a_8 = \begin{pmatrix}308.702u^{35} + 117.542u^{34} + \cdots - 2144.16u - 807.652\\216.358u^{35} + 82.1742u^{34} + \cdots - 1499.96u - 569.001\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-94.9256u^{35} - 37.8952u^{34} + \cdots + 692.912u + 256.406\\-197.524u^{35} - 75.3883u^{34} + \cdots + 1369.87u + 521.602\end{pmatrix}$$
$$a_7 = \begin{pmatrix}33.4401u^{35} + 13.3311u^{34} + \cdots - 236.732u - 93.2582\\127.909u^{35} + 48.6370u^{34} + \cdots - 883.973u - 337.364\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-190.561u^{35} - 71.5139u^{34} + \cdots + 1300.58u + 496.970\\-140.950u^{35} - 53.2913u^{34} + \cdots + 973.267u + 369.632\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-76.8688u^{35} - 28.4927u^{34} + \cdots + 517.870u + 198.851\\-124.568u^{35} - 47.0802u^{34} + \cdots + 859.575u + 326.611\end{pmatrix}$$
$$a_6 = \begin{pmatrix}38.5133u^{35} + 14.5614u^{34} + \cdots - 273.354u - 91.8404\\164.276u^{35} + 62.5988u^{34} + \cdots - 1139.07u - 430.370\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}97.5697u^{35} + 35.9068u^{34} + \cdots - 647.165u - 251.689\\5.06363u^{35} + 1.65514u^{34} + \cdots - 30.4338u - 11.5181\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 1809.72u^{35} + 688.118u^{34} + \cdots - 12501.2u - 4762.85$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{18} - 17u^{17} + \cdots - 56u + 4)^2$
c_2	$(u^{18} + u^{17} + \cdots + 6u + 2)^2$
c_3	$u^{36} + 5u^{34} + \cdots - 6u^2 + 1$
c_4	$u^{36} + 5u^{34} + \cdots - 6u^2 + 1$
c_5	$(u^{18} - u^{17} + \cdots - 6u + 2)^2$
c_6	$u^{36} - 7u^{35} + \cdots + 192u + 32$
c_7	$u^{36} - 11u^{35} + \cdots - 12u + 1$
c_8	$u^{36} + u^{35} + \cdots + 4u + 1$
c_9	$u^{36} + 8u^{34} + \cdots + 2720u^2 + 329$
c_{10}	$u^{36} - u^{35} + \cdots - 4u + 1$
c_{11}	$u^{36} + 11u^{35} + \cdots + 12u + 1$
c_{12}	$u^{36} + 7u^{35} + \cdots - 192u + 32$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{18} - 19y^{17} + \cdots + 360y + 16)^2$
c_2, c_5	$(y^{18} + 17y^{17} + \cdots + 56y + 4)^2$
c_3, c_4	$y^{36} + 10y^{35} + \cdots - 12y + 1$
c_6, c_{12}	$y^{36} - 17y^{35} + \cdots + 13312y + 1024$
c_7, c_{11}	$y^{36} - 3y^{35} + \cdots - 12y + 1$
c_8, c_{10}	$y^{36} + 3y^{35} + \cdots + 14y + 1$
c_9	$(y^{18} + 8y^{17} + \cdots + 2720y + 329)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.387110 + 0.887771I$ $a = -0.817383 + 0.149910I$ $b = 1.087400 + 0.195941I$	$1.90337 + 1.03056I$	$1.286140 - 0.538382I$
$u = 0.387110 - 0.887771I$ $a = -0.817383 - 0.149910I$ $b = 1.087400 - 0.195941I$	$1.90337 - 1.03056I$	$1.286140 + 0.538382I$
$u = 0.694269 + 0.635190I$ $a = -1.61256 - 0.33667I$ $b = 0.680806 - 1.107480I$	$-1.04528 - 7.85103I$	$-2.06789 + 11.86645I$
$u = 0.694269 - 0.635190I$ $a = -1.61256 + 0.33667I$ $b = 0.680806 + 1.107480I$	$-1.04528 + 7.85103I$	$-2.06789 - 11.86645I$
$u = 0.908151 + 0.000867I$ $a = -0.328700 - 0.385035I$ $b = -0.351407 - 1.092420I$	$-2.07175 + 4.73666I$	$-4.27691 - 4.63834I$
$u = 0.908151 - 0.000867I$ $a = -0.328700 + 0.385035I$ $b = -0.351407 + 1.092420I$	$-2.07175 - 4.73666I$	$-4.27691 + 4.63834I$
$u = -0.640781 + 0.916918I$ $a = 0.911491 - 0.266288I$ $b = -1.087400 - 0.195941I$	$1.90337 + 1.03056I$	$- 61.286140 + 0.10I$
$u = -0.640781 - 0.916918I$ $a = 0.911491 + 0.266288I$ $b = -1.087400 + 0.195941I$	$1.90337 - 1.03056I$	$- 61.286140 + 0.10I$
$u = -0.315914 + 0.788474I$ $a = 1.25754 + 0.95575I$ $b = -0.750098 - 0.946970I$	$-0.18706 + 5.80137I$	$-2.95659 - 3.22264I$
$u = -0.315914 - 0.788474I$ $a = 1.25754 - 0.95575I$ $b = -0.750098 + 0.946970I$	$-0.18706 - 5.80137I$	$-2.95659 + 3.22264I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.549127+1.040930I$ $a=-0.774918-0.449602I$ $b=\ \ 1.20331+1.55588I$	$-1.12744+3.79285I$	$0.-14.6968I$
$u=-0.549127-1.040930I$ $a=-0.774918+0.449602I$ $b=\ \ 1.20331-1.55588I$	$-1.12744-3.79285I$	$0.+14.6968I$
$u=-0.421922+1.103170I$ $a=\ \ 0.087462-0.569260I$ $b=-0.86966+1.32584I$	$-0.394276+1.096290I$	$-12.74294+0.I$
$u=-0.421922-1.103170I$ $a=\ \ 0.087462+0.569260I$ $b=-0.86966-1.32584I$	$-0.394276-1.096290I$	$-12.74294+0.I$
$u=\ \ 0.577450+0.561844I$ $a=\ \ 2.83116-0.64804I$ $b=-0.038303+0.828326I$	$-6.65751-3.75744I$	$-5.03414+7.76355I$
$u=\ \ 0.577450-0.561844I$ $a=\ \ 2.83116+0.64804I$ $b=-0.038303-0.828326I$	$-6.65751+3.75744I$	$-5.03414-7.76355I$
$u=-0.098370+1.269320I$ $a=-0.078604-1.138060I$ $b=\ \ 0.039244+0.664656I$	$4.35413+3.10586I$	$0.-23.8029I$
$u=-0.098370-1.269320I$ $a=-0.078604+1.138060I$ $b=\ \ 0.039244-0.664656I$	$4.35413-3.10586I$	$0.+23.8029I$
$u=-1.032540+0.761277I$ $a=-0.051147+0.482440I$ $b=\ \ 0.038303+0.828326I$	$-6.65751+3.75744I$	0
$u=-1.032540-0.761277I$ $a=-0.051147-0.482440I$ $b=\ \ 0.038303-0.828326I$	$-6.65751-3.75744I$	0

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.012960+0.802948I$ $a=-1.149180+0.015549I$ $b=\ \ 0.351407+1.092420I$	$-2.07175+4.73666I$	0
$u=-1.012960-0.802948I$ $a=-1.149180-0.015549I$ $b=\ \ 0.351407-1.092420I$	$-2.07175-4.73666I$	0
$u=\ \ 1.099210+0.703645I$ $a=\ \ 1.215140+0.060923I$ $b=-0.912449+0.842826I$	$-10.40110-6.30737I$	0
$u=\ \ 1.099210-0.703645I$ $a=\ \ 1.215140-0.060923I$ $b=-0.912449-0.842826I$	$-10.40110+6.30737I$	0
$u=-0.573544+0.103977I$ $a=-0.792146-0.118092I$ $b=\ \ 0.86966+1.32584I$	$-0.394276-1.096290I$	$-12.74294+0.28360I$
$u=-0.573544-0.103977I$ $a=-0.792146+0.118092I$ $b=\ \ 0.86966-1.32584I$	$-0.394276+1.096290I$	$-12.74294-0.28360I$
$u=-1.24415+0.89531I$ $a=-0.814673+0.309886I$ $b=\ \ 0.750098+0.946970I$	$-0.18706+5.80137I$	0
$u=-1.24415-0.89531I$ $a=-0.814673-0.309886I$ $b=\ \ 0.750098-0.946970I$	$-0.18706-5.80137I$	0
$u=\ \ 1.33512+0.86016I$ $a=\ \ 0.718294+0.467996I$ $b=-0.680806+1.107480I$	$-1.04528-7.85103I$	0
$u=\ \ 1.33512-0.86016I$ $a=\ \ 0.718294-0.467996I$ $b=-0.680806-1.107480I$	$-1.04528+7.85103I$	0

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.380464 + 0.000200I$ $a = 0.92076 + 1.11017I$ $b = -1.20331 + 1.55588I$	$-1.12744 - 3.79285I$	$-3.8135 + 14.6968I$
$u = 0.380464 - 0.000200I$ $a = 0.92076 - 1.11017I$ $b = -1.20331 - 1.55588I$	$-1.12744 + 3.79285I$	$-3.8135 - 14.6968I$
$u = -0.199060 + 0.249576I$ $a = 5.86236 - 1.19720I$ $b = 0.912449 - 0.842826I$	$-10.40110 - 6.30737I$	$-5.57429 + 2.02371I$
$u = -0.199060 - 0.249576I$ $a = 5.86236 + 1.19720I$ $b = 0.912449 + 0.842826I$	$-10.40110 + 6.30737I$	$-5.57429 - 2.02371I$
$u = 0.70660 + 2.28427I$ $a = 0.115104 - 0.112014I$ $b = -0.039244 + 0.664656I$	$4.35413 - 3.10586I$	0
$u = 0.70660 - 2.28427I$ $a = 0.115104 + 0.112014I$ $b = -0.039244 - 0.664656I$	$4.35413 + 3.10586I$	0

IV. $I_4^u = \langle b,\ 2u^4+u^3+3u^2+a-u-2,\ u^5+u^3-u^2-u+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^5 - 10y^4 + 33y^3 - 28y^2 + 40y - 1$
c_2, c_5	$y^5 + 6y^4 + 13y^3 + 12y^2 + 4y - 1$
c_3, c_4	$y^5 + 2y^4 - y^3 - 3y^2 + 3y - 1$
c_6, c_{12}	$y^5 - 2y^4 - 3y^3 + 4y^2 + 8y - 1$
c_7, c_{11}	$y^5 - 3y^4 + 11y^3 - 19y^2 + 6y - 1$
c_8, c_{10}	$y^5 - 3y^4 + 3y^3 + y^2 - 2y - 1$
c_9	y^5

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.862442$ $a = -1.55887$ $b = 0$	-3.66375	-11.8520
$u = 0.717360 + 0.267040I$ $a = 1.07233 - 1.95491I$ $b = 0$	$-9.07644 + 2.10101I$	$-6.05167 + 2.99980I$
$u = 0.717360 - 0.267040I$ $a = 1.07233 + 1.95491I$ $b = 0$	$-9.07644 - 2.10101I$	$-6.05167 - 2.99980I$
$u = -0.286139 + 1.377340I$ $a = 0.207102 + 0.293496I$ $b = 0$	$2.68365 + 1.36579I$	$2.97770 + 5.89289I$
$u = -0.286139 - 1.377340I$ $a = 0.207102 - 0.293496I$ $b = 0$	$2.68365 - 1.36579I$	$2.97770 - 5.89289I$

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

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_5		$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$0.500000 + 0.866025I$		
$a =$	-1.00000	3.28987	6.00000
$b =$	1.00000		
$u =$	$0.500000 - 0.866025I$		
$a =$	-1.00000	3.28987	6.00000
$b =$	1.00000		

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^2(u^5 - 6u^4 + \cdots + 4u + 1)(u^{18} - 17u^{17} + \cdots - 56u + 4)^2$ $\cdot (u^{28} + 27u^{27} + \cdots + 13748u + 1296)$ $\cdot (u^{34} + 44u^{33} + \cdots + 211167u + 11664)^2$
c_2	$u^2(u^5 + 3u^3 + 2u - 1)(u^{18} + u^{17} + \cdots + 6u + 2)^2$ $\cdot (u^{28} + 3u^{27} + \cdots + 2u + 36)(u^{34} - 2u^{33} + \cdots - 27u + 108)^2$
c_3	$(u^2 - u + 1)(u^5 + u^3 + u^2 - u - 1)(u^{28} + 2u^{26} + \cdots + 2u + 1)$ $\cdot (u^{36} + 5u^{34} + \cdots - 6u^2 + 1)(u^{68} + 2u^{67} + \cdots + 21u + 1)$
c_4	$(u^2 - u + 1)(u^5 + u^3 - u^2 - u + 1)(u^{28} + 2u^{26} + \cdots + 2u + 1)$ $\cdot (u^{36} + 5u^{34} + \cdots - 6u^2 + 1)(u^{68} + 2u^{67} + \cdots + 21u + 1)$
c_5	$u^2(u^5 + 3u^3 + 2u + 1)(u^{18} - u^{17} + \cdots - 6u + 2)^2$ $\cdot (u^{28} + 3u^{27} + \cdots + 2u + 36)(u^{34} - 2u^{33} + \cdots - 27u + 108)^2$
c_6	$((u - 1)^2)(u^5 + 2u^4 + \cdots + 2u - 1)(u^{28} + 8u^{27} + \cdots + 224u + 32)$ $\cdot (u^{36} - 7u^{35} + \cdots + 192u + 32)$ $\cdot (u^{68} - 6u^{67} + \cdots + 218203862u + 59673407)$
c_7	$(u^2 - u + 1)(u^5 - 3u^4 + \cdots - 2u - 1)(u^{28} + 3u^{27} + \cdots + 13u + 1)$ $\cdot (u^{36} - 11u^{35} + \cdots - 12u + 1)(u^{68} + 3u^{67} + \cdots + 311u + 59)$
c_8	$(u^2 - u + 1)(u^5 - u^4 - u^3 + u^2 + 1)(u^{28} + u^{27} + \cdots - 3u + 1)$ $\cdot (u^{36} + u^{35} + \cdots + 4u + 1)(u^{68} + u^{67} + \cdots + 927119u + 1344671)$
c_9	$u^5(u - 1)^2(u^{28} + 5u^{27} + \cdots + 320u + 128)$ $\cdot ((u^{34} - u^{33} + \cdots - 71u + 209)^2)(u^{36} + 8u^{34} + \cdots + 2720u^2 + 329)$
c_{10}	$(u^2 - u + 1)(u^5 + u^4 - u^3 - u^2 - 1)(u^{28} + u^{27} + \cdots - 3u + 1)$ $\cdot (u^{36} - u^{35} + \cdots - 4u + 1)(u^{68} + u^{67} + \cdots + 927119u + 1344671)$
c_{11}	$(u^2 - u + 1)(u^5 + 3u^4 + \cdots - 2u + 1)(u^{28} + 3u^{27} + \cdots + 13u + 1)$ $\cdot (u^{36} + 11u^{35} + \cdots + 12u + 1)(u^{68} + 3u^{67} + \cdots + 311u + 59)$
c_{12}	$((u - 1)^2)(u^5 - 2u^4 + \cdots + 2u + 1)(u^{28} + 8u^{27} + \cdots + 224u + 32)$ $\cdot (u^{36} + 7u^{35} + \cdots - 192u + 32)$ $\cdot (u^{68} - 6u^{67} + \cdots + 218203862u + 59673407)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^2(y^5 - 10y^4 + 33y^3 - 28y^2 + 40y - 1)$ $\cdot (y^{18} - 19y^{17} + \cdots + 360y + 16)^2$ $\cdot (y^{28} - 49y^{27} + \cdots - 825712y + 1679616)$ $\cdot (y^{34} - 92y^{33} + \cdots + 1741335327y + 136048896)^2$
c_2, c_5	$y^2(y^5 + 6y^4 + \cdots + 4y - 1)(y^{18} + 17y^{17} + \cdots + 56y + 4)^2$ $\cdot (y^{28} + 27y^{27} + \cdots + 13748y + 1296)$ $\cdot (y^{34} + 44y^{33} + \cdots + 211167y + 11664)^2$
c_3, c_4	$(y^2 + y + 1)(y^5 + 2y^4 + \cdots + 3y - 1)(y^{28} + 4y^{27} + \cdots + 6y + 1)$ $\cdot (y^{36} + 10y^{35} + \cdots - 12y + 1)(y^{68} - 2y^{67} + \cdots - 119y + 1)$
c_6, c_{12}	$(y - 1)^2(y^5 - 2y^4 - 3y^3 + 4y^2 + 8y - 1)$ $\cdot (y^{28} + 30y^{27} + \cdots + 29696y + 1024)$ $\cdot (y^{36} - 17y^{35} + \cdots + 13312y + 1024)$ $\cdot (y^{68} + 24y^{67} + \cdots + 109187012423296144y + 3560915502987649)$
c_7, c_{11}	$(y^2 + y + 1)(y^5 - 3y^4 + \cdots + 6y - 1)(y^{28} - y^{27} + \cdots - y + 1)$ $\cdot (y^{36} - 3y^{35} + \cdots - 12y + 1)(y^{68} - 35y^{67} + \cdots + 19745y + 3481)$
c_8, c_{10}	$(y^2 + y + 1)(y^5 - 3y^4 + \cdots - 2y - 1)(y^{28} - 29y^{27} + \cdots - 45y + 1)$ $\cdot (y^{36} + 3y^{35} + \cdots + 14y + 1)$ $\cdot (y^{68} - 13y^{67} + \cdots - 6278009008341y + 1808140098241)$
c_9	$y^5(y - 1)^2(y^{18} + 8y^{17} + \cdots + 2720y + 329)^2$ $\cdot (y^{28} - y^{27} + \cdots + 233472y + 16384)$ $\cdot (y^{34} + 27y^{33} + \cdots + 812985y + 43681)^2$