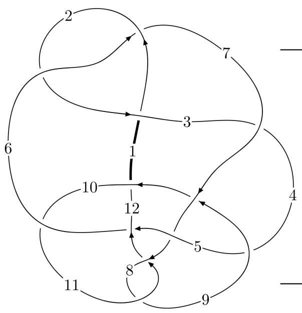
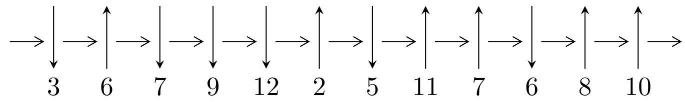
$12n_{0284}$ ($K12n_{0284}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$
\begin{aligned}
I_1^u &= \langle -157641u^{22} + 1055893u^{21} + \cdots + 43337b + 207103, \\
&\quad 27883u^{22} - 413880u^{21} + \cdots + 86674a - 184081,\ u^{23} - 8u^{22} + \cdots - 11u + 2 \rangle \\
I_2^u &= \langle u^8 + 3u^7 + 6u^6 + 7u^5 + 6u^4 + 3u^3 + u^2 + b - 1, \\
&\quad - u^{12} - 6u^{11} - 19u^{10} - 40u^9 - 61u^8 - 70u^7 - 60u^6 - 37u^5 - 12u^4 + 5u^3 + 10u^2 + a + 8u + 3, \\
&\quad u^{13} + 5u^{12} + 15u^{11} + 30u^{10} + 45u^9 + 51u^8 + 45u^7 + 30u^6 + 13u^5 + u^4 - 5u^3 - 5u^2 - 2u - 1 \rangle \\
I_3^u &= \langle 2u^{12}a + 29u^{12} + \cdots + 2a + 35,\ 5u^{12}a + 9u^{12} + \cdots + 3a + 18, \\
&\quad u^{13} + 3u^{12} + 5u^{11} + 4u^{10} + 4u^9 + 3u^8 + u^7 - 4u^6 - 2u^5 + u^3 + 3u^2 + 3u + 1 \rangle \\
I_4^u &= \langle a^3u + a^3 - a^2u - au + 4b - 4a - 4u + 1,\ a^4 + 2a^2u - 3a^2 - 2au - 2a - 1,\ u^2 - u + 1 \rangle
\end{aligned}
$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 70 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. $\boldsymbol{I_1^u = \langle -1.58 \times 10^5 u^{22} + 1.06 \times 10^6 u^{21} + \cdots + 4.33 \times 10^4 b + 2.07 \times 10^5,\ 27883u^{22} - 413880u^{21} + \cdots + 86674a - 184081,\ u^{23} - 8u^{22} + \cdots - 11u + 2\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.321700u^{22} + 4.77513u^{21} + \cdots - 26.2727u + 2.12383 \\ 3.63756u^{22} - 24.3647u^{21} + \cdots + 24.4277u - 4.77890 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.187911u^{22} + 1.63708u^{21} + \cdots - 25.8401u + 2.49965 \\ -2.20154u^{22} + 13.8409u^{21} + \cdots + 1.41486u - 0.643399 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -3.95926u^{22} + 29.1398u^{21} + \cdots - 50.7004u + 6.90273 \\ 3.63756u^{22} - 24.3647u^{21} + \cdots + 24.4277u - 4.77890 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1.25086u^{22} - 9.29017u^{21} + \cdots - 1.10816u + 6.18493 \\ -1.69428u^{22} + 12.2032u^{21} + \cdots - 15.3776u + 1.78376 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -1.06123u^{22} + 8.07276u^{21} + \cdots - 14.7681u - 3.81472 \\ 0.492097u^{22} - 5.85550u^{21} + \cdots + 20.7596u - 3.21718 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.802397u^{22} + 6.76237u^{21} + \cdots - 26.6681u + 8.35061 \\ -0.134366u^{22} + 2.76904u^{21} + \cdots - 9.99762u + 1.09738 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{52973}{43337}u^{22} + \frac{121642}{43337}u^{21} + \cdots + \frac{1232071}{43337}u - \frac{582900}{43337}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{23} + 4u^{22} + \cdots - 35u - 4$
c_2, c_6	$u^{23} - 8u^{22} + \cdots - 11u + 2$
c_3	$u^{23} + 8u^{22} + \cdots - 17339u + 16754$
c_4, c_{10}	$u^{23} + 16u^{21} + \cdots - 4u - 1$
c_5, c_7	$u^{23} - 8u^{21} + \cdots + 5u - 1$
c_8, c_{11}	$u^{23} + 10u^{22} + \cdots - 29u - 4$
c_9, c_{12}	$u^{23} + 3u^{22} + \cdots - 10u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{23} + 44y^{22} + \cdots - 1519y - 16$
c_2, c_6	$y^{23} + 4y^{22} + \cdots - 35y - 4$
c_3	$y^{23} + 84y^{22} + \cdots - 4785303843y - 280696516$
c_4, c_{10}	$y^{23} + 32y^{22} + \cdots + 2y - 1$
c_5, c_7	$y^{23} - 16y^{22} + \cdots + 33y - 1$
c_8, c_{11}	$y^{23} + 6y^{22} + \cdots - 575y - 16$
c_9, c_{12}	$y^{23} - 39y^{22} + \cdots - 196y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.482213 + 0.920645I$ $a = 0.244578 - 0.919306I$ $b = 0.0382942 + 0.0881044I$	$-1.61303 + 2.07315I$	$-0.31329 - 3.51886I$
$u = 0.482213 - 0.920645I$ $a = 0.244578 + 0.919306I$ $b = 0.0382942 - 0.0881044I$	$-1.61303 - 2.07315I$	$-0.31329 + 3.51886I$
$u = 0.795198 + 0.518466I$ $a = 0.729958 + 0.210265I$ $b = 0.691674 - 0.467858I$	$-0.22104 + 2.41394I$	$1.23274 - 2.49732I$
$u = 0.795198 - 0.518466I$ $a = 0.729958 - 0.210265I$ $b = 0.691674 + 0.467858I$	$-0.22104 - 2.41394I$	$1.23274 + 2.49732I$
$u = -0.400101 + 1.050250I$ $a = 0.662095 + 0.548805I$ $b = 0.384543 - 1.002950I$	$-6.34034 - 1.70564I$	$-9.62352 + 2.67791I$
$u = -0.400101 - 1.050250I$ $a = 0.662095 - 0.548805I$ $b = 0.384543 + 1.002950I$	$-6.34034 + 1.70564I$	$-9.62352 - 2.67791I$
$u = -0.787767 + 0.322879I$ $a = 0.846615 - 0.478402I$ $b = 0.534974 - 0.979772I$	$-2.52532 + 1.25135I$	$-2.51529 - 0.59191I$
$u = -0.787767 - 0.322879I$ $a = 0.846615 + 0.478402I$ $b = 0.534974 + 0.979772I$	$-2.52532 - 1.25135I$	$-2.51529 + 0.59191I$
$u = 0.274775 + 0.733362I$ $a = 0.596051 + 0.164908I$ $b = -0.038646 - 0.194454I$	$-0.352945 + 1.192290I$	$-4.51268 - 5.42631I$
$u = 0.274775 - 0.733362I$ $a = 0.596051 - 0.164908I$ $b = -0.038646 + 0.194454I$	$-0.352945 - 1.192290I$	$-4.51268 + 5.42631I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.555047 + 1.233680I$ $a = -0.578619 + 0.250416I$ $b = 0.773467 + 0.821194I$	$-5.25580 - 6.48914I$	$-3.11761 + 2.59067I$
$u = -0.555047 - 1.233680I$ $a = -0.578619 - 0.250416I$ $b = 0.773467 - 0.821194I$	$-5.25580 + 6.48914I$	$-3.11761 - 2.59067I$
$u = -0.646784$ $a = -1.86113$ $b = -1.50954$	2.52927	13.5670
$u = 1.13690 + 0.99514I$ $a = 0.847752 - 0.965637I$ $b = 2.45166 - 0.30632I$	$8.67002 - 6.60337I$	$0.16824 + 3.17637I$
$u = 1.13690 - 0.99514I$ $a = 0.847752 + 0.965637I$ $b = 2.45166 + 0.30632I$	$8.67002 + 6.60337I$	$0.16824 - 3.17637I$
$u = 1.02850 + 1.11001I$ $a = 1.24376 - 0.88643I$ $b = 2.28163 + 0.96771I$	$8.2361 + 14.4853I$	$-0.53177 - 7.04602I$
$u = 1.02850 - 1.11001I$ $a = 1.24376 + 0.88643I$ $b = 2.28163 - 0.96771I$	$8.2361 - 14.4853I$	$-0.53177 + 7.04602I$
$u = 1.13613 + 1.00401I$ $a = -1.060840 + 0.748303I$ $b = -2.47675 - 0.32354I$	$10.85390 + 6.57430I$	$0.18173 - 4.98395I$
$u = 1.13613 - 1.00401I$ $a = -1.060840 - 0.748303I$ $b = -2.47675 + 0.32354I$	$10.85390 - 6.57430I$	$0.18173 + 4.98395I$
$u = 1.04311 + 1.14169I$ $a = -0.869736 + 0.998294I$ $b = -2.21575 - 0.49458I$	$10.38880 + 1.40736I$	$-0.548351 + 0.550968I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.04311 - 1.14169I$ $a = -0.869736 - 0.998294I$ $b = -2.21575 + 0.49458I$	$10.38880 - 1.40736I$	$-0.548351 - 0.550968I$
$u = 0.169482 + 0.280800I$ $a = -2.98105 - 2.07240I$ $b = -0.170327 + 1.076150I$	$-3.36571 + 0.11521I$	$-6.20379 + 0.79398I$
$u = 0.169482 - 0.280800I$ $a = -2.98105 + 2.07240I$ $b = -0.170327 - 1.076150I$	$-3.36571 - 0.11521I$	$-6.20379 - 0.79398I$

II. $\boldsymbol{I^u_2 = \langle u^8 + 3u^7 + 6u^6 + 7u^5 + 6u^4 + 3u^3 + u^2 + b - 1,\ -u^{12} - 6u^{11} + \cdots + a + 3,\ u^{13} + 5u^{12} + \cdots - 2u - 1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^{12} + 6u^{11} + \cdots - 8u - 3 \\ -u^8 - 3u^7 - 6u^6 - 7u^5 - 6u^4 - 3u^3 - u^2 + 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^{11} + 5u^{10} + 14u^9 + 26u^8 + 35u^7 + 35u^6 + 25u^5 + 12u^4 - 5u^2 - 5u - 3 \\ u^{12} + 4u^{11} + \cdots - u + 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^{12} + 6u^{11} + \cdots - 8u - 4 \\ -u^8 - 3u^7 - 6u^6 - 7u^5 - 6u^4 - 3u^3 - u^2 + 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^{12} + 4u^{11} + \cdots + 3u + 3 \\ -u^{12} - 5u^{11} + \cdots + 4u^2 + 3u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^{12} - 4u^{11} + \cdots + u - 2 \\ u^{11} + 5u^{10} + 14u^9 + 25u^8 + 32u^7 + 29u^6 + 19u^5 + 8u^4 - 4u^2 - 4u - 1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^{12} - 6u^{11} + \cdots + 6u + 2 \\ -u^4 - u^3 - u^2 - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= -u^{12} + u^{11} + 12u^{10} + 42u^9 + 79u^8 + 107u^7 + 101u^6 + 71u^5 + 29u^4 - 8u^3 - 24u^2 - 19u - 11$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{13} - 5u^{12} + \cdots - 6u + 1$
c_2	$u^{13} - 5u^{12} + \cdots - 2u + 1$
c_3	$u^{13} + 5u^{12} + \cdots + 2u + 5$
c_4, c_{10}	$u^{13} + 5u^{11} + \cdots + 2u - 1$
c_5, c_7	$u^{13} - 3u^{11} + \cdots + 3u + 1$
c_6	$u^{13} + 5u^{12} + \cdots - 2u - 1$
c_8	$u^{13} + 7u^{12} + \cdots + 18u + 5$
c_9, c_{12}	$u^{13} - 3u^{12} + \cdots - 2u - 1$
c_{11}	$u^{13} - 7u^{12} + \cdots + 18u - 5$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{13} + 5y^{12} + \cdots + 30y - 1$
c_2, c_6	$y^{13} + 5y^{12} + \cdots - 6y - 1$
c_3	$y^{13} + 5y^{12} + \cdots - 336y - 25$
c_4, c_{10}	$y^{13} + 10y^{12} + \cdots - 8y - 1$
c_5, c_7	$y^{13} - 6y^{12} + \cdots + 3y - 1$
c_8, c_{11}	$y^{13} + 3y^{12} + \cdots + 124y - 25$
c_9, c_{12}	$y^{13} - 13y^{12} + \cdots + 6y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.014650 + 0.255879I$ $a = 0.308979 - 0.014833I$ $b = 0.725825 + 1.010700I$	$-1.27099 - 3.82062I$	$-1.40679 + 4.63835I$
$u = -1.014650 - 0.255879I$ $a = 0.308979 + 0.014833I$ $b = 0.725825 - 1.010700I$	$-1.27099 + 3.82062I$	$-1.40679 - 4.63835I$
$u = 0.197297 + 0.861440I$ $a = 0.401352 + 0.826342I$ $b = -0.709820 + 0.085882I$	$0.746919 + 0.991007I$	$3.49980 - 2.09278I$
$u = 0.197297 - 0.861440I$ $a = 0.401352 - 0.826342I$ $b = -0.709820 - 0.085882I$	$0.746919 - 0.991007I$	$3.49980 + 2.09278I$
$u = -0.388828 + 1.189390I$ $a = -0.898954 - 0.065194I$ $b = 0.527148 + 0.273002I$	$-5.76976 - 7.61792I$	$-6.66397 + 8.10409I$
$u = -0.388828 - 1.189390I$ $a = -0.898954 + 0.065194I$ $b = 0.527148 - 0.273002I$	$-5.76976 + 7.61792I$	$-6.66397 - 8.10409I$
$u = -0.490814 + 1.270180I$ $a = 0.514001 + 0.677479I$ $b = 0.053980 - 0.728775I$	$-4.83122 - 1.66695I$	$-3.23585 + 1.59270I$
$u = -0.490814 - 1.270180I$ $a = 0.514001 - 0.677479I$ $b = 0.053980 + 0.728775I$	$-4.83122 + 1.66695I$	$-3.23585 - 1.59270I$
$u = 0.593865$ $a = -2.20766$ $b = -1.60115$	2.23989	-14.6790
$u = -0.054646 + 0.554847I$ $a = -0.16877 - 2.22368I$ $b = 0.907466 + 0.136097I$	$-2.80544 + 5.20612I$	$-3.31284 - 5.75521I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.054646 - 0.554847I$ $a = -0.16877 + 2.22368I$ $b = 0.907466 - 0.136097I$	$-2.80544 - 5.20612I$	$-3.31284 + 5.75521I$
$u = -1.04529 + 1.04359I$ $a = -1.052780 - 0.900847I$ $b = -2.20403 + 0.34853I$	$11.16560 - 3.84025I$	$0.45922 + 2.19131I$
$u = -1.04529 - 1.04359I$ $a = -1.052780 + 0.900847I$ $b = -2.20403 - 0.34853I$	$11.16560 + 3.84025I$	$0.45922 - 2.19131I$

III. $I_3^u =$
$\langle 2u^{12}a+29u^{12}+\cdots+2a+35,\ 5u^{12}a+9u^{12}+\cdots+3a+18,\ u^{13}+3u^{12}+\cdots+3u+1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^3 \\ u^3+u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} a \\ -\frac{1}{3}u^{12}a - \frac{29}{6}u^{12} + \cdots - \frac{1}{3}a - \frac{35}{6} \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} \frac{1}{3}u^{12}a + \frac{29}{6}u^{12} + \cdots + \frac{4}{3}a + \frac{35}{6} \\ -3u^{12} - \frac{13}{2}u^{11} + \cdots - 6u - \frac{5}{2} \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5+u^3+u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} \frac{1}{3}u^{12}a + \frac{29}{6}u^{12} + \cdots + \frac{4}{3}a + \frac{35}{6} \\ -\frac{1}{3}u^{12}a - \frac{29}{6}u^{12} + \cdots - \frac{1}{3}a - \frac{35}{6} \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -3u^{12}a - u^{12} + \cdots - \frac{5}{2}a - \frac{9}{2} \\ -\frac{11}{6}u^{12}a - \frac{1}{3}u^{12} + \cdots - \frac{10}{3}a - \frac{4}{3} \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -\frac{2}{3}u^{12}a - \frac{7}{6}u^{12} + \cdots + \frac{5}{6}a - \frac{25}{6} \\ -\frac{1}{3}u^{12}a + \frac{1}{6}u^{12} + \cdots - \frac{5}{6}a + \frac{7}{6} \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -4.83333au^{12} - 1.33333u^{12} + \cdots - 5.83333a - 4.33333 \\ 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 16u^{12}+41u^{11}+60u^{10}+32u^9+40u^8+24u^7-u^6-68u^5-7u^4+11u^3+14u^2+40u+27$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{13} + u^{12} + \cdots + 3u - 1)^2$
c_2, c_6	$(u^{13} + 3u^{12} + \cdots + 3u + 1)^2$
c_3	$(u^{13} - 3u^{12} + \cdots + 105u + 17)^2$
c_4, c_{10}	$u^{26} + u^{25} + \cdots - 1376u + 892$
c_5, c_7	$u^{26} + u^{25} + \cdots - 16u + 4$
c_8, c_{11}	$(u^{13} - 3u^{12} + \cdots + 7u - 3)^2$
c_9, c_{12}	$u^{26} + 3u^{25} + \cdots + 23978u + 3433$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{13} + 17y^{12} + \cdots + 3y - 1)^2$
c_2, c_6	$(y^{13} + y^{12} + \cdots + 3y - 1)^2$
c_3	$(y^{13} + 33y^{12} + \cdots - 4989y - 289)^2$
c_4, c_{10}	$y^{26} + 37y^{25} + \cdots + 7465488y + 795664$
c_5, c_7	$y^{26} - 3y^{25} + \cdots + 80y + 16$
c_8, c_{11}	$(y^{13} + 7y^{12} + \cdots - 47y - 9)^2$
c_9, c_{12}	$y^{26} - 37y^{25} + \cdots + 8143700y + 11785489$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.857473 + 0.279621I$		
$a = 1.146450 + 0.491555I$	$0.57111 + 2.96599I$	$3.40376 - 4.94078I$
$b = 0.796662 + 0.029542I$		
$u = 0.857473 + 0.279621I$		
$a = -0.374853 - 0.402281I$	$0.57111 + 2.96599I$	$3.40376 - 4.94078I$
$b = -0.42392 - 1.83114I$		
$u = 0.857473 - 0.279621I$		
$a = 1.146450 - 0.491555I$	$0.57111 - 2.96599I$	$3.40376 + 4.94078I$
$b = 0.796662 - 0.029542I$		
$u = 0.857473 - 0.279621I$		
$a = -0.374853 + 0.402281I$	$0.57111 - 2.96599I$	$3.40376 + 4.94078I$
$b = -0.42392 + 1.83114I$		
$u = 0.088692 + 0.874872I$		
$a = 0.079744 - 0.117957I$	$-4.13282 + 4.47957I$	$-8.13699 - 5.02939I$
$b = 1.001070 + 0.773133I$		
$u = 0.088692 + 0.874872I$		
$a = -1.48441 + 2.01611I$	$-4.13282 + 4.47957I$	$-8.13699 - 5.02939I$
$b = 0.206476 - 0.844754I$		
$u = 0.088692 - 0.874872I$		
$a = 0.079744 + 0.117957I$	$-4.13282 - 4.47957I$	$-8.13699 + 5.02939I$
$b = 1.001070 - 0.773133I$		
$u = 0.088692 - 0.874872I$		
$a = -1.48441 - 2.01611I$	$-4.13282 - 4.47957I$	$-8.13699 + 5.02939I$
$b = 0.206476 + 0.844754I$		
$u = 0.489695 + 1.024820I$		
$a = 0.058476 - 0.727827I$	$-1.86631 + 1.44615I$	$0.486202 - 0.156157I$
$b = 0.304979 - 0.504799I$		
$u = 0.489695 + 1.024820I$		
$a = 1.282050 - 0.518428I$	$-1.86631 + 1.44615I$	$0.486202 - 0.156157I$
$b = -0.296411 + 1.051110I$		

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.489695 - 1.024820I$ $a = 0.058476 + 0.727827I$ $b = 0.304979 + 0.504799I$	$-1.86631 - 1.44615I$	$0.486202 + 0.156157I$
$u = 0.489695 - 1.024820I$ $a = 1.282050 + 0.518428I$ $b = -0.296411 - 1.051110I$	$-1.86631 - 1.44615I$	$0.486202 + 0.156157I$
$u = -0.561016 + 0.356757I$ $a = 1.63590 + 0.02743I$ $b = 1.88883 + 0.58490I$	$-1.84199 - 6.08937I$	$0.96961 + 10.45336I$
$u = -0.561016 + 0.356757I$ $a = 0.60336 + 2.13477I$ $b = 0.573289 - 0.541656I$	$-1.84199 - 6.08937I$	$0.96961 + 10.45336I$
$u = -0.561016 - 0.356757I$ $a = 1.63590 - 0.02743I$ $b = 1.88883 - 0.58490I$	$-1.84199 + 6.08937I$	$0.96961 - 10.45336I$
$u = -0.561016 - 0.356757I$ $a = 0.60336 - 2.13477I$ $b = 0.573289 + 0.541656I$	$-1.84199 + 6.08937I$	$0.96961 - 10.45336I$
$u = -0.621780$ $a = -1.76823 + 0.25312I$ $b = -1.361550 - 0.318265I$	2.50154	10.0510
$u = -0.621780$ $a = -1.76823 - 0.25312I$ $b = -1.361550 + 0.318265I$	2.50154	10.0510
$u = -1.06899 + 0.97779I$ $a = 0.796159 + 0.828771I$ $b = 1.98967 + 0.49433I$	$10.99100 - 1.55475I$	$0.020480 - 0.977759I$
$u = -1.06899 + 0.97779I$ $a = -1.29235 - 0.85739I$ $b = -2.44763 + 0.61295I$	$10.99100 - 1.55475I$	$0.020480 - 0.977759I$

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.06899 - 0.97779I$ $a = 0.796159 - 0.828771I$ $b = 1.98967 - 0.49433I$	$10.99100 + 1.55475I$	$0.020480 + 0.977759I$
$u = -1.06899 - 0.97779I$ $a = -1.29235 + 0.85739I$ $b = -2.44763 - 0.61295I$	$10.99100 + 1.55475I$	$0.020480 + 0.977759I$
$u = -0.99496 + 1.07074I$ $a = 1.26903 + 0.78838I$ $b = 1.73331 - 0.96676I$	$10.65510 - 6.00257I$	$-0.76853 + 5.30238I$
$u = -0.99496 + 1.07074I$ $a = -0.95131 - 1.16272I$ $b = -2.46477 + 0.05337I$	$10.65510 - 6.00257I$	$-0.76853 + 5.30238I$
$u = -0.99496 - 1.07074I$ $a = 1.26903 - 0.78838I$ $b = 1.73331 + 0.96676I$	$10.65510 + 6.00257I$	$-0.76853 - 5.30238I$
$u = -0.99496 - 1.07074I$ $a = -0.95131 + 1.16272I$ $b = -2.46477 - 0.05337I$	$10.65510 + 6.00257I$	$-0.76853 - 5.30238I$

IV. $\boldsymbol{I^u_4 = \langle a^3u+a^3-a^2u-au+4b-4a-4u+1,\ a^4+2a^2u-3a^2-2au-2a-1,\ u^2-u+1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u-1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u-1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ u-1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} a \\ -\frac{1}{4}a^3u + \frac{1}{4}a^2u + \cdots + a - \frac{1}{4} \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} \frac{1}{4}a^3u - \frac{1}{4}a^2u + \cdots - a + \frac{1}{4} \\ \frac{1}{4}a^2u - \frac{7}{4}au + \cdots + \frac{9}{4}a + \frac{1}{2} \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} \frac{1}{4}a^3u - \frac{1}{4}a^2u + \cdots + \frac{1}{4}a^3 + \frac{1}{4} \\ -\frac{1}{4}a^3u + \frac{1}{4}a^2u + \cdots + a - \frac{1}{4} \end{pmatrix}$$
$$a_5 = \begin{pmatrix} \frac{1}{4}a^3u - a^2u + \cdots + \frac{5}{4}a + \frac{7}{4} \\ \frac{1}{4}a^2u + \frac{1}{4}au + \cdots - \frac{3}{4}a - \frac{3}{2} \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -\frac{1}{2}a^2u + \frac{1}{2}au + \cdots - \frac{1}{2}a - 1 \\ \frac{1}{2}a^2u - \frac{1}{2}au + \cdots + \frac{3}{2}a + 2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -\frac{1}{4}a^3u - \frac{1}{2}a^2u + \cdots + \frac{1}{4}a - \frac{3}{4} \\ 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u - 4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_6	$(u^2 - u + 1)^4$
c_2	$(u^2 + u + 1)^4$
c_4, c_{10}	$u^8 + 3u^6 + 2u^5 + 7u^4 + 6u^3 + 10u^2 + 4u + 4$
c_5, c_7	$u^8 + 2u^7 - u^6 - 4u^5 + 3u^4 + 6u^3 - 6u^2 - 4u + 4$
c_8, c_9, c_{11} c_{12}	$(u^2 + 1)^4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_6	$(y^2 + y + 1)^4$
c_4, c_{10}	$y^8 + 6y^7 + 23y^6 + 58y^5 + 93y^4 + 112y^3 + 108y^2 + 64y + 16$
c_5, c_7	$y^8 - 6y^7 + 23y^6 - 58y^5 + 93y^4 - 112y^3 + 108y^2 - 64y + 16$
c_8, c_9, c_{11} c_{12}	$(y + 1)^8$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_4	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.500000 + 0.866025I$ $a = -0.201767 - 1.028230I$ $b = -1.000000I$	$-3.28987 + 2.02988I$	$-6.00000 - 3.46410I$
$u = 0.500000 + 0.866025I$ $a = -0.204148 + 0.171012I$ $b = 1.000000I$	$-3.28987 + 2.02988I$	$-6.00000 - 3.46410I$
$u = 0.500000 + 0.866025I$ $a = -1.53028 + 1.02823I$ $b = -1.000000I$	$-3.28987 + 2.02988I$	$-6.00000 - 3.46410I$
$u = 0.500000 + 0.866025I$ $a = 1.93620 - 0.17101I$ $b = 1.000000I$	$-3.28987 + 2.02988I$	$-6.00000 - 3.46410I$
$u = 0.500000 - 0.866025I$ $a = -0.201767 + 1.028230I$ $b = 1.000000I$	$-3.28987 - 2.02988I$	$-6.00000 + 3.46410I$
$u = 0.500000 - 0.866025I$ $a = -0.204148 - 0.171012I$ $b = -1.000000I$	$-3.28987 - 2.02988I$	$-6.00000 + 3.46410I$
$u = 0.500000 - 0.866025I$ $a = -1.53028 - 1.02823I$ $b = 1.000000I$	$-3.28987 - 2.02988I$	$-6.00000 + 3.46410I$
$u = 0.500000 - 0.866025I$ $a = 1.93620 + 0.17101I$ $b = -1.000000I$	$-3.28987 - 2.02988I$	$-6.00000 + 3.46410I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2-u+1)^4)(u^{13}-5u^{12}+\cdots-6u+1)(u^{13}+u^{12}+\cdots+3u-1)^2$ $\cdot(u^{23}+4u^{22}+\cdots-35u-4)$
c_2	$((u^2+u+1)^4)(u^{13}-5u^{12}+\cdots-2u+1)(u^{13}+3u^{12}+\cdots+3u+1)^2$ $\cdot(u^{23}-8u^{22}+\cdots-11u+2)$
c_3	$((u^2-u+1)^4)(u^{13}-3u^{12}+\cdots+105u+17)^2$ $\cdot(u^{13}+5u^{12}+\cdots+2u+5)(u^{23}+8u^{22}+\cdots-17339u+16754)$
c_4, c_{10}	$(u^8+3u^6+\cdots+4u+4)(u^{13}+5u^{11}+\cdots+2u-1)$ $\cdot(u^{23}+16u^{21}+\cdots-4u-1)(u^{26}+u^{25}+\cdots-1376u+892)$
c_5, c_7	$(u^8+2u^7-u^6-4u^5+3u^4+6u^3-6u^2-4u+4)$ $\cdot(u^{13}-3u^{11}+\cdots+3u+1)(u^{23}-8u^{21}+\cdots+5u-1)$ $\cdot(u^{26}+u^{25}+\cdots-16u+4)$
c_6	$((u^2-u+1)^4)(u^{13}+3u^{12}+\cdots+3u+1)^2(u^{13}+5u^{12}+\cdots-2u-1)$ $\cdot(u^{23}-8u^{22}+\cdots-11u+2)$
c_8	$((u^2+1)^4)(u^{13}-3u^{12}+\cdots+7u-3)^2(u^{13}+7u^{12}+\cdots+18u+5)$ $\cdot(u^{23}+10u^{22}+\cdots-29u-4)$
c_9, c_{12}	$((u^2+1)^4)(u^{13}-3u^{12}+\cdots-2u-1)(u^{23}+3u^{22}+\cdots-10u-1)$ $\cdot(u^{26}+3u^{25}+\cdots+23978u+3433)$
c_{11}	$((u^2+1)^4)(u^{13}-7u^{12}+\cdots+18u-5)(u^{13}-3u^{12}+\cdots+7u-3)^2$ $\cdot(u^{23}+10u^{22}+\cdots-29u-4)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^2+y+1)^4)(y^{13}+5y^{12}+\cdots+30y-1)$ $\cdot((y^{13}+17y^{12}+\cdots+3y-1)^2)(y^{23}+44y^{22}+\cdots-1519y-16)$
c_2, c_6	$((y^2+y+1)^4)(y^{13}+y^{12}+\cdots+3y-1)^2(y^{13}+5y^{12}+\cdots-6y-1)$ $\cdot(y^{23}+4y^{22}+\cdots-35y-4)$
c_3	$((y^2+y+1)^4)(y^{13}+5y^{12}+\cdots-336y-25)$ $\cdot(y^{13}+33y^{12}+\cdots-4989y-289)^2$ $\cdot(y^{23}+84y^{22}+\cdots-4785303843y-280696516)$
c_4, c_{10}	$(y^8+6y^7+23y^6+58y^5+93y^4+112y^3+108y^2+64y+16)$ $\cdot(y^{13}+10y^{12}+\cdots-8y-1)(y^{23}+32y^{22}+\cdots+2y-1)$ $\cdot(y^{26}+37y^{25}+\cdots+7465488y+795664)$
c_5, c_7	$(y^8-6y^7+23y^6-58y^5+93y^4-112y^3+108y^2-64y+16)$ $\cdot(y^{13}-6y^{12}+\cdots+3y-1)(y^{23}-16y^{22}+\cdots+33y-1)$ $\cdot(y^{26}-3y^{25}+\cdots+80y+16)$
c_8, c_{11}	$((y+1)^8)(y^{13}+3y^{12}+\cdots+124y-25)(y^{13}+7y^{12}+\cdots-47y-9)^2$ $\cdot(y^{23}+6y^{22}+\cdots-575y-16)$
c_9, c_{12}	$((y+1)^8)(y^{13}-13y^{12}+\cdots+6y-1)(y^{23}-39y^{22}+\cdots-196y-1)$ $\cdot(y^{26}-37y^{25}+\cdots+8143700y+11785489)$