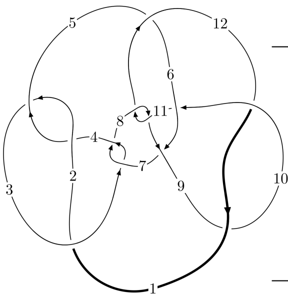
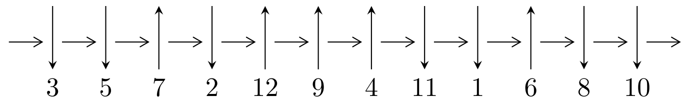
$12a_{0066}$ ($K12a_{0066}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 6.80476 \times 10^{108} u^{49} + 2.19909 \times 10^{108} u^{48} + \cdots + 1.95260 \times 10^{111} b - 2.72720 \times 10^{111}, \\
& -4.84605 \times 10^{110} u^{49} - 1.94945 \times 10^{110} u^{48} + \cdots + 1.24966 \times 10^{113} a + 4.21327 \times 10^{112}, \\
& u^{50} - 12u^{48} + \cdots + 288u + 256 \rangle \\
I_2^u = \langle & -1.95324 \times 10^{37} a u^{41} + 1.89496 \times 10^{37} u^{41} + \cdots + 2.35403 \times 10^{38} a - 3.16022 \times 10^{38}, \\
& 1.51510 \times 10^{33} a u^{41} + 3.94443 \times 10^{33} u^{41} + \cdots - 3.53502 \times 10^{34} a + 1.31758 \times 10^{33},\ u^{42} - u^{41} + \cdots - 28u + \\
I_3^u = \langle & b - 1,\ -2u^5 + 4u^3 + 2u^2 + 2a - 4u + 1,\ u^6 + u^5 - u^4 - 2u^3 + u + 1 \rangle
\end{aligned}$$

$$\begin{aligned}
I_1^v &= \langle a,\ 4v^3 + 7v^2 + 3b + 6v + 1,\ 4v^4 + 7v^3 + 2v^2 - v + 1 \rangle \\
I_2^v &= \langle a,\ v^2 b + b^2 - 2bv + v^2 + b - v,\ v^3 - 2v^2 + v - 1 \rangle
\end{aligned}$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 150 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. $\boldsymbol{I_1^u = \langle 6.80 \times 10^{108} u^{49} + 2.20 \times 10^{108} u^{48} + \cdots + 1.95 \times 10^{111} b - 2.73 \times 10^{111},\ -4.85 \times 10^{110} u^{49} - 1.95 \times 10^{110} u^{48} + \cdots + 1.25 \times 10^{113} a + 4.21 \times 10^{112},\ u^{50} - 12u^{48} + \cdots + 288u + 256 \rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0.00387789u^{49} + 0.00155998u^{48} + \cdots + 1.14208u - 0.337153 \\ -0.00348498u^{49} - 0.00112624u^{48} + \cdots - 0.0926115u + 1.39671 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.000392909u^{49} + 0.000433746u^{48} + \cdots + 1.04946u + 1.05955 \\ -0.00348498u^{49} - 0.00112624u^{48} + \cdots - 0.0926115u + 1.39671 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.00111006u^{49} + 0.000131981u^{48} + \cdots - 1.27976u + 0.512699 \\ 0.00140446u^{49} + 0.00290843u^{48} + \cdots - 5.70099u - 1.73217 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.00201779u^{49} + 0.00143250u^{48} + \cdots - 0.109009u + 0.480487 \\ -0.00781200u^{49} - 0.00431636u^{48} + \cdots + 5.00237u + 1.88446 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.00484500u^{49} - 0.000170753u^{48} + \cdots - 3.72519u - 1.11366 \\ -0.00778716u^{49} - 0.000940792u^{48} + \cdots + 8.29788u + 2.19949 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.00532065u^{49} + 5.33603 \times 10^{-6}u^{48} + \cdots - 5.76383u - 1.04212 \\ -0.00949931u^{49} - 0.00114275u^{48} + \cdots + 8.12540u + 2.15441 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.00121926u^{49} - 0.00119597u^{48} + \cdots - 2.16726u - 0.00363201 \\ 0.00360994u^{49} + 0.00427773u^{48} + \cdots - 1.54167u + 0.244495 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.00294216u^{49} - 0.00111155u^{48} + \cdots + 4.57269u + 1.08583 \\ 0.00749971u^{49} + 0.000932472u^{48} + \cdots - 7.22456u - 1.91494 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.0110690u^{49} - 0.00700300u^{48} + \cdots + 18.6252u + 7.32722$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{50} + 24u^{49} + \cdots - 3807u + 256$
c_2, c_4	$u^{50} - 4u^{49} + \cdots - 129u + 16$
c_3, c_7	$u^{50} - 12u^{48} + \cdots + 288u + 256$
c_5, c_6	$64(64u^{50} + 160u^{49} + \cdots + 14u^2 + 1)$
c_8, c_9, c_{11} c_{12}	$u^{50} + 6u^{49} + \cdots + 2u + 1$
c_{10}	$u^{50} - 6u^{49} + \cdots - 94208u + 16384$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{50} + 8y^{49} + \cdots - 4265025y + 65536$
c_2, c_4	$y^{50} - 24y^{49} + \cdots + 3807y + 256$
c_3, c_7	$y^{50} - 24y^{49} + \cdots - 971776y + 65536$
c_5, c_6	$4096(4096y^{50} - 31744y^{49} + \cdots + 28y + 1)$
c_8, c_9, c_{11} c_{12}	$y^{50} + 22y^{49} + \cdots + 50y + 1$
c_{10}	$y^{50} - 14y^{49} + \cdots - 3875536896y + 268435456$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.898117 + 0.279435I$ $a = 0.671077 + 0.045381I$ $b = -0.247217 - 0.158952I$	$1.50673 + 0.62503I$	$6.47419 - 0.03134I$
$u = 0.898117 - 0.279435I$ $a = 0.671077 - 0.045381I$ $b = -0.247217 + 0.158952I$	$1.50673 - 0.62503I$	$6.47419 + 0.03134I$
$u = 0.965194 + 0.442129I$ $a = -1.61017 - 0.22648I$ $b = 1.071190 - 0.624443I$	$-2.71273 + 4.53515I$	$-2.87509 - 2.93075I$
$u = 0.965194 - 0.442129I$ $a = -1.61017 + 0.22648I$ $b = 1.071190 + 0.624443I$	$-2.71273 - 4.53515I$	$-2.87509 + 2.93075I$
$u = -0.815600 + 0.692403I$ $a = 0.972370 + 0.356228I$ $b = -0.469378 - 0.920279I$	$-0.49128 - 8.69321I$	$-1.67470 + 11.86102I$
$u = -0.815600 - 0.692403I$ $a = 0.972370 - 0.356228I$ $b = -0.469378 + 0.920279I$	$-0.49128 + 8.69321I$	$-1.67470 - 11.86102I$
$u = 0.391611 + 0.792627I$ $a = -2.56595 - 0.65373I$ $b = 1.172710 - 0.211438I$	$-3.48472 - 1.30066I$	$1.53330 + 11.98211I$
$u = 0.391611 - 0.792627I$ $a = -2.56595 + 0.65373I$ $b = 1.172710 + 0.211438I$	$-3.48472 + 1.30066I$	$1.53330 - 11.98211I$
$u = -1.113190 + 0.328139I$ $a = -0.766999 + 0.669164I$ $b = 1.346160 - 0.166657I$	$0.75440 - 1.33711I$	$8.60470 + 4.56613I$
$u = -1.113190 - 0.328139I$ $a = -0.766999 - 0.669164I$ $b = 1.346160 + 0.166657I$	$0.75440 + 1.33711I$	$8.60470 - 4.56613I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.003630 + 0.588097I$ $a = 0.616489 - 0.235311I$ $b = -0.351193 + 0.342652I$	$-0.52997 - 5.02287I$	$1.42361 + 2.95767I$
$u = -1.003630 - 0.588097I$ $a = 0.616489 + 0.235311I$ $b = -0.351193 - 0.342652I$	$-0.52997 + 5.02287I$	$1.42361 - 2.95767I$
$u = 1.112250 + 0.378181I$ $a = 1.37497 + 1.15202I$ $b = -0.511869 + 1.290650I$	$3.14115 + 10.05270I$	$1.54666 - 6.99924I$
$u = 1.112250 - 0.378181I$ $a = 1.37497 - 1.15202I$ $b = -0.511869 - 1.290650I$	$3.14115 - 10.05270I$	$1.54666 + 6.99924I$
$u = -0.195744 + 1.173710I$ $a = 0.764863 - 0.753983I$ $b = -0.460044 + 1.282800I$	$5.62294 + 7.71288I$	$3.01131 - 4.10494I$
$u = -0.195744 - 1.173710I$ $a = 0.764863 + 0.753983I$ $b = -0.460044 - 1.282800I$	$5.62294 - 7.71288I$	$3.01131 + 4.10494I$
$u = -0.778976 + 0.095167I$ $a = -1.011110 - 0.147769I$ $b = 0.774047 - 0.742819I$	$-1.54304 + 0.82047I$	$-0.34103 + 1.51386I$
$u = -0.778976 - 0.095167I$ $a = -1.011110 + 0.147769I$ $b = 0.774047 + 0.742819I$	$-1.54304 - 0.82047I$	$-0.34103 - 1.51386I$
$u = 0.546215 + 0.490567I$ $a = -0.47633 - 2.47862I$ $b = 1.002780 + 0.289724I$	$-3.92674 - 0.66017I$	$-8.3250 - 13.1911I$
$u = 0.546215 - 0.490567I$ $a = -0.47633 + 2.47862I$ $b = 1.002780 - 0.289724I$	$-3.92674 + 0.66017I$	$-8.3250 + 13.1911I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.502657 + 1.174230I$ $a = 0.840947 + 0.823851I$ $b = -0.53623 - 1.31854I$	$4.16035 - 12.95250I$	$0.95450 + 8.17982I$
$u = 0.502657 - 1.174230I$ $a = 0.840947 - 0.823851I$ $b = -0.53623 + 1.31854I$	$4.16035 + 12.95250I$	$0.95450 - 8.17982I$
$u = 1.151050 + 0.579567I$ $a = -1.12350 - 0.93703I$ $b = 1.379840 + 0.292717I$	$-1.15010 + 6.50993I$	$2.90407 - 9.24766I$
$u = 1.151050 - 0.579567I$ $a = -1.12350 + 0.93703I$ $b = 1.379840 - 0.292717I$	$-1.15010 - 6.50993I$	$2.90407 + 9.24766I$
$u = -1.241740 + 0.418945I$ $a = 0.523890 - 0.607495I$ $b = 0.048258 - 0.824590I$	$-1.051330 + 0.854717I$	$-9.88678 - 3.08419I$
$u = -1.241740 - 0.418945I$ $a = 0.523890 + 0.607495I$ $b = 0.048258 + 0.824590I$	$-1.051330 - 0.854717I$	$-9.88678 + 3.08419I$
$u = 0.570734 + 0.264073I$ $a = 0.981699 + 0.648623I$ $b = -0.598386 - 1.137800I$	$1.13411 - 7.11668I$	$4.00252 - 2.15626I$
$u = 0.570734 - 0.264073I$ $a = 0.981699 - 0.648623I$ $b = -0.598386 + 1.137800I$	$1.13411 + 7.11668I$	$4.00252 + 2.15626I$
$u = -0.370485 + 0.488941I$ $a = 1.40100 + 0.26552I$ $b = 0.059670 - 0.170060I$	$-1.77807 + 0.66799I$	$-4.16532 + 0.83627I$
$u = -0.370485 - 0.488941I$ $a = 1.40100 - 0.26552I$ $b = 0.059670 + 0.170060I$	$-1.77807 - 0.66799I$	$-4.16532 - 0.83627I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.795488 + 1.154490I$ $a = 0.594105 - 0.281157I$ $b = -0.222609 + 1.026440I$	$3.64839 + 4.61933I$	$3.31531 - 11.47051I$
$u = 0.795488 - 1.154490I$ $a = 0.594105 + 0.281157I$ $b = -0.222609 - 1.026440I$	$3.64839 - 4.61933I$	$3.31531 + 11.47051I$
$u = -0.19057 + 1.41148I$ $a = -0.189641 + 0.204297I$ $b = 0.183449 - 0.960795I$	$1.12888 + 3.74820I$	$0. - 12.89354I$
$u = -0.19057 - 1.41148I$ $a = -0.189641 - 0.204297I$ $b = 0.183449 + 0.960795I$	$1.12888 - 3.74820I$	$0. + 12.89354I$
$u = -1.30509 + 0.60711I$ $a = 1.50657 - 0.37542I$ $b = -0.55176 - 1.36199I$	$9.1915 - 13.9309I$	$0. + 7.22655I$
$u = -1.30509 - 0.60711I$ $a = 1.50657 + 0.37542I$ $b = -0.55176 + 1.36199I$	$9.1915 + 13.9309I$	$0. - 7.22655I$
$u = -0.92121 + 1.12031I$ $a = -0.177275 - 0.218827I$ $b = -0.126991 + 0.884845I$	$-0.38233 + 2.45424I$	$0. - 9.83894I$
$u = -0.92121 - 1.12031I$ $a = -0.177275 + 0.218827I$ $b = -0.126991 - 0.884845I$	$-0.38233 - 2.45424I$	$0. + 9.83894I$
$u = 1.25070 + 0.75757I$ $a = 1.76373 + 0.19301I$ $b = -0.59610 + 1.35908I$	$6.5813 + 19.8578I$	0
$u = 1.25070 - 0.75757I$ $a = 1.76373 - 0.19301I$ $b = -0.59610 - 1.35908I$	$6.5813 - 19.8578I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.428127+0.285395I$ $a=-0.800907+0.886390I$ $b=\ \ 0.694592+0.408886I$	$-1.23082-1.07266I$	$-4.68345+2.46317I$
$u=-0.428127-0.285395I$ $a=-0.800907-0.886390I$ $b=\ \ 0.694592-0.408886I$	$-1.23082+1.07266I$	$-4.68345-2.46317I$
$u=-1.52390+0.01972I$ $a=\ \ 0.334754-0.368783I$ $b=-0.356016-1.353720I$	$12.2277-8.7964I$	0
$u=-1.52390-0.01972I$ $a=\ \ 0.334754+0.368783I$ $b=-0.356016+1.353720I$	$12.2277+8.7964I$	0
$u=-1.35309+0.74274I$ $a=-1.014570+0.310379I$ $b=\ \ 0.334802+1.144640I$	$4.61279-11.08970I$	0
$u=-1.35309-0.74274I$ $a=-1.014570-0.310379I$ $b=\ \ 0.334802-1.144640I$	$4.61279+11.08970I$	0
$u=\ \ 1.55085+0.24154I$ $a=-0.024960-0.231338I$ $b=-0.262084-1.311530I$	$11.83750-2.26957I$	0
$u=\ \ 1.55085-0.24154I$ $a=-0.024960+0.231338I$ $b=-0.262084+1.311530I$	$11.83750+2.26957I$	0
$u=\ \ 1.50650+0.58645I$ $a=-0.663181-0.347229I$ $b=\ \ 0.222382-1.119540I$	$7.01611+4.67438I$	0
$u=\ \ 1.50650-0.58645I$ $a=-0.663181+0.347229I$ $b=\ \ 0.222382+1.119540I$	$7.01611-4.67438I$	0

II. $\boldsymbol{I^u_2 = \langle -1.95\times 10^{37} a u^{41} + 1.89\times 10^{37} u^{41} + \cdots + 2.35\times 10^{38} a - 3.16\times 10^{38},\ 1.52\times 10^{33} a u^{41} + 3.94\times 10^{33} u^{41} + \cdots - 3.54\times 10^{34} a + 1.32\times 10^{33},\ u^{42} - u^{41} + \cdots - 28u + 8\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} a \\ 0.420527au^{41} - 0.407981u^{41} + \cdots - 5.06818a + 6.80388 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.420527au^{41} - 0.407981u^{41} + \cdots - 4.06818a + 6.80388 \\ 0.420527au^{41} - 0.407981u^{41} + \cdots - 5.06818a + 6.80388 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.154531au^{41} - 2.43911u^{41} + \cdots - 3.26279a + 32.6290 \\ -0.282246au^{41} - 0.279866u^{41} + \cdots + 1.49713a + 0.975049 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.729646au^{41} - 0.107181u^{41} + \cdots + 11.1484a - 9.07282 \\ -0.190720au^{41} - 0.538926u^{41} + \cdots + 1.43722a + 9.71123 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.600678u^{41} + 0.244644u^{40} + \cdots - 16.9635u + 8.41409 \\ -0.578537u^{41} + 0.112322u^{40} + \cdots - 9.27967u + 4.53403 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1.08667u^{41} - 0.309169u^{40} + \cdots + 21.0796u - 10.0999 \\ 0.105021u^{41} - 0.110845u^{40} + \cdots + 8.96049u - 4.53423 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.407981au^{41} - 2.35024u^{41} + \cdots - 6.80388a + 31.7051 \\ -1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -1.17921u^{41} + 0.356966u^{40} + \cdots - 26.2432u + 12.9481 \\ 0.0287964u^{41} + 0.00828293u^{40} + \cdots - 4.30958u + 2.04396 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 3.13855u^{41} - 0.644766u^{40} + \cdots + 69.1611u - 17.9282$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{42}+20u^{41}+\cdots+39u+1)^2$
c_2, c_4	$(u^{42}-4u^{41}+\cdots+7u-1)^2$
c_3, c_7	$(u^{42}-u^{41}+\cdots-28u+8)^2$
c_5, c_6	$u^{84}+2u^{83}+\cdots+581438984u+60886121$
c_8, c_9, c_{11} c_{12}	$u^{84}-14u^{83}+\cdots-4u+1$
c_{10}	$(u^{42}+2u^{41}+\cdots-2u-1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{42} + 8y^{41} + \cdots - 999y + 1)^2$
c_2, c_4	$(y^{42} - 20y^{41} + \cdots - 39y + 1)^2$
c_3, c_7	$(y^{42} - 21y^{41} + \cdots - 784y + 64)^2$
c_5, c_6	$y^{84} - 38y^{83} + \cdots - 58401168007787376y + 3707119730426641$
c_8, c_9, c_{11} c_{12}	$y^{84} + 54y^{83} + \cdots - 60y^2 + 1$
c_{10}	$(y^{42} - 14y^{41} + \cdots + 2y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.232737 + 0.958770I$ $a = 1.51165 - 1.20059I$ $b = -0.41354 + 1.37451I$	$4.96975 - 2.03798I$	$4.18964 + 3.67578I$
$u = 0.232737 + 0.958770I$ $a = 1.47814 + 1.41134I$ $b = -0.564224 - 1.240190I$	$4.96975 - 2.03798I$	$4.18964 + 3.67578I$
$u = 0.232737 - 0.958770I$ $a = 1.51165 + 1.20059I$ $b = -0.41354 - 1.37451I$	$4.96975 + 2.03798I$	$4.18964 - 3.67578I$
$u = 0.232737 - 0.958770I$ $a = 1.47814 - 1.41134I$ $b = -0.564224 + 1.240190I$	$4.96975 + 2.03798I$	$4.18964 - 3.67578I$
$u = 0.912821 + 0.370122I$ $a = 0.081154 + 0.848484I$ $b = -0.964211 - 0.072097I$	$-0.63969 + 4.75718I$	$-1.27952 - 5.86296I$
$u = 0.912821 + 0.370122I$ $a = -1.76377 - 1.53546I$ $b = 0.522152 - 1.265870I$	$-0.63969 + 4.75718I$	$-1.27952 - 5.86296I$
$u = 0.912821 - 0.370122I$ $a = 0.081154 - 0.848484I$ $b = -0.964211 + 0.072097I$	$-0.63969 - 4.75718I$	$-1.27952 + 5.86296I$
$u = 0.912821 - 0.370122I$ $a = -1.76377 + 1.53546I$ $b = 0.522152 + 1.265870I$	$-0.63969 - 4.75718I$	$-1.27952 + 5.86296I$
$u = -0.834355 + 0.450716I$ $a = 0.496950 - 0.930335I$ $b = -0.051378 - 0.222509I$	$-1.30280 + 0.70618I$	$-3.37702 + 0.55676I$
$u = -0.834355 + 0.450716I$ $a = 1.80822 - 0.48836I$ $b = 0.034418 - 0.871050I$	$-1.30280 + 0.70618I$	$-3.37702 + 0.55676I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.834355 - 0.450716I$ $a = \quad 0.496950 + 0.930335I$ $b = -0.051378 + 0.222509I$	$-1.30280 - 0.70618I$	$-3.37702 - 0.55676I$
$u = -0.834355 - 0.450716I$ $a = \quad 1.80822 + 0.48836I$ $b = \quad 0.034418 + 0.871050I$	$-1.30280 - 0.70618I$	$-3.37702 - 0.55676I$
$u = -0.497589 + 0.958024I$ $a = -0.323160 + 0.697370I$ $b = \quad 0.183345 + 0.113079I$	$-0.62266 + 1.78828I$	$-3.96378 - 1.37373I$
$u = -0.497589 + 0.958024I$ $a = \quad 0.401410 - 0.545035I$ $b = -0.107100 + 0.951359I$	$-0.62266 + 1.78828I$	$-3.96378 - 1.37373I$
$u = -0.497589 - 0.958024I$ $a = -0.323160 - 0.697370I$ $b = \quad 0.183345 - 0.113079I$	$-0.62266 - 1.78828I$	$-3.96378 + 1.37373I$
$u = -0.497589 - 0.958024I$ $a = \quad 0.401410 + 0.545035I$ $b = -0.107100 - 0.951359I$	$-0.62266 - 1.78828I$	$-3.96378 + 1.37373I$
$u = -0.134308 + 0.909932I$ $a = -0.589936 + 1.116220I$ $b = \quad 0.411288 - 1.253390I$	$1.66534 + 2.94974I$	$0.00088 - 1.92478I$
$u = -0.134308 + 0.909932I$ $a = \quad 1.55526 - 0.61214I$ $b = -0.848427 + 0.025203I$	$1.66534 + 2.94974I$	$0.00088 - 1.92478I$
$u = -0.134308 - 0.909932I$ $a = -0.589936 - 1.116220I$ $b = \quad 0.411288 + 1.253390I$	$1.66534 - 2.94974I$	$0.00088 + 1.92478I$
$u = -0.134308 - 0.909932I$ $a = \quad 1.55526 + 0.61214I$ $b = -0.848427 - 0.025203I$	$1.66534 - 2.94974I$	$0.00088 + 1.92478I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.086850 + 0.154461I$ $a = 0.49387 - 1.92438I$ $b = 0.034469 - 1.177150I$	$5.32687 + 0.16365I$	$1.74023 - 0.29295I$
$u = 1.086850 + 0.154461I$ $a = -1.72226 - 1.23616I$ $b = 0.217618 + 0.718151I$	$5.32687 + 0.16365I$	$1.74023 - 0.29295I$
$u = 1.086850 - 0.154461I$ $a = 0.49387 + 1.92438I$ $b = 0.034469 + 1.177150I$	$5.32687 - 0.16365I$	$1.74023 + 0.29295I$
$u = 1.086850 - 0.154461I$ $a = -1.72226 + 1.23616I$ $b = 0.217618 - 0.718151I$	$5.32687 - 0.16365I$	$1.74023 + 0.29295I$
$u = -0.798766 + 0.403013I$ $a = 1.009400 - 0.071564I$ $b = -0.638014 + 0.604613I$	$-1.44979 - 4.32552I$	$-2.33469 + 7.57694I$
$u = -0.798766 + 0.403013I$ $a = -0.758354 - 0.408384I$ $b = 0.594014 + 0.749718I$	$-1.44979 - 4.32552I$	$-2.33469 + 7.57694I$
$u = -0.798766 - 0.403013I$ $a = 1.009400 + 0.071564I$ $b = -0.638014 - 0.604613I$	$-1.44979 + 4.32552I$	$-2.33469 - 7.57694I$
$u = -0.798766 - 0.403013I$ $a = -0.758354 + 0.408384I$ $b = 0.594014 - 0.749718I$	$-1.44979 + 4.32552I$	$-2.33469 - 7.57694I$
$u = 0.465404 + 1.033510I$ $a = -0.776621 - 1.132340I$ $b = 0.56253 + 1.31912I$	$0.23764 - 7.32917I$	$-1.90854 + 6.67478I$
$u = 0.465404 + 1.033510I$ $a = 1.70092 + 0.38646I$ $b = -1.050300 + 0.064111I$	$0.23764 - 7.32917I$	$-1.90854 + 6.67478I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.465404 - 1.033510I$ $a = -0.776621 + 1.132340I$ $b = 0.56253 - 1.31912I$	$0.23764 + 7.32917I$	$-1.90854 - 6.67478I$
$u = 0.465404 - 1.033510I$ $a = 1.70092 - 0.38646I$ $b = -1.050300 - 0.064111I$	$0.23764 + 7.32917I$	$-1.90854 - 6.67478I$
$u = 0.755565 + 0.337157I$ $a = -0.856993 - 0.803825I$ $b = 0.671995 + 1.050850I$	$-1.18242 - 1.63203I$	$-1.08702 - 2.62995I$
$u = 0.755565 + 0.337157I$ $a = 1.399160 + 0.102365I$ $b = -0.912786 + 0.392807I$	$-1.18242 - 1.63203I$	$-1.08702 - 2.62995I$
$u = 0.755565 - 0.337157I$ $a = -0.856993 + 0.803825I$ $b = 0.671995 - 1.050850I$	$-1.18242 + 1.63203I$	$-1.08702 + 2.62995I$
$u = 0.755565 - 0.337157I$ $a = 1.399160 - 0.102365I$ $b = -0.912786 - 0.392807I$	$-1.18242 + 1.63203I$	$-1.08702 + 2.62995I$
$u = 0.265196 + 0.777853I$ $a = -0.132473 + 0.867658I$ $b = 0.199134 - 1.031900I$	$1.22766 + 2.20756I$	$-0.91183 - 4.39193I$
$u = 0.265196 + 0.777853I$ $a = 0.798380 - 0.862355I$ $b = -0.377178 - 0.039196I$	$1.22766 + 2.20756I$	$-0.91183 - 4.39193I$
$u = 0.265196 - 0.777853I$ $a = -0.132473 - 0.867658I$ $b = 0.199134 + 1.031900I$	$1.22766 - 2.20756I$	$-0.91183 + 4.39193I$
$u = 0.265196 - 0.777853I$ $a = 0.798380 + 0.862355I$ $b = -0.377178 + 0.039196I$	$1.22766 - 2.20756I$	$-0.91183 + 4.39193I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.791058$ $a = 0.20284 + 2.66753I$ $b = -0.440001 + 1.257300I$	3.61503	7.17890
$u = 0.791058$ $a = 0.20284 - 2.66753I$ $b = -0.440001 - 1.257300I$	3.61503	7.17890
$u = -1.119440 + 0.484001I$ $a = -1.93177 + 0.44893I$ $b = 0.291230 - 0.895374I$	$3.92176 - 5.08816I$	$-1.48038 + 5.57765I$
$u = -1.119440 + 0.484001I$ $a = -0.97311 + 1.76409I$ $b = 0.122020 + 1.178420I$	$3.92176 - 5.08816I$	$-1.48038 + 5.57765I$
$u = -1.119440 - 0.484001I$ $a = -1.93177 - 0.44893I$ $b = 0.291230 + 0.895374I$	$3.92176 + 5.08816I$	$-1.48038 - 5.57765I$
$u = -1.119440 - 0.484001I$ $a = -0.97311 - 1.76409I$ $b = 0.122020 - 1.178420I$	$3.92176 + 5.08816I$	$-1.48038 - 5.57765I$
$u = 1.136730 + 0.486401I$ $a = -0.500617 + 0.509781I$ $b = 0.353261 - 0.070116I$	$3.85619 + 2.39851I$	$1.004040 - 0.878657I$
$u = 1.136730 + 0.486401I$ $a = 1.40932 + 0.50529I$ $b = -0.158839 + 1.079200I$	$3.85619 + 2.39851I$	$1.004040 - 0.878657I$
$u = 1.136730 - 0.486401I$ $a = -0.500617 - 0.509781I$ $b = 0.353261 + 0.070116I$	$3.85619 - 2.39851I$	$1.004040 + 0.878657I$
$u = 1.136730 - 0.486401I$ $a = 1.40932 - 0.50529I$ $b = -0.158839 - 1.079200I$	$3.85619 - 2.39851I$	$1.004040 + 0.878657I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.207670 + 0.341373I$ $a = 0.813751 + 0.915422I$ $b = -0.900058 - 0.532369I$	$6.14713 + 1.06689I$	$3.69538 - 0.36183I$
$u = 1.207670 + 0.341373I$ $a = 0.554985 + 0.079494I$ $b = 0.15484 + 1.48362I$	$6.14713 + 1.06689I$	$3.69538 - 0.36183I$
$u = 1.207670 - 0.341373I$ $a = 0.813751 - 0.915422I$ $b = -0.900058 + 0.532369I$	$6.14713 - 1.06689I$	$3.69538 + 0.36183I$
$u = 1.207670 - 0.341373I$ $a = 0.554985 - 0.079494I$ $b = 0.15484 - 1.48362I$	$6.14713 - 1.06689I$	$3.69538 + 0.36183I$
$u = -1.263970 + 0.066052I$ $a = 0.665062 - 0.472891I$ $b = -0.986879 + 0.316168I$	$6.95353 + 4.35155I$	$4.59858 - 5.33139I$
$u = -1.263970 + 0.066052I$ $a = -0.038901 - 0.425858I$ $b = 0.31332 - 1.45728I$	$6.95353 + 4.35155I$	$4.59858 - 5.33139I$
$u = -1.263970 - 0.066052I$ $a = 0.665062 + 0.472891I$ $b = -0.986879 - 0.316168I$	$6.95353 - 4.35155I$	$4.59858 + 5.33139I$
$u = -1.263970 - 0.066052I$ $a = -0.038901 + 0.425858I$ $b = 0.31332 + 1.45728I$	$6.95353 - 4.35155I$	$4.59858 + 5.33139I$
$u = -1.253490 + 0.315421I$ $a = 1.44870 - 0.39303I$ $b = -0.68021 - 1.31927I$	$9.87960 - 1.93798I$	$7.95326 + 1.38361I$
$u = -1.253490 + 0.315421I$ $a = 0.0176087 + 0.0774925I$ $b = -0.46769 + 1.49281I$	$9.87960 - 1.93798I$	$7.95326 + 1.38361I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.253490 - 0.315421I$ $a = 1.44870 + 0.39303I$ $b = -0.68021 + 1.31927I$	$9.87960 + 1.93798I$	$7.95326 - 1.38361I$
$u = -1.253490 - 0.315421I$ $a = 0.0176087 - 0.0774925I$ $b = -0.46769 - 1.49281I$	$9.87960 + 1.93798I$	$7.95326 - 1.38361I$
$u = -0.329380 + 0.607670I$ $a = 1.91830 - 6.31824I$ $b = 0.045154 - 1.052520I$	$1.56112 + 0.76607I$	$-7.12845 - 1.30178I$
$u = -0.329380 + 0.607670I$ $a = -10.62400 - 2.53492I$ $b = 0.061950 + 0.947949I$	$1.56112 + 0.76607I$	$-7.12845 - 1.30178I$
$u = -0.329380 - 0.607670I$ $a = 1.91830 + 6.31824I$ $b = 0.045154 + 1.052520I$	$1.56112 - 0.76607I$	$-7.12845 + 1.30178I$
$u = -0.329380 - 0.607670I$ $a = -10.62400 + 2.53492I$ $b = 0.061950 - 0.947949I$	$1.56112 - 0.76607I$	$-7.12845 + 1.30178I$
$u = -1.213380 + 0.511337I$ $a = 0.867787 - 0.552784I$ $b = -1.143420 + 0.023396I$	$4.97652 - 7.98804I$	$2.75545 + 5.63639I$
$u = -1.213380 + 0.511337I$ $a = -1.49756 + 0.40473I$ $b = 0.58597 + 1.39555I$	$4.97652 - 7.98804I$	$2.75545 + 5.63639I$
$u = -1.213380 - 0.511337I$ $a = 0.867787 + 0.552784I$ $b = -1.143420 - 0.023396I$	$4.97652 + 7.98804I$	$2.75545 - 5.63639I$
$u = -1.213380 - 0.511337I$ $a = -1.49756 - 0.40473I$ $b = 0.58597 - 1.39555I$	$4.97652 + 7.98804I$	$2.75545 - 5.63639I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.165920 + 0.667088I$ $a = -0.577892 - 0.133773I$ $b = 0.515914 - 0.043918I$	$1.51197 - 7.76497I$	$0. + 4.74518I$
$u = -1.165920 + 0.667088I$ $a = 1.47345 - 0.28081I$ $b = -0.273480 - 1.072760I$	$1.51197 - 7.76497I$	$0. + 4.74518I$
$u = -1.165920 - 0.667088I$ $a = -0.577892 + 0.133773I$ $b = 0.515914 + 0.043918I$	$1.51197 + 7.76497I$	$0. - 4.74518I$
$u = -1.165920 - 0.667088I$ $a = 1.47345 + 0.28081I$ $b = -0.273480 + 1.072760I$	$1.51197 + 7.76497I$	$0. - 4.74518I$
$u = 1.239790 + 0.555518I$ $a = -0.267910 + 0.337001I$ $b = -0.38688 - 1.55484I$	$8.15282 + 7.53350I$	$5.04295 - 6.51119I$
$u = 1.239790 + 0.555518I$ $a = 1.85937 + 0.13321I$ $b = -0.76662 + 1.24734I$	$8.15282 + 7.53350I$	$5.04295 - 6.51119I$
$u = 1.239790 - 0.555518I$ $a = -0.267910 - 0.337001I$ $b = -0.38688 + 1.55484I$	$8.15282 - 7.53350I$	$5.04295 + 6.51119I$
$u = 1.239790 - 0.555518I$ $a = 1.85937 - 0.13321I$ $b = -0.76662 - 1.24734I$	$8.15282 - 7.53350I$	$5.04295 + 6.51119I$
$u = 1.205450 + 0.688309I$ $a = 1.094510 + 0.734681I$ $b = -1.193570 - 0.100733I$	$2.60047 + 13.58860I$	$0. - 9.29837I$
$u = 1.205450 + 0.688309I$ $a = -1.77964 - 0.13933I$ $b = 0.65954 - 1.38657I$	$2.60047 + 13.58860I$	$0. - 9.29837I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.205450 - 0.688309I$ $a = 1.094510 - 0.734681I$ $b = -1.193570 + 0.100733I$	$2.60047 - 13.58860I$	$0. + 9.29837I$
$u = 1.205450 - 0.688309I$ $a = -1.77964 + 0.13933I$ $b = 0.65954 + 1.38657I$	$2.60047 - 13.58860I$	$0. + 9.29837I$
$u = 0.413714$ $a = 2.80478 + 2.11582I$ $b = -0.209348 - 1.063710I$	4.17299	7.72600
$u = 0.413714$ $a = 2.80478 - 2.11582I$ $b = -0.209348 + 1.063710I$	4.17299	7.72600

III. $\boldsymbol{I_3^u = \langle b-1,\ -2u^5+4u^3+2u^2+2a-4u+1,\ u^6+u^5-u^4-2u^3+u+1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u^5+\frac{15}{4}u^4-4u^3-8u^2+4u+2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^6 - 3u^5 + 5u^4 - 4u^3 + 2u^2 - u + 1$
c_2, c_7	$u^6 + u^5 - u^4 - 2u^3 + u + 1$
c_3, c_4	$u^6 - u^5 - u^4 + 2u^3 - u + 1$
c_5	$64(64u^6 - 96u^5 + 80u^4 - 32u^3 + 8u^2 - 2u + 1)$
c_6	$64(64u^6 + 96u^5 + 80u^4 + 32u^3 + 8u^2 + 2u + 1)$
c_8, c_9	$(u - 1)^6$
c_{10}	u^6
c_{11}, c_{12}	$(u + 1)^6$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1$
c_2, c_3, c_4 c_7	$y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1$
c_5, c_6	$4096(4096y^6 + 1024y^5 + 1280y^4 + 96y^2 + 12y + 1)$
c_8, c_9, c_{11} c_{12}	$(y-1)^6$
c_{10}	y^6

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.002190 + 0.295542I$ $a = -0.730593 - 0.497010I$ $b = 1.00000$	$0.245672 + 0.924305I$	$-1.78567 + 1.99338I$
$u = 1.002190 - 0.295542I$ $a = -0.730593 + 0.497010I$ $b = 1.00000$	$0.245672 - 0.924305I$	$-1.78567 - 1.99338I$
$u = -0.428243 + 0.664531I$ $a = -2.16103 + 1.45708I$ $b = 1.00000$	$-3.53554 + 0.92430I$	$-0.90787 + 6.83768I$
$u = -0.428243 - 0.664531I$ $a = -2.16103 - 1.45708I$ $b = 1.00000$	$-3.53554 - 0.92430I$	$-0.90787 - 6.83768I$
$u = -1.073950 + 0.558752I$ $a = -1.108380 + 0.558752I$ $b = 1.00000$	$-1.64493 - 5.69302I$	$-3.18146 + 4.26477I$
$u = -1.073950 - 0.558752I$ $a = -1.108380 - 0.558752I$ $b = 1.00000$	$-1.64493 + 5.69302I$	$-3.18146 - 4.26477I$

IV. $\boldsymbol{I_1^v = \langle a,\ 4v^3 + 7v^2 + 3b + 6v + 1,\ 4v^4 + 7v^3 + 2v^2 - v + 1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} 0 \\ -\frac{4}{3}v^3 - \frac{7}{3}v^2 - 2v - \frac{1}{3} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{4}{3}v^3 - \frac{7}{3}v^2 - 2v - \frac{1}{3} \\ -\frac{4}{3}v^3 - \frac{7}{3}v^2 - 2v - \frac{1}{3} \end{pmatrix}$$

$$a_9 = \begin{pmatrix} \frac{4}{3}v^3 + \frac{11}{3}v^2 + \frac{5}{3}v \\ \frac{4}{3}v^3 + \frac{11}{3}v^2 + \frac{5}{3}v - 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -\frac{4}{3}v^3 - \frac{7}{3}v^2 - 2v - \frac{1}{3} \\ -\frac{8}{3}v^3 - 6v^2 - \frac{11}{3}v - \frac{1}{3} \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -\frac{4}{3}v^3 - \frac{7}{3}v^2 - 2v - \frac{1}{3} \\ -4v^3 - 7v^2 - 2v + 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{4}{3}v^3 + \frac{7}{3}v^2 + 3v + \frac{1}{3} \\ 4v^3 + 7v^2 + 2v - 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ \frac{8}{3}v^2 + \frac{10}{3}v + \frac{4}{3} \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{4}{3}v^3 + \frac{7}{3}v^2 + 2v + \frac{1}{3} \\ 4v^3 + 7v^2 + 2v - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4v^3 + \frac{62}{3}v^2 + \frac{67}{3}v - \frac{11}{3}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = -1.112690 + 0.371716I$ $a = 0$ $b = 0.547424 - 0.585652I$	$-2.62503 + 1.39709I$	$-9.45081 - 3.47689I$
$v = -1.112690 - 0.371716I$ $a = 0$ $b = 0.547424 + 0.585652I$	$-2.62503 - 1.39709I$	$-9.45081 + 3.47689I$
$v = 0.237691 + 0.353773I$ $a = 0$ $b = -0.547424 - 1.120870I$	$0.98010 - 7.64338I$	$-0.08044 + 11.43934I$
$v = 0.237691 - 0.353773I$ $a = 0$ $b = -0.547424 + 1.120870I$	$0.98010 + 7.64338I$	$-0.08044 - 11.43934I$

V. $I_2^v = \langle a,\ v^2b + b^2 - 2bv + v^2 + b - v,\ v^3 - 2v^2 + v - 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 0.122561 + 0.744862I$ $a = 0$ $b = 0.498832 + 1.001300I$	$-1.37919 - 2.82812I$	$-3.30760 + 3.35914I$
$v = 0.122561 + 0.744862I$ $a = 0$ $b = -0.713912 + 0.305839I$	$-1.37919 - 2.82812I$	$-3.30760 + 3.35914I$
$v = 0.122561 - 0.744862I$ $a = 0$ $b = 0.498832 - 1.001300I$	$-1.37919 + 2.82812I$	$-3.30760 - 3.35914I$
$v = 0.122561 - 0.744862I$ $a = 0$ $b = -0.713912 - 0.305839I$	$-1.37919 + 2.82812I$	$-3.30760 - 3.35914I$
$v = 1.75488$ $a = 0$ $b = -0.284920 + 1.115140I$	2.75839	-2.38480
$v = 1.75488$ $a = 0$ $b = -0.284920 - 1.115140I$	2.75839	-2.38480

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^{10}(u^6-3u^5+5u^4-4u^3+2u^2-u+1)$ $\cdot((u^{42}+20u^{41}+\cdots+39u+1)^2)(u^{50}+24u^{49}+\cdots-3807u+256)$
c_2	$((u-1)^{10})(u^6+u^5+\cdots+u+1)(u^{42}-4u^{41}+\cdots+7u-1)^2$ $\cdot(u^{50}-4u^{49}+\cdots-129u+16)$
c_3	$u^{10}(u^6-u^5+\cdots-u+1)(u^{42}-u^{41}+\cdots-28u+8)^2$ $\cdot(u^{50}-12u^{48}+\cdots+288u+256)$
c_4	$((u+1)^{10})(u^6-u^5+\cdots-u+1)(u^{42}-4u^{41}+\cdots+7u-1)^2$ $\cdot(u^{50}-4u^{49}+\cdots-129u+16)$
c_5	$4096(u^4+2u^3+3u^2+u+1)(u^6+3u^5+4u^4+2u^3+1)$ $\cdot(64u^6-96u^5+80u^4-32u^3+8u^2-2u+1)$ $\cdot(64u^{50}+160u^{49}+\cdots+14u^2+1)$ $\cdot(u^{84}+2u^{83}+\cdots+581438984u+60886121)$
c_6	$4096(u^4+2u^3+3u^2+u+1)(u^6+3u^5+4u^4+2u^3+1)$ $\cdot(64u^6+96u^5+80u^4+32u^3+8u^2+2u+1)$ $\cdot(64u^{50}+160u^{49}+\cdots+14u^2+1)$ $\cdot(u^{84}+2u^{83}+\cdots+581438984u+60886121)$
c_7	$u^{10}(u^6+u^5+\cdots+u+1)(u^{42}-u^{41}+\cdots-28u+8)^2$ $\cdot(u^{50}-12u^{48}+\cdots+288u+256)$
c_8, c_9	$(u-1)^6(u^4+u^2-u+1)(u^6+u^5+2u^4+2u^3+2u^2+2u+1)$ $\cdot(u^{50}+6u^{49}+\cdots+2u+1)(u^{84}-14u^{83}+\cdots-4u+1)$
c_{10}	$u^6(u^3-u^2+1)^2(u^4+3u^3+\cdots+3u+2)(u^{42}+2u^{41}+\cdots-2u-1)^2$ $\cdot(u^{50}-6u^{49}+\cdots-94208u+16384)$
c_{11}, c_{12}	$(u+1)^6(u^4+u^2+u+1)(u^6-u^5+2u^4-2u^3+2u^2-2u+1)$ $\cdot(u^{50}+6u^{49}+\cdots+2u+1)(u^{84}-14u^{83}+\cdots-4u+1)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^{10})(y^6+y^5+\cdots+3y+1)(y^{42}+8y^{41}+\cdots-999y+1)^2$ $\cdot\,(y^{50}+8y^{49}+\cdots-4265025y+65536)$
c_2, c_4	$(y-1)^{10}(y^6-3y^5+5y^4-4y^3+2y^2-y+1)$ $\cdot\,((y^{42}-20y^{41}+\cdots-39y+1)^2)(y^{50}-24y^{49}+\cdots+3807y+256)$
c_3, c_7	$y^{10}(y^6-3y^5+5y^4-4y^3+2y^2-y+1)$ $\cdot\,(y^{42}-21y^{41}+\cdots-784y+64)^2$ $\cdot\,(y^{50}-24y^{49}+\cdots-971776y+65536)$
c_5, c_6	$16777216(y^4+2y^3+7y^2+5y+1)(y^6-y^5+4y^4-2y^3+8y^2+1)$ $\cdot\,(4096y^6+1024y^5+1280y^4+96y^2+12y+1)$ $\cdot\,(4096y^{50}-31744y^{49}+\cdots+28y+1)$ $\cdot\,(y^{84}-38y^{83}+\cdots-58401168007787376y+3707119730426641)$
c_8, c_9, c_{11} c_{12}	$(y-1)^6(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot\,(y^{50}+22y^{49}+\cdots+50y+1)(y^{84}+54y^{83}+\cdots-60y^2+1)$
c_{10}	$y^6(y^3-y^2+2y-1)^2(y^4-y^3+2y^2+7y+4)$ $\cdot\,(y^{42}-14y^{41}+\cdots+2y+1)^2$ $\cdot\,(y^{50}-14y^{49}+\cdots-3875536896y+268435456)$