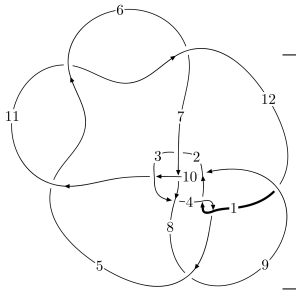
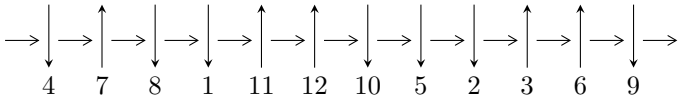
$12a_{1042}$ $(K12a_{1042})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -1.16283 \times 10^{40} u^{55} + 2.14434 \times 10^{41} u^{54} + \cdots + 2.38481 \times 10^{39} b + 1.27043 \times 10^{43}, \\
& 2.48132 \times 10^{40} u^{55} - 4.23380 \times 10^{41} u^{54} + \cdots + 4.76963 \times 10^{39} a - 6.69755 \times 10^{42}, \\
& u^{56} - 18u^{55} + \cdots - 19200u + 1024 \rangle \\
I_2^u = \langle & -3.81235 \times 10^{34} a^9 u^{10} + 3.02772 \times 10^{34} a^8 u^{10} + \cdots - 9.29378 \times 10^{34} a - 1.45475 \times 10^{35}, \\
& - u^{10} a^9 - 5u^{10} a^8 + \cdots - 295a - 110, \\
& u^{11} + 3u^{10} + 8u^9 + 13u^8 + 18u^7 + 20u^6 + 18u^5 + 15u^4 + 9u^3 + 5u^2 + 2u + 1 \rangle \\
I_3^u = \langle & 2.70992 \times 10^{15} u^{39} + 3.29546 \times 10^{16} u^{38} + \cdots + 1.11311 \times 10^{15} b - 7.54465 \times 10^{15}, \\
& 7.54465 \times 10^{15} u^{39} + 1.00790 \times 10^{17} u^{38} + \cdots + 1.11311 \times 10^{15} a + 2.52828 \times 10^{16},\ u^{40} + 13u^{39} + \cdots + 13u +
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 206 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. $\boldsymbol{I_1^u = \langle -1.16 \times 10^{40} u^{55} + 2.14 \times 10^{41} u^{54} + \cdots + 2.38 \times 10^{39} b + 1.27 \times 10^{43},\ 2.48 \times 10^{40} u^{55} - 4.23 \times 10^{41} u^{54} + \cdots + 4.77 \times 10^{39} a - 6.70 \times 10^{42},\ u^{56} - 18 u^{55} + \cdots - 19200 u + 1024 \rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -5.20233 u^{55} + 88.7659 u^{54} + \cdots - 26720.5 u + 1404.21 \\ 4.87600 u^{55} - 89.9163 u^{54} + \cdots + 98480.5 u - 5327.19 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -2.55698 u^{55} + 46.0061 u^{54} + \cdots - 48621.2 u + 2671.75 \\ 1.13506 u^{55} - 21.4817 u^{54} + \cdots + 29846.8 u - 1621.76 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.326331 u^{55} - 1.15037 u^{54} + \cdots + 71760.1 u - 3922.98 \\ 4.87600 u^{55} - 89.9163 u^{54} + \cdots + 98480.5 u - 5327.19 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.799050 u^{55} + 16.4891 u^{54} + \cdots - 50751.2 u + 2785.10 \\ -0.617890 u^{55} + 12.6104 u^{54} + \cdots + 508.672 u - 185.508 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -1.84666 u^{55} + 38.4053 u^{54} + \cdots - 114285. u + 6283.16 \\ -2.63618 u^{55} + 47.6390 u^{54} + \cdots - 48809.0 u + 2622.80 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -9.61807 u^{55} + 164.399 u^{54} + \cdots - 63717.1 u + 3382.01 \\ 6.38454 u^{55} - 121.688 u^{54} + \cdots + 211275. u - 11663.2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -1.22612 u^{55} + 17.1359 u^{54} + \cdots + 17853.1 u - 827.515 \\ 4.93425 u^{55} - 84.9272 u^{54} + \cdots + 24370.0 u - 1255.54 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1.26900 u^{55} - 29.2945 u^{54} + \cdots + 126784. u - 7023.07 \\ 3.92313 u^{55} - 71.4238 u^{54} + \cdots + 60639.9 u - 3214.32 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -24.8470 u^{55} + 419.627 u^{54} + \cdots - 95591.9 u + 4633.30$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{56} - 18u^{55} + \cdots - 19200u + 1024$
c_2, c_{10}	$u^{56} - 8u^{54} + \cdots + 4u + 1$
c_3, c_9	$u^{56} - u^{55} + \cdots + 8u + 1$
c_5, c_6, c_{11}	$u^{56} + 21u^{55} + \cdots + 4096u + 2048$
c_7	$u^{56} - 35u^{55} + \cdots - 272u + 32$
c_8, c_{12}	$u^{56} - u^{55} + \cdots + 12u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{56} + 28y^{55} + \cdots + 9502720y + 1048576$
c_2, c_{10}	$y^{56} - 16y^{55} + \cdots - 34y + 1$
c_3, c_9	$y^{56} - 7y^{55} + \cdots - 18y + 1$
c_5, c_6, c_{11}	$y^{56} - 45y^{55} + \cdots - 2097152y + 4194304$
c_7	$y^{56} - 5y^{55} + \cdots - 9984y + 1024$
c_8, c_{12}	$y^{56} + 33y^{55} + \cdots + 188y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.020630+0.993062I$ $a=\ \ 1.35474-0.80692I$ $b=-0.77337-1.36199I$	$7.50595-4.34710I$	0
$u=-0.020630-0.993062I$ $a=\ \ 1.35474+0.80692I$ $b=-0.77337+1.36199I$	$7.50595+4.34710I$	0
$u=-0.039442+0.978977I$ $a=-1.074070+0.779942I$ $b=\ \ 0.721182+1.082250I$	$1.92174-1.40595I$	0
$u=-0.039442-0.978977I$ $a=-1.074070-0.779942I$ $b=\ \ 0.721182-1.082250I$	$1.92174+1.40595I$	0
$u=-0.108043+1.022290I$ $a=\ \ 0.803024-0.451536I$ $b=-0.374842-0.869712I$	$2.27427+1.77133I$	0
$u=-0.108043-1.022290I$ $a=\ \ 0.803024+0.451536I$ $b=-0.374842+0.869712I$	$2.27427-1.77133I$	0
$u=\ \ 0.308226+0.983667I$ $a=-0.913578-0.497183I$ $b=-0.207475+1.051900I$	$7.64196+4.01513I$	0
$u=\ \ 0.308226-0.983667I$ $a=-0.913578+0.497183I$ $b=-0.207475-1.051900I$	$7.64196-4.01513I$	0
$u=\ \ 0.265198+1.021370I$ $a=\ \ 1.12081-0.94691I$ $b=-1.26438-0.89363I$	$4.37595-0.73115I$	0
$u=\ \ 0.265198-1.021370I$ $a=\ \ 1.12081+0.94691I$ $b=-1.26438+0.89363I$	$4.37595+0.73115I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.014072+1.086320I$ $a=-0.985765+0.029422I$ $b=\ \ 0.018090+1.071270I$	$7.66190+4.32014I$	0
$u=-0.014072-1.086320I$ $a=-0.985765-0.029422I$ $b=\ \ 0.018090-1.071270I$	$7.66190-4.32014I$	0
$u=\ \ 0.865982+0.248427I$ $a=-0.324727-1.231120I$ $b=-0.024636+1.146800I$	$8.42861+2.90333I$	0
$u=\ \ 0.865982-0.248427I$ $a=-0.324727+1.231120I$ $b=-0.024636-1.146800I$	$8.42861-2.90333I$	0
$u=\ \ 1.120500+0.105543I$ $a=-0.772508+0.933095I$ $b=\ \ 0.964078-0.964000I$	$2.4180+14.4623I$	0
$u=\ \ 1.120500-0.105543I$ $a=-0.772508-0.933095I$ $b=\ \ 0.964078+0.964000I$	$2.4180-14.4623I$	0
$u=\ \ 0.636402+0.940838I$ $a=\ \ 0.832826+0.391168I$ $b=-0.161987-1.032490I$	$1.054820+0.344037I$	0
$u=\ \ 0.636402-0.940838I$ $a=\ \ 0.832826-0.391168I$ $b=-0.161987+1.032490I$	$1.054820-0.344037I$	0
$u=-0.707342+0.457791I$ $a=\ \ 0.250539+0.339848I$ $b=\ \ 0.332797+0.125694I$	$-1.73690+0.63011I$	0
$u=-0.707342-0.457791I$ $a=\ \ 0.250539-0.339848I$ $b=\ \ 0.332797-0.125694I$	$-1.73690-0.63011I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.163670 + 0.137451I$ $a = 0.603623 - 0.768644I$ $b = -0.808071 + 0.811482I$	$-3.35204 + 9.77983I$	0
$u = 1.163670 - 0.137451I$ $a = 0.603623 + 0.768644I$ $b = -0.808071 - 0.811482I$	$-3.35204 - 9.77983I$	0
$u = 0.786118 + 0.200802I$ $a = 0.79806 - 1.39804I$ $b = -0.908100 + 0.938770I$	$3.66238 + 7.09364I$	0
$u = 0.786118 - 0.200802I$ $a = 0.79806 + 1.39804I$ $b = -0.908100 - 0.938770I$	$3.66238 - 7.09364I$	0
$u = 0.508543 + 1.110890I$ $a = -1.41993 + 0.31079I$ $b = 1.06734 + 1.41934I$	$0.83845 - 6.82264I$	0
$u = 0.508543 - 1.110890I$ $a = -1.41993 - 0.31079I$ $b = 1.06734 - 1.41934I$	$0.83845 + 6.82264I$	0
$u = 1.197390 + 0.249700I$ $a = -0.296015 + 0.680603I$ $b = 0.524393 - 0.741036I$	$-1.42857 + 4.12269I$	0
$u = 1.197390 - 0.249700I$ $a = -0.296015 - 0.680603I$ $b = 0.524393 + 0.741036I$	$-1.42857 - 4.12269I$	0
$u = -0.731646 + 0.982650I$ $a = 0.071450 - 0.268151I$ $b = -0.211222 - 0.266402I$	$-0.20428 + 4.86627I$	0
$u = -0.731646 - 0.982650I$ $a = 0.071450 + 0.268151I$ $b = -0.211222 + 0.266402I$	$-0.20428 - 4.86627I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.669015 + 1.080040I$ $a = -0.911259 - 0.400202I$ $b = 0.177414 + 1.251930I$	$1.76632 - 5.80202I$	0
$u = 0.669015 - 1.080040I$ $a = -0.911259 + 0.400202I$ $b = 0.177414 - 1.251930I$	$1.76632 + 5.80202I$	0
$u = 0.625036 + 0.353244I$ $a = -0.54480 + 1.54547I$ $b = 0.886448 - 0.773523I$	$-1.39205 + 2.34242I$	0
$u = 0.625036 - 0.353244I$ $a = -0.54480 - 1.54547I$ $b = 0.886448 + 0.773523I$	$-1.39205 - 2.34242I$	0
$u = 0.505060 + 1.184110I$ $a = 1.35790 - 0.41395I$ $b = -1.17598 - 1.39883I$	$6.61152 - 11.89410I$	0
$u = 0.505060 - 1.184110I$ $a = 1.35790 + 0.41395I$ $b = -1.17598 + 1.39883I$	$6.61152 + 11.89410I$	0
$u = 0.182497 + 1.304990I$ $a = 0.644331 - 0.308225I$ $b = -0.519818 - 0.784595I$	$5.19823 - 0.38486I$	0
$u = 0.182497 - 1.304990I$ $a = 0.644331 + 0.308225I$ $b = -0.519818 + 0.784595I$	$5.19823 + 0.38486I$	0
$u = 0.355367 + 1.286890I$ $a = -1.096520 + 0.095012I$ $b = 0.51194 + 1.37734I$	$13.11000 - 1.19025I$	0
$u = 0.355367 - 1.286890I$ $a = -1.096520 - 0.095012I$ $b = 0.51194 - 1.37734I$	$13.11000 + 1.19025I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.598285 + 1.230550I$ $a = 1.107960 + 0.185777I$ $b = -0.43427 - 1.47455I$	$11.31360 - 8.41411I$	0
$u = 0.598285 - 1.230550I$ $a = 1.107960 - 0.185777I$ $b = -0.43427 + 1.47455I$	$11.31360 + 8.41411I$	0
$u = 0.58111 + 1.32533I$ $a = -1.200120 + 0.346172I$ $b = 1.15620 + 1.38939I$	$6.2353 - 20.4547I$	0
$u = 0.58111 - 1.32533I$ $a = -1.200120 - 0.346172I$ $b = 1.15620 - 1.38939I$	$6.2353 + 20.4547I$	0
$u = 0.62767 + 1.30970I$ $a = -0.994170 + 0.135205I$ $b = 0.80109 + 1.21720I$	$2.00380 - 10.50370I$	0
$u = 0.62767 - 1.30970I$ $a = -0.994170 - 0.135205I$ $b = 0.80109 - 1.21720I$	$2.00380 + 10.50370I$	0
$u = 0.59880 + 1.32640I$ $a = 1.086980 - 0.284336I$ $b = -1.02803 - 1.27151I$	$0.3961 - 15.9494I$	0
$u = 0.59880 - 1.32640I$ $a = 1.086980 + 0.284336I$ $b = -1.02803 + 1.27151I$	$0.3961 + 15.9494I$	0
$u = 0.22066 + 1.55593I$ $a = -0.375610 - 0.024297I$ $b = 0.045077 + 0.589783I$	$2.64603 + 4.04647I$	0
$u = 0.22066 - 1.55593I$ $a = -0.375610 + 0.024297I$ $b = 0.045077 - 0.589783I$	$2.64603 - 4.04647I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.38904 + 1.53423I$ $a = 0.396798 + 0.277446I$ $b = 0.271294 - 0.716716I$	$7.74841 + 8.71344I$	0
$u = 0.38904 - 1.53423I$ $a = 0.396798 - 0.277446I$ $b = 0.271294 + 0.716716I$	$7.74841 - 8.71344I$	0
$u = 0.257267 + 0.289166I$ $a = 1.44997 + 0.86456I$ $b = -0.123028 - 0.641707I$	$1.02800 + 1.00373I$	$4.20772 - 2.96757I$
$u = 0.257267 - 0.289166I$ $a = 1.44997 - 0.86456I$ $b = -0.123028 + 0.641707I$	$1.02800 - 1.00373I$	$4.20772 + 2.96757I$
$u = -1.84068 + 0.56528I$ $a = 0.0300490 - 0.0308640I$ $b = 0.0378637 - 0.0737969I$	$-3.96631 + 2.95414I$	0
$u = -1.84068 - 0.56528I$ $a = 0.0300490 + 0.0308640I$ $b = 0.0378637 + 0.0737969I$	$-3.96631 - 2.95414I$	0

II. $\boldsymbol{I_2^u = \langle -3.81\times 10^{34}a^9u^{10} + 3.03\times 10^{34}a^8u^{10} + \cdots - 9.29\times 10^{34}a - 1.45\times 10^{35},\ -u^{10}a^9 - 5u^{10}a^8 + \cdots - 295a - 110,\ u^{11} + 3u^{10} + \cdots + 2u + 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u \\ u^3+u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} a \\ 0.907182a^9u^{10} - 0.720474a^8u^{10} + \cdots + 2.21154a + 3.46170 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.492257a^9u^{10} + 0.00342511a^8u^{10} + \cdots + 1.48128a - 0.271791 \\ -4.10347a^9u^{10} + 2.09816a^8u^{10} + \cdots + 2.51299a + 1.85463 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.907182a^9u^{10} - 0.720474a^8u^{10} + \cdots + 3.21154a + 3.46170 \\ 0.907182a^9u^{10} - 0.720474a^8u^{10} + \cdots + 2.21154a + 3.46170 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 5.07518a^9u^{10} + 1.03594a^8u^{10} + \cdots - 5.93466a + 1.08613 \\ 3.75966a^9u^{10} + 0.538146a^8u^{10} + \cdots - 2.76372a - 0.0156369 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1.84368a^9u^{10} - 0.176828a^8u^{10} + \cdots - 7.34564a - 5.54919 \\ 3.36159a^9u^{10} - 0.793945a^8u^{10} + \cdots - 1.68096a - 0.279916 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1.78885a^9u^{10} - 1.21260a^8u^{10} + \cdots + 2.00706a + 4.05887 \\ -0.457991a^9u^{10} + 0.204668a^8u^{10} + \cdots - 2.09454a + 0.327920 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} a^2u \\ 1.80869a^9u^{10} + 0.558889a^8u^{10} + \cdots + 0.709045a - 0.353266 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 2.93332a^9u^{10} - 1.13790a^8u^{10} + \cdots - 1.40440a + 2.91248 \\ 3.28932a^9u^{10} - 0.643942a^8u^{10} + \cdots + 0.763603a + 2.90564 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -6.21162a^9u^{10} + 5.41134a^8u^{10} + \cdots + 9.56003a - 2.29340$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$(u^{11}+3u^{10}+\cdots+2u+1)^{10}$
c_2, c_{10}	$u^{110}+3u^{109}+\cdots-72u+1$
c_3, c_9	$u^{110}+u^{109}+\cdots-288500u-72659$
c_5, c_6, c_{11}	$(u^5-u^4-2u^3+u^2+u+1)^{22}$
c_7	$(u^{11}+5u^{10}+12u^9+15u^8+8u^7-4u^6-8u^5-3u^4+3u^3+3u^2-1)^{10}$
c_8, c_{12}	$u^{110}-u^{109}+\cdots+26520u-547$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y^{11} + 7y^{10} + \cdots - 6y - 1)^{10}$
c_2, c_{10}	$y^{110} + 35y^{109} + \cdots - 7528y + 1$
c_3, c_9	$y^{110} - 25y^{109} + \cdots + 621106657840y + 5279330281$
c_5, c_6, c_{11}	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)^{22}$
c_7	$(y^{11} - y^{10} + \cdots + 6y - 1)^{10}$
c_8, c_{12}	$y^{110} - 21y^{109} + \cdots - 39626548y + 299209$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.253759 + 0.946686I$ $a = -1.214280 + 0.254968I$ $b = 1.406490 - 0.038889I$	$-1.17818 - 3.68571I$	$-3.92092 + 4.58213I$
$u = 0.253759 + 0.946686I$ $a = 1.00777 - 0.99699I$ $b = -1.66471 - 0.72815I$	$4.36528 - 0.81546I$	$0.30828 + 5.51419I$
$u = 0.253759 + 0.946686I$ $a = -0.33322 + 1.39637I$ $b = 0.549509 + 1.084840I$	$-1.17818 - 3.68571I$	$-3.92092 + 4.58213I$
$u = 0.253759 + 0.946686I$ $a = -0.278887 + 0.480235I$ $b = 2.56562 - 0.97418I$	$4.36528 - 9.61712I$	$0.30828 + 12.51136I$
$u = 0.253759 + 0.946686I$ $a = 0.127850 - 0.489290I$ $b = 0.68642 - 1.90567I$	$0.89380 - 5.21629I$	$-2.95489 + 9.01278I$
$u = 0.253759 + 0.946686I$ $a = 0.405552 - 0.162342I$ $b = -1.86813 + 0.97949I$	$-1.17818 - 6.74687I$	$-3.92092 + 13.44342I$
$u = 0.253759 + 0.946686I$ $a = 1.15735 - 1.44823I$ $b = -1.199570 - 0.701047I$	$4.36528 - 0.81546I$	$0.30828 + 5.51419I$
$u = 0.253759 + 0.946686I$ $a = 1.69672 + 1.17989I$ $b = -0.495647 + 0.003128I$	$0.89380 - 5.21629I$	$-2.95489 + 9.01278I$
$u = 0.253759 + 0.946686I$ $a = -0.47180 - 2.09980I$ $b = -0.256599 - 0.342734I$	$-1.17818 - 6.74687I$	$-3.92092 + 13.44342I$
$u = 0.253759 + 0.946686I$ $a = 0.28232 + 2.78578I$ $b = 0.525402 + 0.142154I$	$4.36528 - 9.61712I$	$0.30828 + 12.51136I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.253759 - 0.946686I$ $a = -1.214280 - 0.254968I$ $b = 1.406490 + 0.038889I$	$-1.17818 + 3.68571I$	$-3.92092 - 4.58213I$
$u = 0.253759 - 0.946686I$ $a = 1.00777 + 0.99699I$ $b = -1.66471 + 0.72815I$	$4.36528 + 0.81546I$	$0.30828 - 5.51419I$
$u = 0.253759 - 0.946686I$ $a = -0.33322 - 1.39637I$ $b = 0.549509 - 1.084840I$	$-1.17818 + 3.68571I$	$-3.92092 - 4.58213I$
$u = 0.253759 - 0.946686I$ $a = -0.278887 - 0.480235I$ $b = 2.56562 + 0.97418I$	$4.36528 + 9.61712I$	$0.30828 - 12.51136I$
$u = 0.253759 - 0.946686I$ $a = 0.127850 + 0.489290I$ $b = 0.68642 + 1.90567I$	$0.89380 + 5.21629I$	$-2.95489 - 9.01278I$
$u = 0.253759 - 0.946686I$ $a = 0.405552 + 0.162342I$ $b = -1.86813 - 0.97949I$	$-1.17818 + 6.74687I$	$-3.92092 - 13.44342I$
$u = 0.253759 - 0.946686I$ $a = 1.15735 + 1.44823I$ $b = -1.199570 + 0.701047I$	$4.36528 + 0.81546I$	$0.30828 - 5.51419I$
$u = 0.253759 - 0.946686I$ $a = 1.69672 - 1.17989I$ $b = -0.495647 - 0.003128I$	$0.89380 + 5.21629I$	$-2.95489 - 9.01278I$
$u = 0.253759 - 0.946686I$ $a = -0.47180 + 2.09980I$ $b = -0.256599 + 0.342734I$	$-1.17818 + 6.74687I$	$-3.92092 - 13.44342I$
$u = 0.253759 - 0.946686I$ $a = 0.28232 - 2.78578I$ $b = 0.525402 - 0.142154I$	$4.36528 + 9.61712I$	$0.30828 - 12.51136I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.10821$ $a=\ \ 1.06944$ $b=-1.43122$	-1.62261	-14.7800
$u=-1.10821$ $a=\ \ 0.780503+0.437504I$ $b=-0.756153-0.220972I$	$-3.69459-1.53058I$	$-15.7462+4.4306I$
$u=-1.10821$ $a=\ \ 0.780503-0.437504I$ $b=-0.756153+0.220972I$	$-3.69459+1.53058I$	$-15.7462-4.4306I$
$u=-1.10821$ $a=-0.696511+0.898164I$ $b=\ \ 0.625664-0.610265I$	$1.84887+4.40083I$	$-11.51702-3.49859I$
$u=-1.10821$ $a=-0.696511-0.898164I$ $b=\ \ 0.625664+0.610265I$	$1.84887-4.40083I$	$-11.51702+3.49859I$
$u=-1.10821$ $a=\ \ 0.564570+0.550675I$ $b=-0.771883-0.995357I$	$1.84887-4.40083I$	$-11.51702+3.49859I$
$u=-1.10821$ $a=\ \ 0.564570-0.550675I$ $b=-0.771883+0.995357I$	$1.84887+4.40083I$	$-11.51702-3.49859I$
$u=-1.10821$ $a=-0.682318+0.199395I$ $b=\ \ 0.864963-0.484847I$	$-3.69459+1.53058I$	$-15.7462-4.4306I$
$u=-1.10821$ $a=-0.682318-0.199395I$ $b=\ \ 0.864963+0.484847I$	$-3.69459-1.53058I$	$-15.7462+4.4306I$
$u=-1.10821$ $a=-1.29147$ $b=\ \ 1.18517$	-1.62261	-14.7800

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.572881+0.536287I$ $a=\ \ 0.516653+0.935169I$ $b=-0.0210317-0.0200933I$	$-1.73984+0.71721I$	$-7.12070-0.63295I$
$u=-0.572881+0.536287I$ $a=\ \ 0.845678+0.745623I$ $b=-1.32964+0.56677I$	$0.33215+2.24779I$	$-6.15467-5.06360I$
$u=-0.572881+0.536287I$ $a=-1.111270-0.406619I$ $b=\ \ 0.472061-1.079550I$	$-1.73984+3.77836I$	$-7.12070-9.49424I$
$u=-0.572881+0.536287I$ $a=-0.588376+0.498556I$ $b=-1.04070-0.97694I$	$3.80363-2.15305I$	$-2.89150-1.56501I$
$u=-0.572881+0.536287I$ $a=\ \ 1.348260+0.235231I$ $b=-0.31739+1.60636I$	$3.80363+6.64862I$	$-2.89150-8.56218I$
$u=-0.572881+0.536287I$ $a=\ \ 1.37932-0.59320I$ $b=-0.854688+0.363014I$	$-1.73984+3.77836I$	$-7.12070-9.49424I$
$u=-0.572881+0.536287I$ $a=-0.11737-1.81518I$ $b=-0.069700+0.601152I$	$3.80363-2.15305I$	$-2.89150-1.56501I$
$u=-0.572881+0.536287I$ $a=-1.73057-0.63068I$ $b=\ \ 0.884341-0.026373I$	$0.33215+2.24779I$	$-6.15467-5.06360I$
$u=-0.572881+0.536287I$ $a=-0.0020671-0.0370092I$ $b=\ \ 0.797500+0.258666I$	$-1.73984+0.71721I$	$-7.12070-0.63295I$
$u=-0.572881+0.536287I$ $a=-1.69422+1.21800I$ $b=\ \ 0.898542-0.588293I$	$3.80363+6.64862I$	$-2.89150-8.56218I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.572881-0.536287I$ $a=\ \ 0.516653-0.935169I$ $b=-0.0210317+0.0200933I$	$-1.73984-0.71721I$	$-7.12070+0.63295I$
$u=-0.572881-0.536287I$ $a=\ \ 0.845678-0.745623I$ $b=-1.32964-0.56677I$	$0.33215-2.24779I$	$-6.15467+5.06360I$
$u=-0.572881-0.536287I$ $a=-1.111270+0.406619I$ $b=\ \ 0.472061+1.079550I$	$-1.73984-3.77836I$	$-7.12070+9.49424I$
$u=-0.572881-0.536287I$ $a=-0.588376-0.498556I$ $b=-1.04070+0.97694I$	$3.80363+2.15305I$	$-2.89150+1.56501I$
$u=-0.572881-0.536287I$ $a=\ \ 1.348260-0.235231I$ $b=-0.31739-1.60636I$	$3.80363-6.64862I$	$-2.89150+8.56218I$
$u=-0.572881-0.536287I$ $a=\ \ 1.37932+0.59320I$ $b=-0.854688-0.363014I$	$-1.73984-3.77836I$	$-7.12070+9.49424I$
$u=-0.572881-0.536287I$ $a=-0.11737+1.81518I$ $b=-0.069700-0.601152I$	$3.80363+2.15305I$	$-2.89150+1.56501I$
$u=-0.572881-0.536287I$ $a=-1.73057+0.63068I$ $b=\ \ 0.884341+0.026373I$	$0.33215-2.24779I$	$-6.15467+5.06360I$
$u=-0.572881-0.536287I$ $a=-0.0020671+0.0370092I$ $b=\ \ 0.797500-0.258666I$	$-1.73984-0.71721I$	$-7.12070+0.63295I$
$u=-0.572881-0.536287I$ $a=-1.69422-1.21800I$ $b=\ \ 0.898542+0.588293I$	$3.80363-6.64862I$	$-2.89150+8.56218I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.290349+1.272230I$ $a=\ \ 1.016900+0.255279I$ $b=-0.375763+0.413196I$	$3.31489+3.47016I$	$4.35571-1.79686I$
$u=-0.290349+1.272230I$ $a=\ \ 0.454399+0.971570I$ $b=-0.805599+0.755681I$	$5.38688+5.00074I$	$5.32173-6.22751I$
$u=-0.290349+1.272230I$ $a=-0.850343-0.184422I$ $b=\ \ 1.53517-1.63532I$	$8.85836+9.40157I$	$8.58490-9.72610I$
$u=-0.290349+1.272230I$ $a=-0.701934-0.473022I$ $b=\ \ 1.368000-0.296006I$	$5.38688+5.00074I$	$5.32173-6.22751I$
$u=-0.290349+1.272230I$ $a=\ \ 0.725998+0.291082I$ $b=-1.32280+1.23898I$	$3.31489+6.53132I$	$4.35571-10.65816I$
$u=-0.290349+1.272230I$ $a=-1.335750+0.013724I$ $b=-0.014845-0.550001I$	$8.85836+0.59990I$	$8.58490-2.72893I$
$u=-0.290349+1.272230I$ $a=-1.151200-0.777020I$ $b=\ \ 0.581117-0.839123I$	$3.31489+6.53132I$	$4.35571-10.65816I$
$u=-0.290349+1.272230I$ $a=-0.372772-0.210283I$ $b=\ \ 0.620030-1.219620I$	$3.31489+3.47016I$	$4.35571-1.79686I$
$u=-0.290349+1.272230I$ $a=\ \ 0.408379-0.104869I$ $b=-0.37038+1.70337I$	$8.85836+0.59990I$	$8.58490-2.72893I$
$u=-0.290349+1.272230I$ $a=\ \ 1.48352+0.86811I$ $b=-0.481525+1.028290I$	$8.85836+9.40157I$	$8.58490-9.72610I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.290349-1.272230I$ $a=\ \ 1.016900-0.255279I$ $b=-0.375763-0.413196I$	$3.31489-3.47016I$	$4.35571+1.79686I$
$u=-0.290349-1.272230I$ $a=\ \ 0.454399-0.971570I$ $b=-0.805599-0.755681I$	$5.38688-5.00074I$	$5.32173+6.22751I$
$u=-0.290349-1.272230I$ $a=-0.850343+0.184422I$ $b=\ \ 1.53517+1.63532I$	$8.85836-9.40157I$	$8.58490+9.72610I$
$u=-0.290349-1.272230I$ $a=-0.701934+0.473022I$ $b=\ \ 1.368000+0.296006I$	$5.38688-5.00074I$	$5.32173+6.22751I$
$u=-0.290349-1.272230I$ $a=\ \ 0.725998-0.291082I$ $b=-1.32280-1.23898I$	$3.31489-6.53132I$	$4.35571+10.65816I$
$u=-0.290349-1.272230I$ $a=-1.335750-0.013724I$ $b=-0.014845+0.550001I$	$8.85836-0.59990I$	$8.58490+2.72893I$
$u=-0.290349-1.272230I$ $a=-1.151200+0.777020I$ $b=\ \ 0.581117+0.839123I$	$3.31489-6.53132I$	$4.35571+10.65816I$
$u=-0.290349-1.272230I$ $a=-0.372772+0.210283I$ $b=\ \ 0.620030+1.219620I$	$3.31489-3.47016I$	$4.35571+1.79686I$
$u=-0.290349-1.272230I$ $a=\ \ 0.408379+0.104869I$ $b=-0.37038-1.70337I$	$8.85836-0.59990I$	$8.58490+2.72893I$
$u=-0.290349-1.272230I$ $a=\ \ 1.48352-0.86811I$ $b=-0.481525-1.028290I$	$8.85836-9.40157I$	$8.58490+9.72610I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.234018 + 0.605151I$ $a = -0.699171 + 0.624862I$ $b = 1.199470 - 0.525523I$	$-2.11873 + 1.17383I$	$-6.95250 + 4.51398I$
$u = 0.234018 + 0.605151I$ $a = -0.252370 + 0.599876I$ $b = -0.79612 + 1.45703I$	$-0.04675 + 2.70441I$	$-5.98648 + 0.08333I$
$u = 0.234018 + 0.605151I$ $a = 0.04344 - 1.46541I$ $b = -1.62502 - 0.02887I$	$3.42473 - 1.69642I$	$-2.72331 + 3.58191I$
$u = 0.234018 + 0.605151I$ $a = 0.14061 - 1.54546I$ $b = -0.442259 - 1.327510I$	$-2.11873 + 4.23499I$	$-6.95250 - 4.34732I$
$u = 0.234018 + 0.605151I$ $a = -0.29345 + 1.76062I$ $b = 0.94330 + 1.69305I$	$3.42473 + 7.10524I$	$-2.72331 - 3.41526I$
$u = 0.234018 + 0.605151I$ $a = 0.08866 + 2.01639I$ $b = 0.541754 + 0.276875I$	$-2.11873 + 1.17383I$	$-6.95250 + 4.51398I$
$u = 0.234018 + 0.605151I$ $a = 2.15416 + 0.10221I$ $b = -0.968141 + 0.276574I$	$-2.11873 + 4.23499I$	$-6.95250 - 4.34732I$
$u = 0.234018 + 0.605151I$ $a = 0.94485 - 2.31993I$ $b = -0.896960 + 0.316647I$	$3.42473 - 1.69642I$	$-2.72331 + 3.58191I$
$u = 0.234018 + 0.605151I$ $a = -1.65193 - 1.95440I$ $b = 0.422074 + 0.012340I$	$-0.04675 + 2.70441I$	$-5.98648 + 0.08333I$
$u = 0.234018 + 0.605151I$ $a = -2.95816 + 0.41484I$ $b = 1.134110 - 0.234436I$	$3.42473 + 7.10524I$	$-2.72331 - 3.41526I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.234018 - 0.605151I$ $a = -0.699171 - 0.624862I$ $b = 1.199470 + 0.525523I$	$-2.11873 - 1.17383I$	$-6.95250 - 4.51398I$
$u = 0.234018 - 0.605151I$ $a = -0.252370 - 0.599876I$ $b = -0.79612 - 1.45703I$	$-0.04675 - 2.70441I$	$-5.98648 - 0.08333I$
$u = 0.234018 - 0.605151I$ $a = 0.04344 + 1.46541I$ $b = -1.62502 + 0.02887I$	$3.42473 + 1.69642I$	$-2.72331 - 3.58191I$
$u = 0.234018 - 0.605151I$ $a = 0.14061 + 1.54546I$ $b = -0.442259 + 1.327510I$	$-2.11873 - 4.23499I$	$-6.95250 + 4.34732I$
$u = 0.234018 - 0.605151I$ $a = -0.29345 - 1.76062I$ $b = 0.94330 - 1.69305I$	$3.42473 - 7.10524I$	$-2.72331 + 3.41526I$
$u = 0.234018 - 0.605151I$ $a = 0.08866 - 2.01639I$ $b = 0.541754 - 0.276875I$	$-2.11873 - 1.17383I$	$-6.95250 - 4.51398I$
$u = 0.234018 - 0.605151I$ $a = 2.15416 - 0.10221I$ $b = -0.968141 - 0.276574I$	$-2.11873 - 4.23499I$	$-6.95250 + 4.34732I$
$u = 0.234018 - 0.605151I$ $a = 0.94485 + 2.31993I$ $b = -0.896960 - 0.316647I$	$3.42473 + 1.69642I$	$-2.72331 - 3.58191I$
$u = 0.234018 - 0.605151I$ $a = -1.65193 + 1.95440I$ $b = 0.422074 - 0.012340I$	$-0.04675 - 2.70441I$	$-5.98648 - 0.08333I$
$u = 0.234018 - 0.605151I$ $a = -2.95816 - 0.41484I$ $b = 1.134110 + 0.234436I$	$3.42473 - 7.10524I$	$-2.72331 + 3.41526I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.57044+1.34258I$ $a=-0.785939-0.641440I$ $b=\ \ 1.115300-0.438195I$	$2.51638+5.92443I$	$-5.68931-10.02355I$
$u=-0.57044+1.34258I$ $a=\ \ 0.946446+0.248467I$ $b=-1.056870+0.809620I$	$0.44440+7.45501I$	$-6.6553-14.4542I$
$u=-0.57044+1.34258I$ $a=\ \ 0.941032+0.405944I$ $b=-0.80426+1.48503I$	$5.98786+10.32530I$	$-2.42614-13.52213I$
$u=-0.57044+1.34258I$ $a=-0.794135-0.449777I$ $b=\ \ 0.87348-1.12895I$	$0.44440+7.45501I$	$-6.6553-14.4542I$
$u=-0.57044+1.34258I$ $a=-1.152550-0.109335I$ $b=\ \ 1.08182-1.03185I$	$5.98786+10.32530I$	$-2.42614-13.52213I$
$u=-0.57044+1.34258I$ $a=\ \ 0.575454+0.586211I$ $b=-1.30952+0.68928I$	$2.51638+5.92443I$	$-5.68931-10.02355I$
$u=-0.57044+1.34258I$ $a=\ \ 0.568427+0.363833I$ $b=-0.457563+0.652864I$	$0.44440+4.39385I$	$-6.65534-5.59290I$
$u=-0.57044+1.34258I$ $a=\ \ 0.513603-0.308604I$ $b=-0.387048+0.710839I$	$5.98786+1.52359I$	$-2.42614-6.52496I$
$u=-0.57044+1.34258I$ $a=-0.552249-0.053645I$ $b=-0.121346-0.865594I$	$5.98786+1.52359I$	$-2.42614-6.52496I$
$u=-0.57044+1.34258I$ $a=-0.534574-0.113677I$ $b=\ \ 0.812729-0.555614I$	$0.44440+4.39385I$	$-6.65534-5.59290I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.57044-1.34258I$ $a=-0.785939+0.641440I$ $b=\ \ 1.115300+0.438195I$	$2.51638-5.92443I$	$-5.68931+10.02355I$
$u=-0.57044-1.34258I$ $a=\ \ 0.946446-0.248467I$ $b=-1.056870-0.809620I$	$0.44440-7.45501I$	$-6.6553+14.4542I$
$u=-0.57044-1.34258I$ $a=\ \ 0.941032-0.405944I$ $b=-0.80426-1.48503I$	$5.98786-10.32530I$	$-2.42614+13.52213I$
$u=-0.57044-1.34258I$ $a=-0.794135+0.449777I$ $b=\ \ 0.87348+1.12895I$	$0.44440-7.45501I$	$-6.6553+14.4542I$
$u=-0.57044-1.34258I$ $a=-1.152550+0.109335I$ $b=\ \ 1.08182+1.03185I$	$5.98786-10.32530I$	$-2.42614+13.52213I$
$u=-0.57044-1.34258I$ $a=\ \ 0.575454-0.586211I$ $b=-1.30952-0.68928I$	$2.51638-5.92443I$	$-5.68931+10.02355I$
$u=-0.57044-1.34258I$ $a=\ \ 0.568427-0.363833I$ $b=-0.457563-0.652864I$	$0.44440-4.39385I$	$-6.65534+5.59290I$
$u=-0.57044-1.34258I$ $a=\ \ 0.513603+0.308604I$ $b=-0.387048-0.710839I$	$5.98786-1.52359I$	$-2.42614+6.52496I$
$u=-0.57044-1.34258I$ $a=-0.552249+0.053645I$ $b=-0.121346+0.865594I$	$5.98786-1.52359I$	$-2.42614+6.52496I$
$u=-0.57044-1.34258I$ $a=-0.534574+0.113677I$ $b=\ \ 0.812729+0.555614I$	$0.44440-4.39385I$	$-6.65534+5.59290I$

III. $I_3^u =$
$\langle 2.71\times10^{15}u^{39}+3.30\times10^{16}u^{38}+\cdots+1.11\times10^{15}b-7.54\times10^{15},\ 7.54\times10^{15}u^{39}+1.01\times10^{17}u^{38}+\cdots+1.11\times10^{15}a+2.53\times10^{16},\ u^{40}+13u^{39}+\cdots+13u+1\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-u\\u^3+u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-6.77798u^{39}-90.5483u^{38}+\cdots-212.235u-22.7137\\-2.43455u^{39}-29.6058u^{38}+\cdots+65.4001u+6.77798\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-10.2563u^{39}-134.947u^{38}+\cdots-192.304u-20.6290\\-1.84869u^{39}-22.1837u^{38}+\cdots+52.6431u+5.51276\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-9.21253u^{39}-120.154u^{38}+\cdots-146.835u-15.9357\\-2.43455u^{39}-29.6058u^{38}+\cdots+65.4001u+6.77798\end{pmatrix}$$
$$a_3 = \begin{pmatrix}3.74877u^{39}+42.7879u^{38}+\cdots+38.4646u+7.38528\\-3.49534u^{39}-47.8903u^{38}+\cdots-80.5441u-7.24412\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-0.531367u^{39}-10.4633u^{38}+\cdots-324.781u-29.9644\\0.254134u^{39}-0.214753u^{38}+\cdots-26.7084u-0.649031\end{pmatrix}$$
$$a_7 = \begin{pmatrix}8.31931u^{39}+104.042u^{38}+\cdots+177.914u+13.1129\\-4.40001u^{39}-59.1809u^{38}+\cdots-87.4335u-6.88478\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-7.95615u^{39}-103.494u^{38}+\cdots-209.573u-21.6492\\-0.0636530u^{39}-0.0518015u^{38}+\cdots+82.7808u+7.95615\end{pmatrix}$$
$$a_6 = \begin{pmatrix}3.73312u^{39}+51.5946u^{38}+\cdots+156.225u+11.4603\\-0.745671u^{39}-9.45596u^{38}+\cdots-33.4183u-2.55272\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= \frac{49209887514998933}{1113111866454425}u^{39}+\frac{663479598064214632}{1113111866454425}u^{38}+\cdots+\frac{1082356982452410238}{1113111866454425}u+\frac{83103687073235062}{1113111866454425}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{40} - 13u^{39} + \cdots - 13u + 1$
c_2, c_{10}	$u^{40} + 11u^{38} + \cdots - 5u - 1$
c_3, c_9	$u^{40} - u^{39} + \cdots + 13u - 7$
c_4	$u^{40} + 13u^{39} + \cdots + 13u + 1$
c_5, c_6	$u^{40} + 2u^{39} + \cdots - 3u + 1$
c_7	$u^{40} - 22u^{39} + \cdots - 7u + 1$
c_8, c_{12}	$u^{40} - 3u^{39} + \cdots - 7u - 1$
c_{11}	$u^{40} - 2u^{39} + \cdots + 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{40} + 21y^{39} + \cdots + y + 1$
c_2, c_{10}	$y^{40} + 22y^{39} + \cdots - 5y + 1$
c_3, c_9	$y^{40} - 13y^{39} + \cdots + 223y + 49$
c_5, c_6, c_{11}	$y^{40} - 40y^{39} + \cdots + y + 1$
c_7	$y^{40} - 4y^{39} + \cdots - 17y + 1$
c_8, c_{12}	$y^{40} - 13y^{39} + \cdots + 5y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.302193+0.961756I$ $a=\ \ 1.36527+1.24156I$ $b=-1.60665+0.93787I$	$4.66350+0.68253I$	0
$u=-0.302193-0.961756I$ $a=\ \ 1.36527-1.24156I$ $b=-1.60665-0.93787I$	$4.66350-0.68253I$	0
$u=\ \ 0.179612+1.004620I$ $a=-0.962397-0.715529I$ $b=\ \ 0.545979-1.095360I$	$1.59926-4.62320I$	0
$u=\ \ 0.179612-1.004620I$ $a=-0.962397+0.715529I$ $b=\ \ 0.545979+1.095360I$	$1.59926+4.62320I$	0
$u=-0.958542+0.081933I$ $a=\ \ 0.753873-0.799079I$ $b=-0.657149+0.827718I$	$2.62062+4.54167I$	0
$u=-0.958542-0.081933I$ $a=\ \ 0.753873+0.799079I$ $b=-0.657149-0.827718I$	$2.62062-4.54167I$	0
$u=\ \ 0.475218+0.832257I$ $a=\ \ 0.105588+0.652587I$ $b=-0.492943+0.397997I$	$-1.07028-6.02780I$	0
$u=\ \ 0.475218-0.832257I$ $a=\ \ 0.105588-0.652587I$ $b=-0.492943-0.397997I$	$-1.07028+6.02780I$	0
$u=-1.04794$ $a=\ \ 1.25425$ $b=-1.31438$	-1.05586	0
$u=\ \ 0.198993+0.857079I$ $a=\ \ 0.529987+1.135620I$ $b=-0.867850+0.680220I$	$-1.29856-5.76607I$	$-4.50377+5.05173I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.198993 - 0.857079I$ $a = 0.529987 - 1.135620I$ $b = -0.867850 - 0.680220I$	$-1.29856 + 5.76607I$	$-4.50377 - 5.05173I$
$u = 0.074658 + 0.859654I$ $a = -0.68878 - 1.60477I$ $b = 1.32812 - 0.71192I$	$4.46569 - 8.28143I$	$3.21081 + 5.41950I$
$u = 0.074658 - 0.859654I$ $a = -0.68878 + 1.60477I$ $b = 1.32812 + 0.71192I$	$4.46569 + 8.28143I$	$3.21081 - 5.41950I$
$u = -0.283043 + 0.807141I$ $a = 0.52662 + 1.64564I$ $b = -1.47732 - 0.04073I$	$4.14697 + 1.84028I$	$11.6326 - 8.8001I$
$u = -0.283043 - 0.807141I$ $a = 0.52662 - 1.64564I$ $b = -1.47732 + 0.04073I$	$4.14697 - 1.84028I$	$11.6326 + 8.8001I$
$u = -1.17611$ $a = -0.765486$ $b = 0.900298$	-3.35566	0
$u = 0.129149 + 0.793883I$ $a = 1.202550 + 0.737313I$ $b = -0.430032 + 1.049900I$	$0.81760 + 3.07351I$	$4.23417 - 3.39461I$
$u = 0.129149 - 0.793883I$ $a = 1.202550 - 0.737313I$ $b = -0.430032 - 1.049900I$	$0.81760 - 3.07351I$	$4.23417 + 3.39461I$
$u = -0.058694 + 1.270490I$ $a = -0.112190 - 0.771707I$ $b = 0.987030 - 0.097241I$	$6.17011 + 7.94112I$	0
$u = -0.058694 - 1.270490I$ $a = -0.112190 + 0.771707I$ $b = 0.987030 + 0.097241I$	$6.17011 - 7.94112I$	0

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.528320+1.195220I$ $a=-1.074290-0.258592I$ $b=\ \ 0.87664-1.14739I$	$1.00109+6.32670I$	0
$u=-0.528320-1.195220I$ $a=-1.074290+0.258592I$ $b=\ \ 0.87664+1.14739I$	$1.00109-6.32670I$	0
$u=-0.489235+1.291200I$ $a=\ \ 1.114280+0.317822I$ $b=-0.95552+1.28328I$	$6.72770+9.59494I$	0
$u=-0.489235-1.291200I$ $a=\ \ 1.114280-0.317822I$ $b=-0.95552-1.28328I$	$6.72770-9.59494I$	0
$u=\ \ 0.477512+0.363096I$ $a=\ \ 0.170665-0.915354I$ $b=\ \ 0.413856-0.375125I$	$-2.02197+2.31681I$	$-7.44581-1.97781I$
$u=\ \ 0.477512-0.363096I$ $a=\ \ 0.170665+0.915354I$ $b=\ \ 0.413856+0.375125I$	$-2.02197-2.31681I$	$-7.44581+1.97781I$
$u=-0.372659+0.418740I$ $a=-1.60084-0.62809I$ $b=\ \ 0.859573-0.436271I$	$-2.23378+2.17048I$	$-9.45805-4.37787I$
$u=-0.372659-0.418740I$ $a=-1.60084+0.62809I$ $b=\ \ 0.859573+0.436271I$	$-2.23378-2.17048I$	$-9.45805+4.37787I$
$u=-0.53269+1.34734I$ $a=\ \ 0.688381+0.653576I$ $b=-1.247280+0.579327I$	$3.13515+5.60962I$	0
$u=-0.53269-1.34734I$ $a=\ \ 0.688381-0.653576I$ $b=-1.247280-0.579327I$	$3.13515-5.60962I$	0

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.61009+1.31777I$ $a=-0.717459-0.307067I$ $b=\ \ 0.842360-0.758103I$	$0.65588+6.25816I$	0
$u=-0.61009-1.31777I$ $a=-0.717459+0.307067I$ $b=\ \ 0.842360+0.758103I$	$0.65588-6.25816I$	0
$u=-0.23388+1.45246I$ $a=\ \ 0.352930+0.326684I$ $b=-0.557037+0.436210I$	$1.84795+4.70321I$	0
$u=-0.23388-1.45246I$ $a=\ \ 0.352930-0.326684I$ $b=-0.557037-0.436210I$	$1.84795-4.70321I$	0
$u=-0.48225+1.43734I$ $a=-0.524798+0.095595I$ $b=\ \ 0.115679-0.800413I$	$6.71763+1.26141I$	0
$u=-0.48225-1.43734I$ $a=-0.524798-0.095595I$ $b=\ \ 0.115679+0.800413I$	$6.71763-1.26141I$	0
$u=-0.224887+0.132284I$ $a=-2.28821-2.94764I$ $b=\ \ 0.904514+0.360191I$	$-2.16831-2.11754I$	$-8.35280+6.32544I$
$u=-0.224887-0.132284I$ $a=-2.28821+2.94764I$ $b=\ \ 0.904514-0.360191I$	$-2.16831+2.11754I$	$-8.35280-6.32544I$
$u=-1.84663+0.54098I$ $a=-0.0855638+0.0608668I$ $b=\ \ 0.125077-0.158687I$	$-3.96169+2.98863I$	0
$u=-1.84663-0.54098I$ $a=-0.0855638-0.0608668I$ $b=\ \ 0.125077+0.158687I$	$-3.96169-2.98863I$	0

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^{11}+3u^{10}+\cdots+2u+1)^{10})(u^{40}-13u^{39}+\cdots-13u+1)$ $\cdot(u^{56}-18u^{55}+\cdots-19200u+1024)$
c_2, c_{10}	$(u^{40}+11u^{38}+\cdots-5u-1)(u^{56}-8u^{54}+\cdots+4u+1)$ $\cdot(u^{110}+3u^{109}+\cdots-72u+1)$
c_3, c_9	$(u^{40}-u^{39}+\cdots+13u-7)(u^{56}-u^{55}+\cdots+8u+1)$ $\cdot(u^{110}+u^{109}+\cdots-288500u-72659)$
c_4	$((u^{11}+3u^{10}+\cdots+2u+1)^{10})(u^{40}+13u^{39}+\cdots+13u+1)$ $\cdot(u^{56}-18u^{55}+\cdots-19200u+1024)$
c_5, c_6	$((u^5-u^4-2u^3+u^2+u+1)^{22})(u^{40}+2u^{39}+\cdots-3u+1)$ $\cdot(u^{56}+21u^{55}+\cdots+4096u+2048)$
c_7	$(u^{11}+5u^{10}+12u^9+15u^8+8u^7-4u^6-8u^5-3u^4+3u^3+3u^2-1)^{10}$ $\cdot(u^{40}-22u^{39}+\cdots-7u+1)(u^{56}-35u^{55}+\cdots-272u+32)$
c_8, c_{12}	$(u^{40}-3u^{39}+\cdots-7u-1)(u^{56}-u^{55}+\cdots+12u+1)$ $\cdot(u^{110}-u^{109}+\cdots+26520u-547)$
c_{11}	$((u^5-u^4-2u^3+u^2+u+1)^{22})(u^{40}-2u^{39}+\cdots+3u+1)$ $\cdot(u^{56}+21u^{55}+\cdots+4096u+2048)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y^{11}+7y^{10}+\cdots-6y-1)^{10})(y^{40}+21y^{39}+\cdots+y+1)$ $\cdot(y^{56}+28y^{55}+\cdots+9502720y+1048576)$
c_2, c_{10}	$(y^{40}+22y^{39}+\cdots-5y+1)(y^{56}-16y^{55}+\cdots-34y+1)$ $\cdot(y^{110}+35y^{109}+\cdots-7528y+1)$
c_3, c_9	$(y^{40}-13y^{39}+\cdots+223y+49)(y^{56}-7y^{55}+\cdots-18y+1)$ $\cdot(y^{110}-25y^{109}+\cdots+621106657840y+5279330281)$
c_5, c_6, c_{11}	$((y^5-5y^4+8y^3-3y^2-y-1)^{22})(y^{40}-40y^{39}+\cdots+y+1)$ $\cdot(y^{56}-45y^{55}+\cdots-2097152y+4194304)$
c_7	$((y^{11}-y^{10}+\cdots+6y-1)^{10})(y^{40}-4y^{39}+\cdots-17y+1)$ $\cdot(y^{56}-5y^{55}+\cdots-9984y+1024)$
c_8, c_{12}	$(y^{40}-13y^{39}+\cdots+5y+1)(y^{56}+33y^{55}+\cdots+188y+1)$ $\cdot(y^{110}-21y^{109}+\cdots-39626548y+299209)$