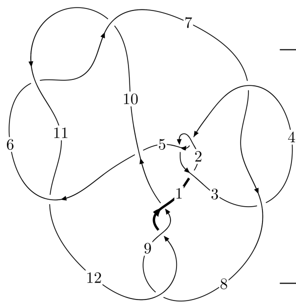
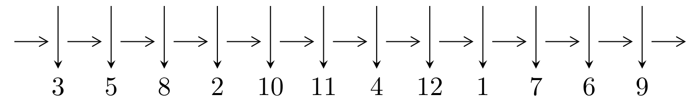
$12a_{0094}$ ($K12a_{0094}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -9.96260 \times 10^{145} u^{95} - 3.70133 \times 10^{146} u^{94} + \cdots + 8.62108 \times 10^{145} b - 3.66132 \times 10^{147}, \\
& -2.18202 \times 10^{148} u^{95} - 7.85274 \times 10^{148} u^{94} + \cdots + 5.43128 \times 10^{147} a - 7.52984 \times 10^{149}, \\
& u^{96} + 5u^{95} + \cdots - 91u + 49 \rangle \\
I_2^u = \langle & b,\ 4u^5 - 2u^4 - 13u^3 + 3u^2 + 3a + 8u + 5,\ u^6 - u^5 - 3u^4 + 2u^3 + 2u^2 + u - 1 \rangle \\
I_3^u = \langle & 98a^5 - 302a^4 + 818a^3 + 65a^2 + 1413b + 948a - 1845,\ a^6 - 4a^5 + 10a^4 - 2a^3 - 3a^2 - 18a + 27,\ u + 1 \rangle \\
I_4^u = \langle & a^2 + b + 2a + 1,\ a^3 + 2a^2 + a + 1,\ u - 1 \rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 111 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. $\boldsymbol{I_1^u = \langle -9.96\times10^{145}u^{95} - 3.70\times10^{146}u^{94} + \cdots + 8.62\times10^{145}b - 3.66\times10^{147},\ -2.18\times10^{148}u^{95} - 7.85\times10^{148}u^{94} + \cdots + 5.43\times10^{147}a - 7.53\times10^{149},\ u^{96} + 5u^{95} + \cdots - 91u + 49\rangle}$

(i) Arc colorings

$$a_8 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u\\-u^3+u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}4.01750u^{95} + 14.4584u^{94} + \cdots - 354.098u + 138.638\\1.15561u^{95} + 4.29335u^{94} + \cdots - 112.037u + 42.4694\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-u^2+1\\-u^4+2u^2\end{pmatrix}$$
$$a_3 = \begin{pmatrix}5.17311u^{95} + 18.7517u^{94} + \cdots - 466.134u + 181.108\\1.15561u^{95} + 4.29335u^{94} + \cdots - 112.037u + 42.4694\end{pmatrix}$$
$$a_2 = \begin{pmatrix}3.25211u^{95} + 11.7121u^{94} + \cdots - 290.167u + 111.886\\1.35247u^{95} + 4.91134u^{94} + \cdots - 126.362u + 48.5960\end{pmatrix}$$
$$a_5 = \begin{pmatrix}3.49585u^{95} + 12.5870u^{94} + \cdots - 305.981u + 121.267\\1.35247u^{95} + 4.91134u^{94} + \cdots - 126.362u + 48.5960\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0.965966u^{95} + 3.49842u^{94} + \cdots - 86.5737u + 35.3472\\2.93454u^{95} + 10.4708u^{94} + \cdots - 255.270u + 99.8370\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-2.45974u^{95} - 8.79529u^{94} + \cdots + 218.176u - 84.7113\\3.01300u^{95} + 10.5769u^{94} + \cdots - 247.275u + 98.2961\end{pmatrix}$$
$$a_6 = \begin{pmatrix}2.19394u^{95} + 7.96817u^{94} + \cdots - 194.713u + 77.4488\\1.23257u^{95} + 4.56553u^{94} + \cdots - 125.028u + 47.0994\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -5.54253u^{95} - 19.5325u^{94} + \cdots + 462.052u - 194.600$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{96} + 46u^{95} + \cdots + 6201u + 81$
c_2, c_4	$u^{96} - 10u^{95} + \cdots + 21u + 9$
c_3, c_7	$u^{96} + 2u^{95} + \cdots - 960u - 576$
c_5	$u^{96} - 2u^{95} + \cdots + 37784u - 17960$
c_6, c_{10}, c_{11}	$u^{96} + 2u^{95} + \cdots - 40u - 8$
c_8, c_9, c_{12}	$u^{96} + 5u^{95} + \cdots - 91u + 49$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{96} + 18y^{95} + \cdots - 35151813y + 6561$
c_2, c_4	$y^{96} - 46y^{95} + \cdots - 6201y + 81$
c_3, c_7	$y^{96} + 48y^{95} + \cdots + 958464y + 331776$
c_5	$y^{96} - 8y^{95} + \cdots - 4744914496y + 322561600$
c_6, c_{10}, c_{11}	$y^{96} + 88y^{95} + \cdots - 2240y + 64$
c_8, c_9, c_{12}	$y^{96} - 89y^{95} + \cdots + 51009y + 2401$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.894603 + 0.430427I$ $a = -0.58259 + 1.60361I$ $b = -0.799471 - 0.443389I$	$1.05865 + 1.46642I$	0
$u = 0.894603 - 0.430427I$ $a = -0.58259 - 1.60361I$ $b = -0.799471 + 0.443389I$	$1.05865 - 1.46642I$	0
$u = 0.267433 + 0.926258I$ $a = -0.11021 + 1.94515I$ $b = -0.675868 - 1.203540I$	$5.41790 - 12.05450I$	0
$u = 0.267433 - 0.926258I$ $a = -0.11021 - 1.94515I$ $b = -0.675868 + 1.203540I$	$5.41790 + 12.05450I$	0
$u = -0.823573 + 0.631077I$ $a = -0.537201 - 0.568626I$ $b = 0.466493 + 1.006500I$	$-1.31559 - 3.10134I$	0
$u = -0.823573 - 0.631077I$ $a = -0.537201 + 0.568626I$ $b = 0.466493 - 1.006500I$	$-1.31559 + 3.10134I$	0
$u = 0.587087 + 0.743265I$ $a = 0.518160 - 0.556696I$ $b = -0.311553 + 0.850667I$	$1.94707 - 0.56651I$	0
$u = 0.587087 - 0.743265I$ $a = 0.518160 + 0.556696I$ $b = -0.311553 - 0.850667I$	$1.94707 + 0.56651I$	0
$u = -0.942713$ $a = 2.76097$ $b = 0.453528$	-2.90871	0
$u = -0.358924 + 0.854060I$ $a = 0.26984 + 1.70642I$ $b = 0.613586 - 1.130970I$	$0.11990 + 8.22678I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.358924 - 0.854060I$ $a = 0.26984 - 1.70642I$ $b = 0.613586 + 1.130970I$	$0.11990 - 8.22678I$	0
$u = -0.992667 + 0.428867I$ $a = 0.646176 + 0.680901I$ $b = -0.077552 - 0.958487I$	$-0.004630 + 1.218200I$	0
$u = -0.992667 - 0.428867I$ $a = 0.646176 - 0.680901I$ $b = -0.077552 + 0.958487I$	$-0.004630 - 1.218200I$	0
$u = 0.698211 + 0.551668I$ $a = -0.564768 + 0.843621I$ $b = -0.309252 - 0.991383I$	$1.80240 - 4.20818I$	0
$u = 0.698211 - 0.551668I$ $a = -0.564768 - 0.843621I$ $b = -0.309252 + 0.991383I$	$1.80240 + 4.20818I$	0
$u = 0.211349 + 0.861415I$ $a = -0.04386 - 2.14378I$ $b = 0.493525 + 1.216240I$	$7.73870 - 6.46946I$	0
$u = 0.211349 - 0.861415I$ $a = -0.04386 + 2.14378I$ $b = 0.493525 - 1.216240I$	$7.73870 + 6.46946I$	0
$u = 0.741282 + 0.406653I$ $a = -0.03057 - 1.82826I$ $b = -0.490624 + 0.614411I$	$0.627403 - 0.638866I$	0
$u = 0.741282 - 0.406653I$ $a = -0.03057 + 1.82826I$ $b = -0.490624 - 0.614411I$	$0.627403 + 0.638866I$	0
$u = 1.056680 + 0.482012I$ $a = -0.835691 + 0.839636I$ $b = 0.358765 - 1.061850I$	$5.17707 + 1.67004I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.056680 - 0.482012I$ $a = -0.835691 - 0.839636I$ $b = 0.358765 + 1.061850I$	$5.17707 - 1.67004I$	0
$u = 0.271321 + 0.789087I$ $a = 0.761633 - 0.541341I$ $b = -1.023040 + 0.436728I$	$2.98639 - 5.88754I$	$-12.00000 + 0.I$
$u = 0.271321 - 0.789087I$ $a = 0.761633 + 0.541341I$ $b = -1.023040 - 0.436728I$	$2.98639 + 5.88754I$	$-12.00000 + 0.I$
$u = 1.176190 + 0.087795I$ $a = 2.23771 - 1.12256I$ $b = 0.653688 - 0.348368I$	$1.68802 - 0.79999I$	0
$u = 1.176190 - 0.087795I$ $a = 2.23771 + 1.12256I$ $b = 0.653688 + 0.348368I$	$1.68802 + 0.79999I$	0
$u = 1.012610 + 0.606707I$ $a = 0.560411 - 0.684913I$ $b = -0.589071 + 1.120010I$	$3.16056 + 6.70309I$	0
$u = 1.012610 - 0.606707I$ $a = 0.560411 + 0.684913I$ $b = -0.589071 - 1.120010I$	$3.16056 - 6.70309I$	0
$u = 1.185190 + 0.057003I$ $a = -0.166385 + 1.005370I$ $b = -0.15098 - 1.44718I$	$0.86415 - 3.10882I$	0
$u = 1.185190 - 0.057003I$ $a = -0.166385 - 1.005370I$ $b = -0.15098 + 1.44718I$	$0.86415 + 3.10882I$	0
$u = -0.238407 + 0.769442I$ $a = -0.09177 - 1.88281I$ $b = -0.404576 + 1.090770I$	$2.24931 + 3.08732I$	$-8.93943 - 4.55885I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.238407 - 0.769442I$ $a = -0.09177 + 1.88281I$ $b = -0.404576 - 1.090770I$	$2.24931 - 3.08732I$	$-8.93943 + 4.55885I$
$u = 0.479555 + 0.633842I$ $a = -0.68905 + 1.25761I$ $b = -0.437629 - 1.084170I$	$1.92869 - 4.25628I$	$-8.95478 + 4.66046I$
$u = 0.479555 - 0.633842I$ $a = -0.68905 - 1.25761I$ $b = -0.437629 + 1.084170I$	$1.92869 + 4.25628I$	$-8.95478 - 4.66046I$
$u = 0.297926 + 0.713446I$ $a = -0.26756 + 2.80054I$ $b = -0.319113 - 0.887092I$	$2.05700 - 3.39158I$	$-8.19869 + 5.33018I$
$u = 0.297926 - 0.713446I$ $a = -0.26756 - 2.80054I$ $b = -0.319113 + 0.887092I$	$2.05700 + 3.39158I$	$-8.19869 - 5.33018I$
$u = -1.274940 + 0.151744I$ $a = -0.131521 - 1.080050I$ $b = 0.35236 + 1.51844I$	$4.83457 - 0.90672I$	0
$u = -1.274940 - 0.151744I$ $a = -0.131521 + 1.080050I$ $b = 0.35236 - 1.51844I$	$4.83457 + 0.90672I$	0
$u = 1.263760 + 0.247129I$ $a = -1.56360 + 0.34158I$ $b = -0.252571 - 1.050680I$	$5.57865 - 0.54346I$	0
$u = 1.263760 - 0.247129I$ $a = -1.56360 - 0.34158I$ $b = -0.252571 + 1.050680I$	$5.57865 + 0.54346I$	0
$u = -0.334430 + 0.619539I$ $a = -0.330409 - 0.591868I$ $b = 0.851796 + 0.434666I$	$-2.02726 + 2.77817I$	$-15.3604 - 6.1150I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.334430 - 0.619539I$ $a = -0.330409 + 0.591868I$ $b = 0.851796 - 0.434666I$	$-2.02726 - 2.77817I$	$-15.3604 + 6.1150I$
$u = -1.287070 + 0.218078I$ $a = 0.372738 + 1.177560I$ $b = -0.03743 - 1.53555I$	$5.52415 + 5.61656I$	0
$u = -1.287070 - 0.218078I$ $a = 0.372738 - 1.177560I$ $b = -0.03743 + 1.53555I$	$5.52415 - 5.61656I$	0
$u = 0.190244 + 0.645320I$ $a = 0.67506 - 1.65996I$ $b = 0.156876 + 1.097660I$	$3.20723 + 0.61466I$	$-6.11717 - 2.65082I$
$u = 0.190244 - 0.645320I$ $a = 0.67506 + 1.65996I$ $b = 0.156876 - 1.097660I$	$3.20723 - 0.61466I$	$-6.11717 + 2.65082I$
$u = 0.228637 + 0.602725I$ $a = -1.074020 + 0.424384I$ $b = 0.930502 - 0.044924I$	$4.17537 - 1.56489I$	$-6.74200 + 0.69028I$
$u = 0.228637 - 0.602725I$ $a = -1.074020 - 0.424384I$ $b = 0.930502 + 0.044924I$	$4.17537 + 1.56489I$	$-6.74200 - 0.69028I$
$u = 0.503445 + 0.391937I$ $a = -0.737578 - 1.066170I$ $b = 0.527550 + 0.356073I$	$3.26727 - 1.44940I$	$-6.57025 + 4.96044I$
$u = 0.503445 - 0.391937I$ $a = -0.737578 + 1.066170I$ $b = 0.527550 - 0.356073I$	$3.26727 + 1.44940I$	$-6.57025 - 4.96044I$
$u = -1.356770 + 0.230598I$ $a = 0.968466 + 0.661357I$ $b = 0.549142 - 0.999132I$	$-1.63528 + 2.55488I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.356770 - 0.230598I$ $a = 0.968466 - 0.661357I$ $b = 0.549142 + 0.999132I$	$-1.63528 - 2.55488I$	0
$u = 1.367040 + 0.173042I$ $a = 1.53440 + 0.00518I$ $b = 0.531741 + 1.098270I$	$3.86558 - 5.42020I$	0
$u = 1.367040 - 0.173042I$ $a = 1.53440 - 0.00518I$ $b = 0.531741 - 1.098270I$	$3.86558 + 5.42020I$	0
$u = -0.002603 + 0.620958I$ $a = -1.09699 - 2.51791I$ $b = -0.104322 + 1.314390I$	$9.52451 - 2.61831I$	$-2.94788 + 2.70332I$
$u = -0.002603 - 0.620958I$ $a = -1.09699 + 2.51791I$ $b = -0.104322 - 1.314390I$	$9.52451 + 2.61831I$	$-2.94788 - 2.70332I$
$u = 1.381080 + 0.124946I$ $a = -0.255000 + 0.094725I$ $b = -1.026300 + 0.329559I$	$-5.66046 - 1.06424I$	0
$u = 1.381080 - 0.124946I$ $a = -0.255000 - 0.094725I$ $b = -1.026300 - 0.329559I$	$-5.66046 + 1.06424I$	0
$u = -1.393130 + 0.122971I$ $a = -0.732186 + 0.046331I$ $b = -0.893463 - 0.643378I$	$-5.71954 + 1.65518I$	0
$u = -1.393130 - 0.122971I$ $a = -0.732186 - 0.046331I$ $b = -0.893463 + 0.643378I$	$-5.71954 - 1.65518I$	0
$u = -1.398540 + 0.026055I$ $a = 0.430726 + 0.249827I$ $b = 0.869514 - 0.594393I$	$-2.80396 + 2.59732I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.398540 - 0.026055I$ $a = 0.430726 - 0.249827I$ $b = 0.869514 + 0.594393I$	$-2.80396 - 2.59732I$	0
$u = -0.403865 + 0.443628I$ $a = 0.83704 + 2.70119I$ $b = 0.396771 - 0.614354I$	$-2.61966 + 0.66074I$	$-15.8520 - 7.6803I$
$u = -0.403865 - 0.443628I$ $a = 0.83704 - 2.70119I$ $b = 0.396771 + 0.614354I$	$-2.61966 - 0.66074I$	$-15.8520 + 7.6803I$
$u = -1.386340 + 0.239403I$ $a = 0.082597 + 0.328551I$ $b = 1.158270 + 0.175859I$	$-0.96986 + 4.66734I$	0
$u = -1.386340 - 0.239403I$ $a = 0.082597 - 0.328551I$ $b = 1.158270 - 0.175859I$	$-0.96986 - 4.66734I$	0
$u = -1.410450 + 0.055569I$ $a = -1.011580 - 0.863938I$ $b = -0.661367 + 0.847247I$	$-6.04305 - 1.02722I$	0
$u = -1.410450 - 0.055569I$ $a = -1.011580 + 0.863938I$ $b = -0.661367 - 0.847247I$	$-6.04305 + 1.02722I$	0
$u = 1.42426 + 0.18534I$ $a = 0.93798 - 1.35215I$ $b = 0.500115 + 1.007120I$	$-8.39649 - 3.07099I$	0
$u = 1.42426 - 0.18534I$ $a = 0.93798 + 1.35215I$ $b = 0.500115 - 1.007120I$	$-8.39649 + 3.07099I$	0
$u = 1.40527 + 0.29944I$ $a = -0.912933 + 1.032280I$ $b = -0.631485 - 1.184960I$	$-2.99761 - 6.93739I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.40527 - 0.29944I$ $a = -0.912933 - 1.032280I$ $b = -0.631485 + 1.184960I$	$-2.99761 + 6.93739I$	0
$u = 1.42532 + 0.23544I$ $a = 0.254075 - 0.178935I$ $b = 1.074790 - 0.581683I$	$-7.66058 - 5.90482I$	0
$u = 1.42532 - 0.23544I$ $a = 0.254075 + 0.178935I$ $b = 1.074790 + 0.581683I$	$-7.66058 + 5.90482I$	0
$u = -1.41882 + 0.27563I$ $a = -0.88046 - 1.59267I$ $b = -0.376567 + 1.099430I$	$-3.42401 + 6.97886I$	0
$u = -1.41882 - 0.27563I$ $a = -0.88046 + 1.59267I$ $b = -0.376567 - 1.099430I$	$-3.42401 - 6.97886I$	0
$u = -1.40519 + 0.35580I$ $a = 0.96762 + 1.26154I$ $b = 0.61274 - 1.30128I$	$2.60078 + 10.84870I$	0
$u = -1.40519 - 0.35580I$ $a = 0.96762 - 1.26154I$ $b = 0.61274 + 1.30128I$	$2.60078 - 10.84870I$	0
$u = -1.42031 + 0.31148I$ $a = -0.011770 - 0.343571I$ $b = -1.168130 - 0.504988I$	$-2.41478 + 9.86385I$	0
$u = -1.42031 - 0.31148I$ $a = -0.011770 + 0.343571I$ $b = -1.168130 + 0.504988I$	$-2.41478 - 9.86385I$	0
$u = -1.46849 + 0.25282I$ $a = -1.035010 - 0.588551I$ $b = -0.694605 + 1.088960I$	$-4.25746 + 7.57273I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.46849-0.25282I$ $a=-1.035010+0.588551I$ $b=-0.694605-1.088960I$	$-4.25746-7.57273I$	0
$u=-1.44446+0.38146I$ $a=-1.08702-1.20415I$ $b=-0.76174+1.24391I$	$-0.0342+16.7602I$	0
$u=-1.44446-0.38146I$ $a=-1.08702+1.20415I$ $b=-0.76174-1.24391I$	$-0.0342-16.7602I$	0
$u=\ 1.46933+0.33045I$ $a=\ 1.022440-0.953412I$ $b=\ 0.754824+1.171510I$	$-5.74672-12.51240I$	0
$u=\ 1.46933-0.33045I$ $a=\ 1.022440+0.953412I$ $b=\ 0.754824-1.171510I$	$-5.74672+12.51240I$	0
$u=-0.084665+0.465660I$ $a=\ 1.95000+2.56550I$ $b=\ 0.382644-1.302200I$	$8.58074+3.10096I$	$-3.84105-3.11958I$
$u=-0.084665-0.465660I$ $a=\ 1.95000-2.56550I$ $b=\ 0.382644+1.302200I$	$8.58074-3.10096I$	$-3.84105+3.11958I$
$u=-1.56096+0.03152I$ $a=-0.347312+0.052373I$ $b=-0.564388+0.773277I$	$-6.29234+5.82359I$	0
$u=-1.56096-0.03152I$ $a=-0.347312-0.052373I$ $b=-0.564388-0.773277I$	$-6.29234-5.82359I$	0
$u=-1.55744+0.20416I$ $a=\ 0.092769-0.173183I$ $b=-0.298569-0.601193I$	$-5.22043+3.95090I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.55744-0.20416I$ $a=\ 0.092769+0.173183I$ $b=-0.298569+0.601193I$	$-5.22043-3.95090I$	0
$u=\ 1.58003+0.08608I$ $a=\ 0.091506-0.152694I$ $b=\ 0.439553-0.654331I$	$-9.58542+0.87825I$	0
$u=\ 1.58003-0.08608I$ $a=\ 0.091506+0.152694I$ $b=\ 0.439553+0.654331I$	$-9.58542-0.87825I$	0
$u=-0.338118$ $a=\ 0.768935$ $b=-0.339691$	-0.610403	-16.1160
$u=\ 0.044589+0.274420I$ $a=-0.230218+1.347340I$ $b=-0.672500+0.131387I$	$-0.925774-0.265219I$	$-10.99772-1.52988I$
$u=\ 0.044589-0.274420I$ $a=-0.230218-1.347340I$ $b=-0.672500-0.131387I$	$-0.925774+0.265219I$	$-10.99772+1.52988I$

II.

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

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -\frac{4}{3}u^5 + \frac{2}{3}u^4 + \cdots - \frac{8}{3}u - \frac{5}{3} \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -\frac{4}{3}u^5 + \frac{2}{3}u^4 + \cdots - \frac{8}{3}u - \frac{5}{3} \\ 0 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -\frac{4}{3}u^5 + \frac{2}{3}u^4 + \cdots - \frac{11}{3}u - \frac{5}{3} \\ -u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u \\ u^3 - u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^4 - 3u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^3 + 2u \\ -u^5 + 3u^3 - u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{28}{9}u^5 + \frac{1}{9}u^4 - \frac{46}{9}u^3 - u^2 - \frac{34}{9}u - \frac{103}{9}$

(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_8, c_9	$u^6 - u^5 - 3u^4 + 2u^3 + 2u^2 + u - 1$
c_6	$u^6 + u^5 + 3u^4 + 2u^3 + 2u^2 + u - 1$
c_{10}, c_{11}	$u^6 - u^5 + 3u^4 - 2u^3 + 2u^2 - u - 1$
c_{12}	$u^6 + u^5 - 3u^4 - 2u^3 + 2u^2 - u - 1$

(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_8, c_9 c_{12}	$y^6 - 7y^5 + 17y^4 - 16y^3 + 6y^2 - 5y + 1$
c_6, c_{10}, c_{11}	$y^6 + 5y^5 + 9y^4 + 4y^3 - 6y^2 - 5y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.493180 + 0.575288I$ $a = 0.998450 + 0.400249I$ $b = 0$	$1.31531 + 1.97241I$	$-11.11410 - 3.48248I$
$u = -0.493180 - 0.575288I$ $a = 0.998450 - 0.400249I$ $b = 0$	$1.31531 - 1.97241I$	$-11.11410 + 3.48248I$
$u = 0.483672$ $a = -2.69889$ $b = 0$	-2.38379	-13.9950
$u = 1.52087 + 0.16310I$ $a = 0.421699 - 0.216810I$ $b = 0$	$-5.34051 - 4.59213I$	$-13.8624 + 6.6392I$
$u = 1.52087 - 0.16310I$ $a = 0.421699 + 0.216810I$ $b = 0$	$-5.34051 + 4.59213I$	$-13.8624 - 6.6392I$
$u = -1.53904$ $a = -0.474740$ $b = 0$	-9.30502	-15.6070

III. $I^u_3 =$
$\langle 98a^5+1413b+\cdots+948a-1845,\ a^6-4a^5+10a^4-2a^3-3a^2-18a+27,\ u+1\rangle$

(i) Arc colorings

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

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

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

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

$$a_4 = \begin{pmatrix} a \\ -0.0693560a^5 + 0.213730a^4 + \cdots - 0.670913a + 1.30573 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -0.0693560a^5 + 0.213730a^4 + \cdots + 0.329087a + 1.30573 \\ -0.0693560a^5 + 0.213730a^4 + \cdots - 0.670913a + 1.30573 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.0863411a^5 + 0.177636a^4 + \cdots - 0.188960a + 1.60510 \\ -0.0226469a^5 + 0.0629866a^4 + \cdots - 0.246285a - 1.26752 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.0636943a^5 + 0.114650a^4 + \cdots + 0.0573248a + 0.872611 \\ -0.0226469a^5 + 0.0629866a^4 + \cdots - 0.246285a - 1.26752 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.0636943a^5 - 0.114650a^4 + \cdots - 0.0573248a - 0.872611 \\ 0.0226469a^5 - 0.0629866a^4 + \cdots + 0.246285a + 1.26752 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 2 \\ -0.122435a^5 + 0.309271a^4 + \cdots + 0.543524a + 2.86624 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.0636943a^5 + 0.114650a^4 + \cdots + 0.0573248a + 0.872611 \\ -0.0863411a^5 + 0.177636a^4 + \cdots - 0.188960a - 0.394904 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{88}{471}a^5 + \frac{284}{471}a^4 - \frac{632}{471}a^3 - \frac{28}{157}a^2 - \frac{800}{471}a - \frac{896}{157}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.00000$ $a=-0.930832+0.918189I$ $b=\ \ 0.215080-1.307140I$	$6.31400+2.82812I$	$-8.49024-2.97945I$
$u=-1.00000$ $a=-0.930832-0.918189I$ $b=\ \ 0.215080+1.307140I$	$6.31400-2.82812I$	$-8.49024+2.97945I$
$u=-1.00000$ $a=\ \ 1.175960+0.571534I$ $b=\ \ 0.215080-1.307140I$	$6.31400+2.82812I$	$-8.49024-2.97945I$
$u=-1.00000$ $a=\ \ 1.175960-0.571534I$ $b=\ \ 0.215080+1.307140I$	$6.31400-2.82812I$	$-8.49024+2.97945I$
$u=-1.00000$ $a=\ \ 1.75488+2.48177I$ $b=\ \ 0.569840$	2.17641	$-15.0195+0.I$
$u=-1.00000$ $a=\ \ 1.75488-2.48177I$ $b=\ \ 0.569840$	2.17641	$-15.0195+0.I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 2a^2 - 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -0.122561 + 0.744862I$ $b = -0.215080 - 1.307140I$	$1.37919 - 2.82812I$	$-7.07960 - 0.36516I$
$u = 1.00000$ $a = -0.122561 - 0.744862I$ $b = -0.215080 + 1.307140I$	$1.37919 + 2.82812I$	$-7.07960 + 0.36516I$
$u = 1.00000$ $a = -1.75488$ $b = -0.569840$	-2.75839	0.159190

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^6)(u^3-u^2+2u-1)^3(u^{96}+46u^{95}+\cdots+6201u+81)$
c_2	$((u-1)^6)(u^3+u^2-1)^3(u^{96}-10u^{95}+\cdots+21u+9)$
c_3	$u^6(u^3-u^2+2u-1)(u^3+u^2+2u+1)^2(u^{96}+2u^{95}+\cdots-960u-576)$
c_4	$((u+1)^6)(u^3-u^2+1)^3(u^{96}-10u^{95}+\cdots+21u+9)$
c_5	$u^3(u^2+2)^3(u^6-u^5-3u^4+2u^3+2u^2+u-1)$ $\cdot(u^{96}-2u^{95}+\cdots+37784u-17960)$
c_6	$u^3(u^2+2)^3(u^6+u^5+3u^4+2u^3+2u^2+u-1)$ $\cdot(u^{96}+2u^{95}+\cdots-40u-8)$
c_7	$u^6(u^3-u^2+2u-1)^2(u^3+u^2+2u+1)(u^{96}+2u^{95}+\cdots-960u-576)$
c_8, c_9	$(u-1)^3(u+1)^6(u^6-u^5-3u^4+2u^3+2u^2+u-1)$ $\cdot(u^{96}+5u^{95}+\cdots-91u+49)$
c_{10}, c_{11}	$u^3(u^2+2)^3(u^6-u^5+3u^4-2u^3+2u^2-u-1)$ $\cdot(u^{96}+2u^{95}+\cdots-40u-8)$
c_{12}	$(u-1)^6(u+1)^3(u^6+u^5-3u^4-2u^3+2u^2-u-1)$ $\cdot(u^{96}+5u^{95}+\cdots-91u+49)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^6(y^3+3y^2+2y-1)^3$ $\cdot\,(y^{96}+18y^{95}+\cdots-35151813y+6561)$
c_2, c_4	$((y-1)^6)(y^3-y^2+2y-1)^3(y^{96}-46y^{95}+\cdots-6201y+81)$
c_3, c_7	$y^6(y^3+3y^2+2y-1)^3(y^{96}+48y^{95}+\cdots+958464y+331776)$
c_5	$y^3(y+2)^6(y^6-7y^5+17y^4-16y^3+6y^2-5y+1)$ $\cdot\,(y^{96}-8y^{95}+\cdots-4744914496y+322561600)$
c_6, c_{10}, c_{11}	$y^3(y+2)^6(y^6+5y^5+9y^4+4y^3-6y^2-5y+1)$ $\cdot\,(y^{96}+88y^{95}+\cdots-2240y+64)$
c_8, c_9, c_{12}	$(y-1)^9(y^6-7y^5+17y^4-16y^3+6y^2-5y+1)$ $\cdot\,(y^{96}-89y^{95}+\cdots+51009y+2401)$