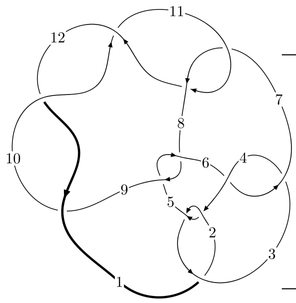
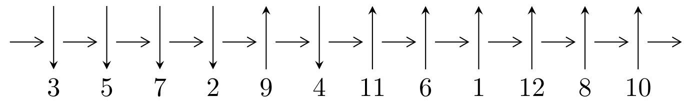
$12a_{0046}$ ($K12a_{0046}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle &-1.02752 \times 10^{30}u^{93} + 2.82962 \times 10^{30}u^{92} + \cdots + 7.01285 \times 10^{29}b + 2.68128 \times 10^{30},\\
&1.33287 \times 10^{30}u^{93} - 5.41849 \times 10^{30}u^{92} + \cdots + 2.33762 \times 10^{29}a - 3.96691 \times 10^{30},\ u^{94} - 5u^{93} + \cdots - 15u +
\end{aligned}$$

$$I_2^u = \langle 2au - u^2 + b + 2a,\ u^2a + a^2 - au + u^2 + u - 1,\ u^3 + u^2 - 1\rangle$$

$$I_3^u = \langle -u^4 + b - 2,\ 2u^4 - u^3 + a + u + 3,\ u^5 - u^4 + u^2 + u - 1\rangle$$

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

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 108 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. $\boldsymbol{I_1^u = \langle -1.03 \times 10^{30} u^{93} + 2.83 \times 10^{30} u^{92} + \cdots + 7.01 \times 10^{29} b + 2.68 \times 10^{30},\ 1.33 \times 10^{30} u^{93} - 5.42 \times 10^{30} u^{92} + \cdots + 2.34 \times 10^{29} a - 3.97 \times 10^{30},\ u^{94} - 5u^{93} + \cdots - 15u + 1 \rangle}$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -5.70183u^{93} + 23.1795u^{92} + \cdots - 124.011u + 16.9699 \\ 1.46519u^{93} - 4.03491u^{92} + \cdots + 39.3234u - 3.82338 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -2.89290u^{93} + 5.89251u^{92} + \cdots - 52.1238u + 11.9968 \\ -12.2961u^{93} + 52.5426u^{92} + \cdots - 84.0089u + 4.39211 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -6.77410u^{93} + 35.7202u^{92} + \cdots - 163.016u + 15.4696 \\ 20.9419u^{93} - 88.1661u^{92} + \cdots + 226.524u - 15.8512 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^4 - u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 5.35996u^{93} - 24.6779u^{92} + \cdots + 130.166u - 14.0247 \\ -9.43706u^{93} + 37.3806u^{92} + \cdots - 111.393u + 8.46972 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^6 + u^4 - 2u^2 + 1 \\ u^6 + u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -1.23353u^{93} + 0.892677u^{92} + \cdots - 10.5212u + 5.01394 \\ -6.25844u^{93} + 27.0384u^{92} + \cdots - 59.6741u + 3.69409 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6.58579u^{93} - 34.2762u^{92} + \cdots + 276.933u - 31.2371$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{94} + 47u^{93} + \cdots + 2083u + 1$
c_2, c_4	$u^{94} - 9u^{93} + \cdots + 37u + 1$
c_3, c_6	$u^{94} - 4u^{93} + \cdots + 320u - 32$
c_5, c_8	$u^{94} + 2u^{93} + \cdots - 2560u - 512$
c_7, c_{11}	$u^{94} - 5u^{93} + \cdots - 15u + 1$
c_9, c_{10}, c_{12}	$u^{94} - 23u^{93} + \cdots - 185u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{94} + 9y^{93} + \cdots - 4301459y + 1$
c_2, c_4	$y^{94} - 47y^{93} + \cdots - 2083y + 1$
c_3, c_6	$y^{94} + 42y^{93} + \cdots - 37376y + 1024$
c_5, c_8	$y^{94} + 56y^{93} + \cdots + 3801088y + 262144$
c_7, c_{11}	$y^{94} - 23y^{93} + \cdots - 185y + 1$
c_9, c_{10}, c_{12}	$y^{94} + 101y^{93} + \cdots - 28969y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.905451 + 0.437078I$ $a = -0.38908 - 2.12552I$ $b = -1.55661 + 2.03416I$	$-2.95530 - 3.62965I$	0
$u = -0.905451 - 0.437078I$ $a = -0.38908 + 2.12552I$ $b = -1.55661 - 2.03416I$	$-2.95530 + 3.62965I$	0
$u = 0.998868 + 0.153287I$ $a = -0.34700 - 1.43569I$ $b = 0.933069 + 0.889689I$	$3.69183 - 0.90668I$	0
$u = 0.998868 - 0.153287I$ $a = -0.34700 + 1.43569I$ $b = 0.933069 - 0.889689I$	$3.69183 + 0.90668I$	0
$u = 0.885560 + 0.419384I$ $a = 0.739482 + 1.067380I$ $b = -1.14651 - 1.15035I$	$2.64492 + 6.49916I$	0
$u = 0.885560 - 0.419384I$ $a = 0.739482 - 1.067380I$ $b = -1.14651 + 1.15035I$	$2.64492 - 6.49916I$	0
$u = 0.913302 + 0.325477I$ $a = -0.70472 - 1.26351I$ $b = 1.10966 + 1.07964I$	$4.12929 + 1.39857I$	0
$u = 0.913302 - 0.325477I$ $a = -0.70472 + 1.26351I$ $b = 1.10966 - 1.07964I$	$4.12929 - 1.39857I$	0
$u = -0.954895 + 0.414756I$ $a = -0.025203 + 0.334361I$ $b = 1.332920 - 0.124333I$	$-2.18704 - 6.14689I$	0
$u = -0.954895 - 0.414756I$ $a = -0.025203 - 0.334361I$ $b = 1.332920 + 0.124333I$	$-2.18704 + 6.14689I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.721866 + 0.754158I$ $a = 0.693424 - 0.277978I$ $b = -0.545353 - 0.989217I$	$-2.17526 - 1.45322I$	0
$u = -0.721866 - 0.754158I$ $a = 0.693424 + 0.277978I$ $b = -0.545353 + 0.989217I$	$-2.17526 + 1.45322I$	0
$u = 1.056890 + 0.104571I$ $a = 0.232763 + 1.345440I$ $b = -0.915683 - 0.763709I$	$1.69927 - 5.76809I$	0
$u = 1.056890 - 0.104571I$ $a = 0.232763 - 1.345440I$ $b = -0.915683 + 0.763709I$	$1.69927 + 5.76809I$	0
$u = -0.995318 + 0.375431I$ $a = 0.18189 + 1.71349I$ $b = 1.16693 - 1.59065I$	$2.38179 - 6.85574I$	0
$u = -0.995318 - 0.375431I$ $a = 0.18189 - 1.71349I$ $b = 1.16693 + 1.59065I$	$2.38179 + 6.85574I$	0
$u = -0.511330 + 0.782712I$ $a = -0.547011 + 0.562475I$ $b = 0.713250 + 0.726812I$	$-4.15606 - 4.95399I$	0
$u = -0.511330 - 0.782712I$ $a = -0.547011 - 0.562475I$ $b = 0.713250 - 0.726812I$	$-4.15606 + 4.95399I$	0
$u = 0.929009 + 0.068800I$ $a = -0.26626 - 1.43751I$ $b = -0.492725 + 0.646944I$	$-0.254266 - 0.867513I$	0
$u = 0.929009 - 0.068800I$ $a = -0.26626 + 1.43751I$ $b = -0.492725 - 0.646944I$	$-0.254266 + 0.867513I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.823707 + 0.383516I$ $a = -0.041446 - 0.332414I$ $b = -1.142000 - 0.123519I$	$-0.67738 - 1.92321I$	0
$u = -0.823707 - 0.383516I$ $a = -0.041446 + 0.332414I$ $b = -1.142000 + 0.123519I$	$-0.67738 + 1.92321I$	0
$u = -1.036230 + 0.405152I$ $a = -0.04234 - 1.71265I$ $b = -1.23040 + 1.38676I$	$-0.10577 - 12.27470I$	0
$u = -1.036230 - 0.405152I$ $a = -0.04234 + 1.71265I$ $b = -1.23040 - 1.38676I$	$-0.10577 + 12.27470I$	0
$u = -0.859284 + 0.214626I$ $a = 0.548445 + 1.203540I$ $b = 0.64460 - 2.02449I$	$4.79944 - 3.38706I$	$0. + 9.66029I$
$u = -0.859284 - 0.214626I$ $a = 0.548445 - 1.203540I$ $b = 0.64460 + 2.02449I$	$4.79944 + 3.38706I$	$0. - 9.66029I$
$u = -0.878091 + 0.732966I$ $a = 2.13662 - 2.26977I$ $b = -4.27115 - 0.73401I$	$-4.29337 - 2.79203I$	0
$u = -0.878091 - 0.732966I$ $a = 2.13662 + 2.26977I$ $b = -4.27115 + 0.73401I$	$-4.29337 + 2.79203I$	0
$u = 0.792347 + 0.274736I$ $a = 0.600358 + 1.032710I$ $b = 0.263529 - 0.187085I$	$-0.12060 + 1.76624I$	$2.00000 - 5.30326I$
$u = 0.792347 - 0.274736I$ $a = 0.600358 - 1.032710I$ $b = 0.263529 + 0.187085I$	$-0.12060 - 1.76624I$	$2.00000 + 5.30326I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.995387+0.608742I$ $a=-0.063080+0.575346I$ $b=\ \ 1.46287-0.61224I$	$-2.64588-0.14652I$	0
$u=-0.995387-0.608742I$ $a=-0.063080-0.575346I$ $b=\ \ 1.46287+0.61224I$	$-2.64588+0.14652I$	0
$u=-0.844120+0.835558I$ $a=\ \ 1.108580-0.589162I$ $b=-1.15995-1.20057I$	$-3.06674-1.11761I$	0
$u=-0.844120-0.835558I$ $a=\ \ 1.108580+0.589162I$ $b=-1.15995+1.20057I$	$-3.06674+1.11761I$	0
$u=-0.964903+0.705690I$ $a=\ \ 0.079505-0.904415I$ $b=-1.75161+0.99325I$	$-1.44073-4.07182I$	0
$u=-0.964903-0.705690I$ $a=\ \ 0.079505+0.904415I$ $b=-1.75161-0.99325I$	$-1.44073+4.07182I$	0
$u=\ \ 0.884235+0.815291I$ $a=\ \ 0.997732-0.766176I$ $b=\ \ 1.20106+2.96128I$	$-1.221240-0.245856I$	0
$u=\ \ 0.884235-0.815291I$ $a=\ \ 0.997732+0.766176I$ $b=\ \ 1.20106-2.96128I$	$-1.221240+0.245856I$	0
$u=-0.227459+0.757503I$ $a=\ \ 1.90723+0.28691I$ $b=-1.249060-0.643882I$	$-2.75290+8.12923I$	$-3.14725-5.96002I$
$u=-0.227459-0.757503I$ $a=\ \ 1.90723-0.28691I$ $b=-1.249060+0.643882I$	$-2.75290-8.12923I$	$-3.14725+5.96002I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=\ \ 0.823780+0.888088I$ $a=\ \ 1.65148-0.04048I$ $b=-0.63909+2.70840I$	$-5.87040-4.86160I$	0
$u=\ \ 0.823780-0.888088I$ $a=\ \ 1.65148+0.04048I$ $b=-0.63909-2.70840I$	$-5.87040+4.86160I$	0
$u=-0.888709+0.828883I$ $a=-0.97034+1.31401I$ $b=\ \ 2.74854-0.53626I$	$-6.59016-1.87331I$	0
$u=-0.888709-0.828883I$ $a=-0.97034-1.31401I$ $b=\ \ 2.74854+0.53626I$	$-6.59016+1.87331I$	0
$u=-0.768651+0.153462I$ $a=-0.662957-0.821078I$ $b=-0.62346+2.12671I$	$4.22053+2.42602I$	$4.48189+9.29126I$
$u=-0.768651-0.153462I$ $a=-0.662957+0.821078I$ $b=-0.62346-2.12671I$	$4.22053-2.42602I$	$4.48189-9.29126I$
$u=\ \ 0.911045+0.807605I$ $a=-0.744831+1.036970I$ $b=-1.67892-2.96867I$	$-1.13789+6.32136I$	0
$u=\ \ 0.911045-0.807605I$ $a=-0.744831-1.036970I$ $b=-1.67892+2.96867I$	$-1.13789-6.32136I$	0
$u=\ \ 0.817206+0.911898I$ $a=-1.71283-0.11928I$ $b=\ \ 1.01533-2.55879I$	$-8.86590-10.56170I$	0
$u=\ \ 0.817206-0.911898I$ $a=-1.71283+0.11928I$ $b=\ \ 1.01533+2.55879I$	$-8.86590+10.56170I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.845161 + 0.889434I$ $a = -0.288648 - 0.032497I$ $b = 0.104224 + 0.631601I$	$-10.59930 - 3.58899I$	0
$u = 0.845161 - 0.889434I$ $a = -0.288648 + 0.032497I$ $b = 0.104224 - 0.631601I$	$-10.59930 + 3.58899I$	0
$u = -0.913525 + 0.821468I$ $a = -1.23296 + 0.92411I$ $b = 1.62458 + 1.03417I$	$-6.51331 - 4.28654I$	0
$u = -0.913525 - 0.821468I$ $a = -1.23296 - 0.92411I$ $b = 1.62458 - 1.03417I$	$-6.51331 + 4.28654I$	0
$u = 0.873838 + 0.868456I$ $a = 0.240797 + 0.078349I$ $b = 0.061011 - 0.590277I$	$-8.40697 + 1.63722I$	0
$u = 0.873838 - 0.868456I$ $a = 0.240797 - 0.078349I$ $b = 0.061011 + 0.590277I$	$-8.40697 - 1.63722I$	0
$u = 0.860026 + 0.884880I$ $a = -1.88264 + 0.33095I$ $b = 0.51218 - 3.50291I$	$-11.31680 - 0.57038I$	0
$u = 0.860026 - 0.884880I$ $a = -1.88264 - 0.33095I$ $b = 0.51218 + 3.50291I$	$-11.31680 + 0.57038I$	0
$u = -0.865887 + 0.882160I$ $a = -0.996542 + 0.730783I$ $b = 1.20983 + 0.96608I$	$-5.55893 + 3.28453I$	0
$u = -0.865887 - 0.882160I$ $a = -0.996542 - 0.730783I$ $b = 1.20983 - 0.96608I$	$-5.55893 - 3.28453I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.946485+0.806200I$ $a=\ \ 0.601050-1.153690I$ $b=-2.39169+0.76305I$	$-2.75258-5.01184I$	0
$u=-0.946485-0.806200I$ $a=\ \ 0.601050+1.153690I$ $b=-2.39169-0.76305I$	$-2.75258+5.01184I$	0
$u=-0.536657+0.519170I$ $a=\ \ 0.199660-0.585956I$ $b=-0.726972-0.579075I$	$-1.58168-1.49511I$	$-1.20774+4.62157I$
$u=-0.536657-0.519170I$ $a=\ \ 0.199660+0.585956I$ $b=-0.726972+0.579075I$	$-1.58168+1.49511I$	$-1.20774-4.62157I$
$u=\ \ 0.945080+0.838821I$ $a=\ \ 0.142467+0.191244I$ $b=\ \ 0.447571-0.324800I$	$-8.18097+4.69776I$	0
$u=\ \ 0.945080-0.838821I$ $a=\ \ 0.142467-0.191244I$ $b=\ \ 0.447571+0.324800I$	$-8.18097-4.69776I$	0
$u=-0.391118+0.616467I$ $a=\ \ 2.19814+0.27289I$ $b=-1.22053-1.25849I$	$-4.57237-0.27043I$	$-5.36990-0.41408I$
$u=-0.391118-0.616467I$ $a=\ \ 2.19814-0.27289I$ $b=-1.22053+1.25849I$	$-4.57237+0.27043I$	$-5.36990+0.41408I$
$u=-0.958623+0.842313I$ $a=-0.725274+1.015570I$ $b=\ \ 2.36009-0.57501I$	$-5.26401-9.67296I$	0
$u=-0.958623-0.842313I$ $a=-0.725274-1.015570I$ $b=\ \ 2.36009+0.57501I$	$-5.26401+9.67296I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.963009 + 0.840863I$ $a = 0.36986 - 1.89136I$ $b = 3.04124 + 2.99193I$	$-10.99000 + 6.96104I$	0
$u = 0.963009 - 0.840863I$ $a = 0.36986 + 1.89136I$ $b = 3.04124 - 2.99193I$	$-10.99000 - 6.96104I$	0
$u = 0.984748 + 0.822057I$ $a = -0.07028 + 1.64656I$ $b = -2.82195 - 2.36983I$	$-5.36286 + 11.19750I$	0
$u = 0.984748 - 0.822057I$ $a = -0.07028 - 1.64656I$ $b = -2.82195 + 2.36983I$	$-5.36286 - 11.19750I$	0
$u = 0.974104 + 0.834723I$ $a = -0.113786 - 0.235277I$ $b = -0.526723 + 0.214120I$	$-10.1908 + 9.9724I$	0
$u = 0.974104 - 0.834723I$ $a = -0.113786 + 0.235277I$ $b = -0.526723 - 0.214120I$	$-10.1908 - 9.9724I$	0
$u = -0.308065 + 0.638255I$ $a = -0.510667 + 0.784027I$ $b = 0.745034 + 0.663909I$	$-4.22284 + 2.28384I$	$-5.40942 - 1.60159I$
$u = -0.308065 - 0.638255I$ $a = -0.510667 - 0.784027I$ $b = 0.745034 - 0.663909I$	$-4.22284 - 2.28384I$	$-5.40942 + 1.60159I$
$u = 0.911762 + 0.918432I$ $a = -0.149456 + 0.035449I$ $b = 0.118572 + 0.297180I$	$-13.05620 + 3.87938I$	0
$u = 0.911762 - 0.918432I$ $a = -0.149456 - 0.035449I$ $b = 0.118572 - 0.297180I$	$-13.05620 - 3.87938I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.000930 + 0.829713I$ $a = -0.09785 - 1.69655I$ $b = 2.99495 + 2.10759I$	$-8.2816 + 16.9931I$	0
$u = 1.000930 - 0.829713I$ $a = -0.09785 + 1.69655I$ $b = 2.99495 - 2.10759I$	$-8.2816 - 16.9931I$	0
$u = 0.430117 + 0.545073I$ $a = 1.23174 + 0.88326I$ $b = -0.297726 + 0.130654I$	$1.21330 - 2.82397I$	$1.38406 + 2.73602I$
$u = 0.430117 - 0.545073I$ $a = 1.23174 - 0.88326I$ $b = -0.297726 - 0.130654I$	$1.21330 + 2.82397I$	$1.38406 - 2.73602I$
$u = -0.201484 + 0.659185I$ $a = -1.98860 - 0.38825I$ $b = 1.034070 + 0.728447I$	$-0.11479 + 3.13185I$	$-0.06207 - 2.62342I$
$u = -0.201484 - 0.659185I$ $a = -1.98860 + 0.38825I$ $b = 1.034070 - 0.728447I$	$-0.11479 - 3.13185I$	$-0.06207 + 2.62342I$
$u = 0.671898 + 0.151886I$ $a = 2.07226 + 2.12966I$ $b = -1.39171 - 1.41963I$	$-0.854990 + 0.184345I$	$6.5747 - 15.0325I$
$u = 0.671898 - 0.151886I$ $a = 2.07226 - 2.12966I$ $b = -1.39171 + 1.41963I$	$-0.854990 - 0.184345I$	$6.5747 + 15.0325I$
$u = 0.957675 + 0.896988I$ $a = -0.0122210 - 0.1384930I$ $b = -0.284882 + 0.043144I$	$-12.91010 + 2.80229I$	0
$u = 0.957675 - 0.896988I$ $a = -0.0122210 + 0.1384930I$ $b = -0.284882 - 0.043144I$	$-12.91010 - 2.80229I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.668467$ $a = -0.668479$ $b = 0.148148$	0.907840	11.5600
$u = 0.194109 + 0.511596I$ $a = -1.65256 - 0.97107I$ $b = 0.476294 + 0.186820I$	$1.99178 + 1.65996I$	$2.30944 - 4.12201I$
$u = 0.194109 - 0.511596I$ $a = -1.65256 + 0.97107I$ $b = 0.476294 - 0.186820I$	$1.99178 - 1.65996I$	$2.30944 + 4.12201I$
$u = 0.0766424$ $a = 7.27869$ $b = -0.661524$	-1.20372	-8.99890

II. $\boldsymbol{I_2^u = \langle 2au - u^2 + b + 2a,\ u^2a + a^2 - au + u^2 + u - 1,\ u^3 + u^2 - 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2u^2a - 7au - 6u^2 - 9a + u + 5$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.877439 + 0.744862I$ $a = 0.447279 + 0.744862I$ $b = 1.21508 - 2.15605I$	$-5.65624I$	$3.29784 + 4.97572I$
$u = -0.877439 + 0.744862I$ $a = -1.53980 + 1.30714I$ $b = 2.53980 + 0.66632I$	$-4.13758 - 2.82812I$	$11.29331 + 8.29280I$
$u = -0.877439 - 0.744862I$ $a = 0.447279 - 0.744862I$ $b = 1.21508 + 2.15605I$	$5.65624I$	$3.29784 - 4.97572I$
$u = -0.877439 - 0.744862I$ $a = -1.53980 - 1.30714I$ $b = 2.53980 - 0.66632I$	$-4.13758 + 2.82812I$	$11.29331 - 8.29280I$
$u = 0.754878$ $a = 0.092519 + 0.562280I$ $b = 0.24512 - 1.97346I$	$4.13758 + 2.82812I$	$0.90884 - 8.67250I$
$u = 0.754878$ $a = 0.092519 - 0.562280I$ $b = 0.24512 + 1.97346I$	$4.13758 - 2.82812I$	$0.90884 + 8.67250I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 18u^4 - 7u^3 - 7u^2 + 18u + 27$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^5$
c_3, c_6	y^5
c_5, c_8, c_9 c_{10}, c_{12}	$y^5 + 7y^4 + 16y^3 + 13y^2 + 3y - 1$
c_7, c_{11}	$y^5 - y^4 + 4y^3 - 3y^2 + 3y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.758138 + 0.584034I$ $a = -0.442614 + 1.051550I$ $b = \quad 1.270390 - 0.413868I$	$-3.46474 - 2.21397I$	$-3.79538 + 3.60694I$
$u = -0.758138 - 0.584034I$ $a = -0.442614 - 1.051550I$ $b = \quad 1.270390 + 0.413868I$	$-3.46474 + 2.21397I$	$-3.79538 - 3.60694I$
$u = \quad 0.935538 + 0.903908I$ $a = \quad 0.304213 + 0.337334I$ $b = -0.857040 + 0.196802I$	$-12.60320 + 3.33174I$	$2.32599 - 3.47010I$
$u = \quad 0.935538 - 0.903908I$ $a = \quad 0.304213 - 0.337334I$ $b = -0.857040 - 0.196802I$	$-12.60320 - 3.33174I$	$2.32599 + 3.47010I$
$u = \quad 0.645200$ $a = -3.72320$ $b = \quad 2.17329$	-0.762751	36.9390

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2u^2 - 3u + 2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_4	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.877439+0.744862I$ $a=-0.662359-0.562280I$ $b=-1.09252+2.05200I$	0	$4.20216+0.37970I$
$u=-0.877439-0.744862I$ $a=-0.662359+0.562280I$ $b=-1.09252-2.05200I$	0	$4.20216-0.37970I$
$u=\ 0.754878$ $a=\ 1.32472$ $b=\ 0.185037$	0	-1.40430

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^5)(u^3-u^2+2u-1)^3(u^{94}+47u^{93}+\cdots+2083u+1)$
c_2	$((u-1)^5)(u^3+u^2-1)^3(u^{94}-9u^{93}+\cdots+37u+1)$
c_3	$u^5(u^3-u^2+2u-1)^3(u^{94}-4u^{93}+\cdots+320u-32)$
c_4	$((u+1)^5)(u^3-u^2+1)^3(u^{94}-9u^{93}+\cdots+37u+1)$
c_5	$u^9(u^5+u^4+\cdots+3u+1)(u^{94}+2u^{93}+\cdots-2560u-512)$
c_6	$u^5(u^3+u^2+2u+1)^3(u^{94}-4u^{93}+\cdots+320u-32)$
c_7	$((u^3-u^2+1)^3)(u^5+u^4-u^2+u+1)(u^{94}-5u^{93}+\cdots-15u+1)$
c_8	$u^9(u^5-u^4+\cdots+3u-1)(u^{94}+2u^{93}+\cdots-2560u-512)$
c_9, c_{10}	$(u^3+u^2+2u+1)^3(u^5+u^4+4u^3+3u^2+3u+1)$ $\cdot\,(u^{94}-23u^{93}+\cdots-185u+1)$
c_{11}	$((u^3+u^2-1)^3)(u^5-u^4+u^2+u-1)(u^{94}-5u^{93}+\cdots-15u+1)$
c_{12}	$(u^3-u^2+2u-1)^3(u^5-u^4+4u^3-3u^2+3u-1)$ $\cdot\,(u^{94}-23u^{93}+\cdots-185u+1)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^5)(y^3+3y^2+2y-1)^3(y^{94}+9y^{93}+\cdots-4301459y+1)$
c_2, c_4	$((y-1)^5)(y^3-y^2+2y-1)^3(y^{94}-47y^{93}+\cdots-2083y+1)$
c_3, c_6	$y^5(y^3+3y^2+2y-1)^3(y^{94}+42y^{93}+\cdots-37376y+1024)$
c_5, c_8	$y^9(y^5+7y^4+16y^3+13y^2+3y-1)$ $\cdot\,(y^{94}+56y^{93}+\cdots+3801088y+262144)$
c_7, c_{11}	$(y^3-y^2+2y-1)^3(y^5-y^4+4y^3-3y^2+3y-1)$ $\cdot\,(y^{94}-23y^{93}+\cdots-185y+1)$
c_9, c_{10}, c_{12}	$(y^3+3y^2+2y-1)^3(y^5+7y^4+16y^3+13y^2+3y-1)$ $\cdot\,(y^{94}+101y^{93}+\cdots-28969y+1)$