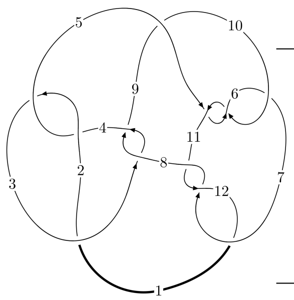
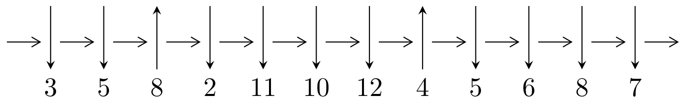
$12n_{0247}$ ($K12n_{0247}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -3u^{17} + 3u^{16} + \cdots + 32b + 11,\ 29u^{17} + 7u^{16} + \cdots + 64a + 79,\ u^{18} + 13u^{16} + \cdots + u - 1\rangle$$
$$I_2^u = \langle -345563974u^{19} - 637671531u^{18} + \cdots + 37617451161b + 3368246020,$$
$$21843240461u^{19} + 28442594981u^{18} + \cdots + 63949667737a - 48916675361,$$
$$u^{20} + 2u^{19} + \cdots - 4u + 17\rangle$$
$$I_3^u = \langle b + 1,\ u^2 + 2a + u + 3,\ u^3 + 2u - 1\rangle$$
$$I_4^u = \langle a^2u - 2a^2 - 4au + 5b + 3a - 5,\ a^3 + 3a^2u - 2a^2 - au - a - u - 2,\ u^2 + 1\rangle$$
$$I_5^u = \langle b + 1,\ u^3 + u^2 + a + u + 2,\ u^4 + u^3 + 2u^2 + 2u + 1\rangle$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 51 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. $\boldsymbol{I_1^u = \langle -3u^{17} + 3u^{16} + \cdots + 32b + 11,\ 29u^{17} + 7u^{16} + \cdots + 64a + 79,\ u^{18} + 13u^{16} + \cdots + u - 1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -0.453125u^{17} - 0.109375u^{16} + \cdots - 5.84375u - 1.23438 \\ 0.0937500u^{17} - 0.0937500u^{16} + \cdots - 0.812500u - 0.343750 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.359375u^{17} - 0.203125u^{16} + \cdots - 6.65625u - 1.57813 \\ 0.0937500u^{17} - 0.0937500u^{16} + \cdots - 0.812500u - 0.343750 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^3 - 2u \\ -\frac{1}{8}u^{16} - \frac{3}{2}u^{14} + \cdots + \frac{7}{8}u + \frac{1}{8} \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.640625u^{17} - 0.296875u^{16} + \cdots - 5.59375u - 1.17188 \\ -0.406250u^{17} - 0.0937500u^{16} + \cdots - 0.562500u - 0.843750 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^3 + 2u \\ u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -1 \\ \frac{1}{8}u^{17} + \frac{3}{2}u^{15} + \cdots - \frac{23}{8}u^2 - \frac{1}{8}u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u \\ -\frac{1}{8}u^{16} - \frac{3}{2}u^{14} + \cdots + \frac{7}{8}u + \frac{1}{8} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{229}{128}u^{17} - \frac{33}{128}u^{16} + \cdots + \frac{427}{64}u - \frac{505}{128}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{18} + 4u^{17} + \cdots + 257u + 16$
c_2, c_4	$u^{18} - 4u^{17} + \cdots + 13u - 4$
c_3, c_8	$u^{18} + 3u^{17} + \cdots + 232u + 32$
c_5, c_6, c_7 c_{10}, c_{11}, c_{12}	$u^{18} + 13u^{16} + \cdots + u - 1$
c_9	$u^{18} - 6u^{17} + \cdots - 256u - 256$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{18} + 24y^{17} + \cdots - 22945y + 256$
c_2, c_4	$y^{18} - 4y^{17} + \cdots - 257y + 16$
c_3, c_8	$y^{18} - 21y^{17} + \cdots - 10560y + 1024$
c_5, c_6, c_7 c_{10}, c_{11}, c_{12}	$y^{18} + 26y^{17} + \cdots - 11y + 1$
c_9	$y^{18} + 26y^{17} + \cdots - 98304y + 65536$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.513277 + 0.615531I$ $a = 0.69273 - 1.30024I$ $b = 0.926284 + 0.896765I$	$5.03715 - 4.73308I$	$-6.17449 + 6.98654I$
$u = 0.513277 - 0.615531I$ $a = 0.69273 + 1.30024I$ $b = 0.926284 - 0.896765I$	$5.03715 + 4.73308I$	$-6.17449 - 6.98654I$
$u = 0.322723 + 0.641738I$ $a = -0.511493 + 0.469718I$ $b = 0.907757 - 0.852129I$	$5.02936 + 1.72315I$	$-6.30423 + 2.05854I$
$u = 0.322723 - 0.641738I$ $a = -0.511493 - 0.469718I$ $b = 0.907757 + 0.852129I$	$5.02936 - 1.72315I$	$-6.30423 - 2.05854I$
$u = 0.20594 + 1.41832I$ $a = 0.550117 - 0.463999I$ $b = 0.820288 + 0.298128I$	$8.20719 - 5.81488I$	$1.58758 + 8.21476I$
$u = 0.20594 - 1.41832I$ $a = 0.550117 + 0.463999I$ $b = 0.820288 - 0.298128I$	$8.20719 + 5.81488I$	$1.58758 - 8.21476I$
$u = -0.559591$ $a = 1.08527$ $b = 0.320915$	-1.10260	-8.67790
$u = -0.274931 + 0.275799I$ $a = 0.85438 - 1.34319I$ $b = -0.518997 + 0.250386I$	$-0.591534 + 0.915522I$	$-8.76058 - 7.51611I$
$u = -0.274931 - 0.275799I$ $a = 0.85438 + 1.34319I$ $b = -0.518997 - 0.250386I$	$-0.591534 - 0.915522I$	$-8.76058 + 7.51611I$
$u = -0.04969 + 1.63263I$ $a = -0.017613 - 0.874719I$ $b = -1.39382 + 0.44407I$	$9.47411 + 1.71565I$	$-2.49915 - 0.68525I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.04969 - 1.63263I$ $a = -0.017613 + 0.874719I$ $b = -1.39382 - 0.44407I$	$9.47411 - 1.71565I$	$-2.49915 + 0.68525I$
$u = -0.39884 + 1.63329I$ $a = 0.30757 + 1.53003I$ $b = 1.25592 - 0.96097I$	$-19.6148 + 12.8943I$	$-2.00648 - 5.58395I$
$u = -0.39884 - 1.63329I$ $a = 0.30757 - 1.53003I$ $b = 1.25592 + 0.96097I$	$-19.6148 - 12.8943I$	$-2.00648 + 5.58395I$
$u = 0.16134 + 1.67469I$ $a = 0.135382 + 1.232190I$ $b = -0.453358 - 1.088430I$	$12.98160 - 4.39049I$	$-1.06537 + 2.81298I$
$u = 0.16134 - 1.67469I$ $a = 0.135382 - 1.232190I$ $b = -0.453358 + 1.088430I$	$12.98160 + 4.39049I$	$-1.06537 - 2.81298I$
$u = 0.264194$ $a = -3.30167$ $b = -1.07735$	-2.03333	1.10900
$u = -0.33212 + 1.72012I$ $a = -0.652868 - 0.820297I$ $b = 0.83415 + 1.30011I$	$-18.1326 + 4.7805I$	$-0.86783 - 1.39495I$
$u = -0.33212 - 1.72012I$ $a = -0.652868 + 0.820297I$ $b = 0.83415 - 1.30011I$	$-18.1326 - 4.7805I$	$-0.86783 + 1.39495I$

II. $\boldsymbol{I^u_2 =}$
$\boldsymbol{\langle -3.46\times10^{8}u^{19}-6.38\times10^{8}u^{18}+\cdots+3.76\times10^{9}b+3.37\times10^{9},\ 2.18\times10^{10}u^{19}+ 2.84\times10^{10}u^{18}+\cdots+6.39\times10^{10}a-4.89\times10^{10},\ u^{20}+2u^{19}+\cdots-4u+17\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-0.341569u^{19}-0.444765u^{18}+\cdots-6.80195u+0.764925\\0.0918627u^{19}+0.169515u^{18}+\cdots+1.48236u-0.895395\end{pmatrix}$$
$$a_6 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-0.249707u^{19}-0.275251u^{18}+\cdots-5.31959u-0.130470\\0.0918627u^{19}+0.169515u^{18}+\cdots+1.48236u-0.895395\end{pmatrix}$$
$$a_1 = \begin{pmatrix}0.0321030u^{19}+0.154890u^{18}+\cdots-1.20856u+1.30329\\0.0116403u^{19}+0.0303223u^{18}+\cdots-0.600017u+0.446055\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-0.274136u^{19}-0.394973u^{18}+\cdots-4.73485u-0.948502\\0.105172u^{19}+0.211195u^{18}+\cdots+1.77125u-1.07336\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$
$$a_7 = \begin{pmatrix}u^2+1\\u^4+2u^2\end{pmatrix}$$
$$a_9 = \begin{pmatrix}u^3+2u\\u^3+u\end{pmatrix}$$
$$a_8 = \begin{pmatrix}0.0540994u^{19}+0.0710831u^{18}+\cdots+0.210536u+1.58028\\-0.0628232u^{19}-0.0347199u^{18}+\cdots-1.06815u+1.63097\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-0.0217078u^{19}+0.0194076u^{18}+\cdots-3.38491u+1.15498\\-0.0538109u^{19}-0.135483u^{18}+\cdots-0.176349u-0.148305\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{687646779}{3761745161}u^{19}+\frac{3390901343}{3761745161}u^{18}+\cdots+\frac{12009014830}{3761745161}u-\frac{7942008906}{3761745161}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{10} + u^9 + 10u^8 + 11u^7 + 26u^6 + 30u^5 + u^4 - 14u^3 + 3u^2 - 2u + 1)^2$
c_2, c_4	$(u^{10} - 3u^9 + 4u^8 + u^7 - 6u^6 + 6u^5 + u^4 - 2u^3 + 3u^2 - 2u + 1)^2$
c_3, c_8	$(u^{10} - u^9 - 7u^8 + 8u^7 + 13u^6 - 14u^5 - 2u^4 - 2u^3 + 13u^2 - 12u + 4)^2$
c_5, c_6, c_7 c_{10}, c_{11}, c_{12}	$u^{20} + 2u^{19} + \cdots - 4u + 17$
c_9	$(u^{10} + 2u^9 + \cdots - 21u + 17)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{10} + 19y^9 + \cdots + 2y + 1)^2$
c_2, c_4	$(y^{10} - y^9 + 10y^8 - 11y^7 + 26y^6 - 30y^5 + y^4 + 14y^3 + 3y^2 + 2y + 1)^2$
c_3, c_8	$(y^{10} - 15y^9 + \cdots - 40y + 16)^2$
c_5, c_6, c_7 c_{10}, c_{11}, c_{12}	$y^{20} + 18y^{19} + \cdots + 1480y + 289$
c_9	$(y^{10} + 26y^9 + \cdots + 2925y + 289)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.598226 + 0.786865I$ $a = 0.005030 + 0.155416I$ $b = -0.076965 - 0.657059I$	$4.43566 - 1.46073I$	$-1.34069 + 3.28644I$
$u = 0.598226 - 0.786865I$ $a = 0.005030 - 0.155416I$ $b = -0.076965 + 0.657059I$	$4.43566 + 1.46073I$	$-1.34069 - 3.28644I$
$u = -0.014778 + 1.179270I$ $a = 0.90480 + 1.65650I$ $b = -1.016000 - 0.211624I$	$1.39065 - 0.79591I$	$-8.77960 - 0.81155I$
$u = -0.014778 - 1.179270I$ $a = 0.90480 - 1.65650I$ $b = -1.016000 + 0.211624I$	$1.39065 + 0.79591I$	$-8.77960 + 0.81155I$
$u = -1.077400 + 0.591320I$ $a = 0.927031 + 0.754940I$ $b = 1.12142 - 1.03617I$	$12.6890 + 7.4068I$	$-3.25674 - 4.41038I$
$u = -1.077400 - 0.591320I$ $a = 0.927031 - 0.754940I$ $b = 1.12142 + 1.03617I$	$12.6890 - 7.4068I$	$-3.25674 + 4.41038I$
$u = -1.033740 + 0.754404I$ $a = -0.0441939 - 0.0300635I$ $b = 0.98889 + 1.13481I$	$13.15130 - 0.50253I$	$-2.50299 - 0.08773I$
$u = -1.033740 - 0.754404I$ $a = -0.0441939 + 0.0300635I$ $b = 0.98889 - 1.13481I$	$13.15130 + 0.50253I$	$-2.50299 + 0.08773I$
$u = -0.220229 + 1.263180I$ $a = 0.634760 + 0.673705I$ $b = 0.482659 - 0.410726I$	$2.87696 + 2.81207I$	$-3.11998 - 4.64391I$
$u = -0.220229 - 1.263180I$ $a = 0.634760 - 0.673705I$ $b = 0.482659 + 0.410726I$	$2.87696 - 2.81207I$	$-3.11998 + 4.64391I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.661189 + 0.252982I$ $a = 1.093740 + 0.337893I$ $b = 0.482659 + 0.410726I$	$2.87696 - 2.81207I$	$-3.11998 + 4.64391I$
$u = 0.661189 - 0.252982I$ $a = 1.093740 - 0.337893I$ $b = 0.482659 - 0.410726I$	$2.87696 + 2.81207I$	$-3.11998 - 4.64391I$
$u = -0.208282 + 0.650238I$ $a = -3.22497 - 1.66304I$ $b = -1.016000 + 0.211624I$	$1.39065 + 0.79591I$	$-8.77960 + 0.81155I$
$u = -0.208282 - 0.650238I$ $a = -3.22497 + 1.66304I$ $b = -1.016000 - 0.211624I$	$1.39065 - 0.79591I$	$-8.77960 - 0.81155I$
$u = 0.065595 + 1.361450I$ $a = 0.719320 - 1.166450I$ $b = -0.076965 + 0.657059I$	$4.43566 + 1.46073I$	$-1.34069 - 3.28644I$
$u = 0.065595 - 1.361450I$ $a = 0.719320 + 1.166450I$ $b = -0.076965 - 0.657059I$	$4.43566 - 1.46073I$	$-1.34069 + 3.28644I$
$u = 0.17643 + 1.61460I$ $a = -0.17553 - 1.65533I$ $b = 1.12142 + 1.03617I$	$12.6890 - 7.4068I$	$-3.25674 + 4.41038I$
$u = 0.17643 - 1.61460I$ $a = -0.17553 + 1.65533I$ $b = 1.12142 - 1.03617I$	$12.6890 + 7.4068I$	$-3.25674 - 4.41038I$
$u = 0.05299 + 1.63807I$ $a = -0.63412 + 1.33106I$ $b = 0.98889 - 1.13481I$	$13.15130 + 0.50253I$	$-2.50299 + 0.08773I$
$u = 0.05299 - 1.63807I$ $a = -0.63412 - 1.33106I$ $b = 0.98889 + 1.13481I$	$13.15130 - 0.50253I$	$-2.50299 - 0.08773I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{25}{4}u^2 - \frac{11}{4}u - \frac{71}{4}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.22670 + 1.46771I$ $a = -0.335258 - 0.401127I$ $b = -1.00000$	$7.79580 + 5.13794I$	$-3.98417 + 0.12290I$
$u = -0.22670 - 1.46771I$ $a = -0.335258 + 0.401127I$ $b = -1.00000$	$7.79580 - 5.13794I$	$-3.98417 - 0.12290I$
$u = \quad 0.453398$ $a = -1.82948$ $b = -1.00000$	-2.43213	-20.2820

IV.

$\boldsymbol{I_4^u = \langle a^2u - 2a^2 - 4au + 5b + 3a - 5,\ a^3 + 3a^2u - 2a^2 - au - a - u - 2,\ u^2 + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{4}{5}a^2u + \frac{8}{5}a^2 + \frac{16}{5}au - \frac{12}{5}a$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.000000I$ $a = 0.684841 - 1.082500I$ $b = 0.877439 + 0.744862I$	$6.31400 - 2.82812I$	$-0.49024 + 2.97945I$
$u = 1.000000I$ $a = -0.439718 + 0.407221I$ $b = 0.877439 - 0.744862I$	$6.31400 + 2.82812I$	$-0.49024 - 2.97945I$
$u = 1.000000I$ $a = 1.75488 - 2.32472I$ $b = -0.754878$	2.17641	$-7.01951 + 0.I$
$u = -1.000000I$ $a = 0.684841 + 1.082500I$ $b = 0.877439 - 0.744862I$	$6.31400 + 2.82812I$	$-0.49024 - 2.97945I$
$u = -1.000000I$ $a = -0.439718 - 0.407221I$ $b = 0.877439 + 0.744862I$	$6.31400 - 2.82812I$	$-0.49024 + 2.97945I$
$u = -1.000000I$ $a = 1.75488 + 2.32472I$ $b = -0.754878$	2.17641	$-7.01951 + 0.I$

V. $\boldsymbol{I^u_5 = \langle b+1,\ u^3+u^2+a+u+2,\ u^4+u^3+2u^2+2u+1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^3-4u-9$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.621744 + 0.440597I$ $a = -1.69244 - 0.31815I$ $b = -1.00000$	$1.64493 + 2.02988I$	$-7.00000 - 3.46410I$
$u = -0.621744 - 0.440597I$ $a = -1.69244 + 0.31815I$ $b = -1.00000$	$1.64493 - 2.02988I$	$-7.00000 + 3.46410I$
$u = 0.121744 + 1.306620I$ $a = 0.192440 + 0.547877I$ $b = -1.00000$	$1.64493 - 2.02988I$	$-7.00000 + 3.46410I$
$u = 0.121744 - 1.306620I$ $a = 0.192440 - 0.547877I$ $b = -1.00000$	$1.64493 + 2.02988I$	$-7.00000 - 3.46410I$

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^7(u^3-u^2+2u-1)^2$ $\cdot(u^{10}+u^9+10u^8+11u^7+26u^6+30u^5+u^4-14u^3+3u^2-2u+1)^2$ $\cdot(u^{18}+4u^{17}+\cdots+257u+16)$
c_2	$(u-1)^7(u^3+u^2-1)^2$ $\cdot(u^{10}-3u^9+4u^8+u^7-6u^6+6u^5+u^4-2u^3+3u^2-2u+1)^2$ $\cdot(u^{18}-4u^{17}+\cdots+13u-4)$
c_3, c_8	$u^7(u^6-3u^4+2u^2+1)$ $\cdot(u^{10}-u^9-7u^8+8u^7+13u^6-14u^5-2u^4-2u^3+13u^2-12u+4)^2$ $\cdot(u^{18}+3u^{17}+\cdots+232u+32)$
c_4	$(u+1)^7(u^3-u^2+1)^2$ $\cdot(u^{10}-3u^9+4u^8+u^7-6u^6+6u^5+u^4-2u^3+3u^2-2u+1)^2$ $\cdot(u^{18}-4u^{17}+\cdots+13u-4)$
c_5, c_6, c_7	$((u^2+1)^3)(u^3+2u-1)(u^4+u^3+\cdots+2u+1)(u^{18}+13u^{16}+\cdots+u-1)$ $\cdot(u^{20}+2u^{19}+\cdots-4u+17)$
c_9	$u^6(u^2-u+1)^2(u^3+3u^2+5u+2)(u^{10}+2u^9+\cdots-21u+17)^2$ $\cdot(u^{18}-6u^{17}+\cdots-256u-256)$
c_{10}, c_{11}, c_{12}	$((u^2+1)^3)(u^3+2u+1)(u^4-u^3+\cdots-2u+1)(u^{18}+13u^{16}+\cdots+u-1)$ $\cdot(u^{20}+2u^{19}+\cdots-4u+17)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^7)(y^3+3y^2+2y-1)^2(y^{10}+19y^9+\cdots+2y+1)^2$ $\cdot\,(y^{18}+24y^{17}+\cdots-22945y+256)$
c_2, c_4	$(y-1)^7(y^3-y^2+2y-1)^2$ $\cdot\,(y^{10}-y^9+10y^8-11y^7+26y^6-30y^5+y^4+14y^3+3y^2+2y+1)^2$ $\cdot\,(y^{18}-4y^{17}+\cdots-257y+16)$
c_3, c_8	$y^7(y^3-3y^2+2y+1)^2(y^{10}-15y^9+\cdots-40y+16)^2$ $\cdot\,(y^{18}-21y^{17}+\cdots-10560y+1024)$
c_5, c_6, c_7 c_{10}, c_{11}, c_{12}	$(y+1)^6(y^3+4y^2+4y-1)(y^4+3y^3+2y^2+1)$ $\cdot\,(y^{18}+26y^{17}+\cdots-11y+1)(y^{20}+18y^{19}+\cdots+1480y+289)$
c_9	$y^6(y^2+y+1)^2(y^3+y^2+13y-4)(y^{10}+26y^9+\cdots+2925y+289)^2$ $\cdot\,(y^{18}+26y^{17}+\cdots-98304y+65536)$