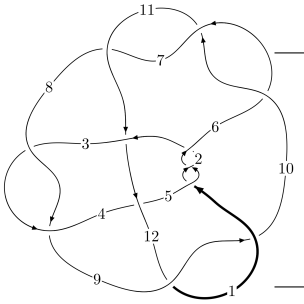
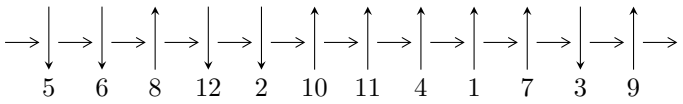
$12a_{1226}$ $(K12a_{1226})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle 4.98945 \times 10^{144} u^{84} - 1.37087 \times 10^{145} u^{83} + \cdots + 1.92650 \times 10^{144} b - 2.91725 \times 10^{146}, \\
&\quad 1.95093 \times 10^{145} u^{84} - 5.15748 \times 10^{145} u^{83} + \cdots + 1.40635 \times 10^{146} a - 2.25735 \times 10^{147}, \\
&\quad u^{85} - 4u^{84} + \cdots + 788u + 73 \rangle \\
I_2^u &= \langle -5u^{18} + 13u^{17} + \cdots + b - 4,\ -u^{17} + 2u^{16} + \cdots + a - 7u,\ u^{19} - u^{18} + \cdots + 4u + 1 \rangle \\
I_3^u &= \langle b - 1,\ -u^5 + 2u^4 + 2u^3 - 4u^2 + a - u + 2,\ u^6 - u^5 - 4u^4 + 2u^3 + 4u^2 + 1 \rangle \\
I_4^u &= \langle b - 1,\ a,\ u - 1 \rangle
\end{aligned}$$

* 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. $\boldsymbol{I_1^u = \langle 4.99 \times 10^{144} u^{84} - 1.37 \times 10^{145} u^{83} + \cdots + 1.93 \times 10^{144} b - 2.92 \times 10^{146},\ 1.95 \times 10^{145} u^{84} - 5.16 \times 10^{145} u^{83} + \cdots + 1.41 \times 10^{146} a - 2.26 \times 10^{147},\ u^{85} - 4u^{84} + \cdots + 788u + 73 \rangle}$

(i) Arc colorings

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

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

$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.138723u^{84} + 0.366728u^{83} + \cdots + 130.193u + 16.0512 \\ -2.58990u^{84} + 7.11584u^{83} + \cdots + 1749.52u + 151.427 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -2.72862u^{84} + 7.48257u^{83} + \cdots + 1879.71u + 167.478 \\ -2.58990u^{84} + 7.11584u^{83} + \cdots + 1749.52u + 151.427 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 2.92578u^{84} - 8.13708u^{83} + \cdots - 2024.72u - 177.767 \\ 2.31664u^{84} - 6.47988u^{83} + \cdots - 1619.00u - 139.768 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.385598u^{84} - 1.10673u^{83} + \cdots - 283.400u - 21.1009 \\ 3.41608u^{84} - 9.58363u^{83} + \cdots - 2437.49u - 209.431 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.561858u^{84} + 1.48323u^{83} + \cdots + 383.494u + 32.0573 \\ 2.75914u^{84} - 7.81915u^{83} + \cdots - 1999.66u - 171.708 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.715497u^{84} - 2.08191u^{83} + \cdots - 538.570u - 40.4914 \\ 1.93432u^{84} - 5.25535u^{83} + \cdots - 1247.86u - 107.161 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1.00130u^{84} - 2.85966u^{83} + \cdots - 737.962u - 59.9423 \\ 1.84070u^{84} - 5.11536u^{83} + \cdots - 1289.48u - 110.827 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6.89483u^{84} - 19.7102u^{83} + \cdots - 4933.58u - 411.467$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_5	$u^{85} + 4u^{84} + \cdots + 788u - 73$
c_3, c_8	$u^{85} + 2u^{84} + \cdots - 13u - 1$
c_4	$u^{85} - 2u^{84} + \cdots - 10671u - 1901$
c_6, c_7, c_{10}	$u^{85} - 3u^{84} + \cdots + 10u + 1$
c_9, c_{12}	$u^{85} + 9u^{84} + \cdots - 956u - 536$
c_{11}	$u^{85} + 6u^{84} + \cdots - 675913u + 208517$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5	$y^{85} - 80y^{84} + \cdots + 416398y - 5329$
c_3, c_8	$y^{85} - 72y^{84} + \cdots - 3y - 1$
c_4	$y^{85} + 16y^{84} + \cdots - 16272219y - 3613801$
c_6, c_7, c_{10}	$y^{85} - 93y^{84} + \cdots + 246y - 1$
c_9, c_{12}	$y^{85} - 63y^{84} + \cdots - 14389936y - 287296$
c_{11}	$y^{85} + 36y^{84} + \cdots + 2472814918725y - 43479339289$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.624130+0.677501I$ $a=\ \ 1.27325-0.82874I$ $b=-1.172910+0.299627I$	$5.48537-3.36947I$	0
$u=-0.624130-0.677501I$ $a=\ \ 1.27325+0.82874I$ $b=-1.172910-0.299627I$	$5.48537+3.36947I$	0
$u=-0.409379+1.002590I$ $a=-1.68599+0.21190I$ $b=\ \ 1.40263+0.44403I$	$13.5552+11.4881I$	0
$u=-0.409379-1.002590I$ $a=-1.68599-0.21190I$ $b=\ \ 1.40263-0.44403I$	$13.5552-11.4881I$	0
$u=\ \ 1.12445$ $a=\ \ 1.58307$ $b=-1.67518$	11.2991	0
$u=\ \ 0.301457+0.815530I$ $a=\ \ 1.80925+0.18621I$ $b=-1.029340+0.250303I$	$1.17315-3.20365I$	0
$u=\ \ 0.301457-0.815530I$ $a=\ \ 1.80925-0.18621I$ $b=-1.029340-0.250303I$	$1.17315+3.20365I$	0
$u=-1.149180+0.081342I$ $a=\ \ 1.03377+1.54266I$ $b=-0.850018-0.005837I$	$6.06553+5.53345I$	0
$u=-1.149180-0.081342I$ $a=\ \ 1.03377-1.54266I$ $b=-0.850018+0.005837I$	$6.06553-5.53345I$	0
$u=\ \ 1.164800+0.089757I$ $a=\ \ 0.52166-1.45972I$ $b=-0.799484-0.495047I$	$1.60587-0.73292I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.164800 - 0.089757I$ $a = 0.52166 + 1.45972I$ $b = -0.799484 + 0.495047I$	$1.60587 + 0.73292I$	0
$u = -1.16926$ $a = 0.845667$ $b = -1.78576$	6.73023	0
$u = 0.192937 + 1.154220I$ $a = -1.44238 - 0.07519I$ $b = 1.087730 - 0.364012I$	$6.71901 - 5.49463I$	0
$u = 0.192937 - 1.154220I$ $a = -1.44238 + 0.07519I$ $b = 1.087730 + 0.364012I$	$6.71901 + 5.49463I$	0
$u = -0.360617 + 0.745031I$ $a = 2.20948 - 0.41944I$ $b = -1.300800 - 0.407023I$	$6.28975 + 7.97133I$	$7.38430 - 8.02100I$
$u = -0.360617 - 0.745031I$ $a = 2.20948 + 0.41944I$ $b = -1.300800 + 0.407023I$	$6.28975 - 7.97133I$	$7.38430 + 8.02100I$
$u = -1.198080 + 0.082837I$ $a = 0.214684 + 1.075630I$ $b = -1.12156 + 0.98848I$	$5.68630 - 4.05640I$	0
$u = -1.198080 - 0.082837I$ $a = 0.214684 - 1.075630I$ $b = -1.12156 - 0.98848I$	$5.68630 + 4.05640I$	0
$u = 1.20730$ $a = 0.288478$ $b = -2.30164$	10.5815	0
$u = 0.345771 + 0.669877I$ $a = 1.28934 + 1.71832I$ $b = -1.339630 - 0.095594I$	$12.65180 - 2.38566I$	$11.28357 + 3.13973I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.345771 - 0.669877I$ $a = 1.28934 - 1.71832I$ $b = -1.339630 + 0.095594I$	$12.65180 + 2.38566I$	$11.28357 - 3.13973I$
$u = -0.369159 + 0.631904I$ $a = 1.18727 - 0.96387I$ $b = -1.314670 - 0.246770I$	$8.21278 + 1.87881I$	$10.83009 - 0.57094I$
$u = -0.369159 - 0.631904I$ $a = 1.18727 + 0.96387I$ $b = -1.314670 + 0.246770I$	$8.21278 - 1.87881I$	$10.83009 + 0.57094I$
$u = 0.395662 + 0.581191I$ $a = 1.48354 + 0.44038I$ $b = -1.60987 + 0.54830I$	$12.29370 - 1.36558I$	$11.35480 + 4.41215I$
$u = 0.395662 - 0.581191I$ $a = 1.48354 - 0.44038I$ $b = -1.60987 - 0.54830I$	$12.29370 + 1.36558I$	$11.35480 - 4.41215I$
$u = 0.252051 + 0.653041I$ $a = -0.757441 + 0.041642I$ $b = 0.067707 + 0.675510I$	$3.87059 - 1.76215I$	$3.74742 + 3.64728I$
$u = 0.252051 - 0.653041I$ $a = -0.757441 - 0.041642I$ $b = 0.067707 - 0.675510I$	$3.87059 + 1.76215I$	$3.74742 - 3.64728I$
$u = -0.323184 + 0.612844I$ $a = -1.34257 - 1.28161I$ $b = 0.014273 + 0.180616I$	$8.16304 - 3.16907I$	$8.19689 - 1.41717I$
$u = -0.323184 - 0.612844I$ $a = -1.34257 + 1.28161I$ $b = 0.014273 - 0.180616I$	$8.16304 + 3.16907I$	$8.19689 + 1.41717I$
$u = -0.910397 + 0.940971I$ $a = -0.942683 + 0.660065I$ $b = 1.261770 - 0.234880I$	$12.19520 - 5.09209I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.910397-0.940971I$ $a=-0.942683-0.660065I$ $b=\ \ 1.261770+0.234880I$	$12.19520+5.09209I$	0
$u=\ \ 1.31174$ $a=-0.512904$ $b=\ \ 1.29127$	1.49689	0
$u=\ \ 1.310290+0.142010I$ $a=-0.460124-1.144650I$ $b=\ \ 0.950477-0.477408I$	$-2.39006-2.09627I$	0
$u=\ \ 1.310290-0.142010I$ $a=-0.460124+1.144650I$ $b=\ \ 0.950477+0.477408I$	$-2.39006+2.09627I$	0
$u=-1.315430+0.140434I$ $a=-0.389970+0.923304I$ $b=\ \ 1.30169+0.95849I$	$1.18769+4.19202I$	0
$u=-1.315430-0.140434I$ $a=-0.389970-0.923304I$ $b=\ \ 1.30169-0.95849I$	$1.18769-4.19202I$	0
$u=\ \ 1.333230+0.195789I$ $a=-1.47363-1.02765I$ $b=\ \ 1.40909-0.37140I$	$1.00589-5.05324I$	0
$u=\ \ 1.333230-0.195789I$ $a=-1.47363+1.02765I$ $b=\ \ 1.40909+0.37140I$	$1.00589+5.05324I$	0
$u=-1.353310+0.168736I$ $a=-1.135850+0.671511I$ $b=\ \ 1.275170+0.382326I$	$-2.89149+2.20435I$	0
$u=-1.353310-0.168736I$ $a=-1.135850-0.671511I$ $b=\ \ 1.275170-0.382326I$	$-2.89149-2.20435I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.260065+0.576274I$ $a=-0.138226+0.392642I$ $b=-0.337232-1.153370I$	$8.20231+6.17948I$	$8.20026-7.53712I$
$u=-0.260065-0.576274I$ $a=-0.138226-0.392642I$ $b=-0.337232+1.153370I$	$8.20231-6.17948I$	$8.20026+7.53712I$
$u=-0.400208+0.472091I$ $a=-0.384579-0.514091I$ $b=\ \ 0.143077+0.872180I$	$1.90136+3.46440I$	$4.11990-8.09520I$
$u=-0.400208-0.472091I$ $a=-0.384579+0.514091I$ $b=\ \ 0.143077-0.872180I$	$1.90136-3.46440I$	$4.11990+8.09520I$
$u=\ \ 0.524761+0.282395I$ $a=\ \ 0.431371+0.231054I$ $b=-0.168767-0.371547I$	$-1.053160-0.578747I$	$-6.16527+2.76686I$
$u=\ \ 0.524761-0.282395I$ $a=\ \ 0.431371-0.231054I$ $b=-0.168767+0.371547I$	$-1.053160+0.578747I$	$-6.16527-2.76686I$
$u=\ \ 1.347350+0.409713I$ $a=\ \ 0.949410+0.561746I$ $b=-0.935806+0.242242I$	$-1.77639-1.77523I$	0
$u=\ \ 1.347350-0.409713I$ $a=\ \ 0.949410-0.561746I$ $b=-0.935806-0.242242I$	$-1.77639+1.77523I$	0
$u=-1.387010+0.261595I$ $a=\ \ 0.036469-0.262545I$ $b=\ \ 0.347098-1.080660I$	$-1.31353+5.12324I$	0
$u=-1.387010-0.261595I$ $a=\ \ 0.036469+0.262545I$ $b=\ \ 0.347098+1.080660I$	$-1.31353-5.12324I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.40272 + 0.23901I$ $a = 0.252195 + 0.345108I$ $b = 0.01364 + 1.55109I$	$2.87646 - 9.22644I$	0
$u = 1.40272 - 0.23901I$ $a = 0.252195 - 0.345108I$ $b = 0.01364 - 1.55109I$	$2.87646 + 9.22644I$	0
$u = -0.375540 + 0.431749I$ $a = 1.146050 + 0.602010I$ $b = 0.047218 - 0.523660I$	$1.96018 - 0.39806I$	$4.48273 - 0.63616I$
$u = -0.375540 - 0.431749I$ $a = 1.146050 - 0.602010I$ $b = 0.047218 + 0.523660I$	$1.96018 + 0.39806I$	$4.48273 + 0.63616I$
$u = 1.38602 + 0.37040I$ $a = -0.400754 + 0.063344I$ $b = 0.711046 + 0.385814I$	$2.31278 - 0.56245I$	0
$u = 1.38602 - 0.37040I$ $a = -0.400754 - 0.063344I$ $b = 0.711046 - 0.385814I$	$2.31278 + 0.56245I$	0
$u = 1.43721 + 0.03949I$ $a = 0.501581 + 0.307898I$ $b = -0.100119 + 0.665742I$	$-3.84830 - 1.03714I$	0
$u = 1.43721 - 0.03949I$ $a = 0.501581 - 0.307898I$ $b = -0.100119 - 0.665742I$	$-3.84830 + 1.03714I$	0
$u = 1.43195 + 0.14709I$ $a = -0.329587 - 0.361408I$ $b = 0.027993 - 1.196330I$	$-3.98333 - 5.67696I$	0
$u = 1.43195 - 0.14709I$ $a = -0.329587 + 0.361408I$ $b = 0.027993 + 1.196330I$	$-3.98333 + 5.67696I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.42782+0.30450I$ $a=\ \ 1.029350-0.806960I$ $b=-1.203740-0.522812I$	$-4.35157+7.18408I$	0
$u=-1.42782-0.30450I$ $a=\ \ 1.029350+0.806960I$ $b=-1.203740+0.522812I$	$-4.35157-7.18408I$	0
$u=-1.45967+0.09531I$ $a=-0.022628+0.249071I$ $b=-0.182505+0.900172I$	$-7.48171+2.02794I$	0
$u=-1.45967-0.09531I$ $a=-0.022628-0.249071I$ $b=-0.182505-0.900172I$	$-7.48171-2.02794I$	0
$u=-0.058099+0.526758I$ $a=-3.74437-0.86928I$ $b=\ \ 1.226770+0.248698I$	$5.43767+2.43332I$	$12.27217-3.91915I$
$u=-0.058099-0.526758I$ $a=-3.74437+0.86928I$ $b=\ \ 1.226770-0.248698I$	$5.43767-2.43332I$	$12.27217+3.91915I$
$u=-1.44411+0.28089I$ $a=\ \ 0.124422-1.264770I$ $b=-1.062120-0.060649I$	$6.90944+5.91266I$	0
$u=-1.44411-0.28089I$ $a=\ \ 0.124422+1.264770I$ $b=-1.062120+0.060649I$	$6.90944-5.91266I$	0
$u=\ \ 1.44817+0.26550I$ $a=\ \ 0.250173+0.920078I$ $b=-1.070750+0.553524I$	$2.37812-5.23342I$	0
$u=\ \ 1.44817-0.26550I$ $a=\ \ 0.250173-0.920078I$ $b=-1.070750-0.553524I$	$2.37812+5.23342I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.44320 + 0.29402I$ $a = 1.07173 + 1.00849I$ $b = -1.40089 + 0.55110I$	$0.53532 - 11.75990I$	0
$u = 1.44320 - 0.29402I$ $a = 1.07173 - 1.00849I$ $b = -1.40089 - 0.55110I$	$0.53532 + 11.75990I$	0
$u = -1.45461 + 0.24376I$ $a = 0.389692 - 0.802347I$ $b = -1.41742 - 1.00679I$	$6.34695 + 4.48091I$	0
$u = -1.45461 - 0.24376I$ $a = 0.389692 + 0.802347I$ $b = -1.41742 + 1.00679I$	$6.34695 - 4.48091I$	0
$u = 1.28916 + 0.74858I$ $a = -1.223760 - 0.579291I$ $b = 0.863011 - 0.274783I$	$2.61452 - 3.50027I$	0
$u = 1.28916 - 0.74858I$ $a = -1.223760 + 0.579291I$ $b = 0.863011 + 0.274783I$	$2.61452 + 3.50027I$	0
$u = -0.000669 + 0.479428I$ $a = -2.21076 + 0.10853I$ $b = 1.33078 - 0.51074I$	$5.30975 - 2.02687I$	$14.9012 + 3.2094I$
$u = -0.000669 - 0.479428I$ $a = -2.21076 - 0.10853I$ $b = 1.33078 + 0.51074I$	$5.30975 + 2.02687I$	$14.9012 - 3.2094I$
$u = -1.45774 + 0.44477I$ $a = -0.986710 + 0.825536I$ $b = 1.192490 + 0.605367I$	$1.39761 + 11.05220I$	0
$u = -1.45774 - 0.44477I$ $a = -0.986710 - 0.825536I$ $b = 1.192490 - 0.605367I$	$1.39761 - 11.05220I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.50394 + 0.39283I$ $a = -0.947921 - 0.892330I$ $b = 1.44979 - 0.64447I$	$7.4665 - 16.5073I$	0
$u = 1.50394 - 0.39283I$ $a = -0.947921 + 0.892330I$ $b = 1.44979 + 0.64447I$	$7.4665 + 16.5073I$	0
$u = -1.63342$ $a = 0.200193$ $b = 0.420791$	-7.19573	0
$u = 1.72107$ $a = 0.418682$ $b = -0.809091$	-3.01365	0
$u = -0.106379$ $a = 5.09497$ $b = 0.447981$	0.879411	12.9870

II. $I_2^u =$
$\langle -5u^{18}+13u^{17}+\cdots+b-4,\ -u^{17}+2u^{16}+\cdots+a-7u,\ u^{19}-u^{18}+\cdots+4u+1\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_5 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-u\\-u^3+u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-u^2+1\\-u^4+2u^2\end{pmatrix}$$
$$a_9 = \begin{pmatrix}u^{17}-2u^{16}+\cdots-4u^2+7u\\5u^{18}-13u^{17}+\cdots+12u+4\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}5u^{18}-12u^{17}+\cdots+19u+4\\5u^{18}-13u^{17}+\cdots+12u+4\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-2u^{18}+4u^{17}+\cdots-8u-2\\3u^{18}-7u^{17}+\cdots+7u^2+5u\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}3u^{18}-5u^{17}+\cdots+20u+6\\-2u^{18}+5u^{17}+\cdots-9u-1\end{pmatrix}$$
$$a_4 = \begin{pmatrix}2u^{18}-7u^{17}+\cdots-5u+2\\-3u^{18}+6u^{17}+\cdots-7u-5\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-4u^{18}+9u^{17}+\cdots-14u-1\\-4u^{18}+9u^{17}+\cdots-7u-3\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}3u^{18}-5u^{17}+\cdots+18u+6\\-u^{18}+3u^{17}+\cdots-3u^2-6u\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= 8u^{18}-12u^{17}-84u^{16}+122u^{15}+366u^{14}-508u^{13}-858u^{12}+1087u^{11}+1167u^{10}-1187u^9-913u^8+474u^7+369u^6+174u^5-43u^4-150u^3-15u^2+7u+10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$u^{19} - u^{18} + \cdots + 4u + 1$
c_3	$u^{19} + u^{18} + \cdots - u - 1$
c_4	$u^{19} + u^{18} + \cdots + u - 1$
c_5	$u^{19} + u^{18} + \cdots + 4u - 1$
c_6, c_7	$u^{19} - 2u^{18} + \cdots + 2u - 1$
c_8	$u^{19} - u^{18} + \cdots - u + 1$
c_9	$u^{19} - 3u^{18} + \cdots + 7u + 1$
c_{10}	$u^{19} + 2u^{18} + \cdots + 2u + 1$
c_{11}	$u^{19} - u^{18} + \cdots + 5u - 1$
c_{12}	$u^{19} + 3u^{18} + \cdots + 7u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5	$y^{19} - 25y^{18} + \cdots + 6y - 1$
c_3, c_8	$y^{19} - 21y^{18} + \cdots + 45y - 1$
c_4	$y^{19} + 3y^{18} + \cdots + 13y - 1$
c_6, c_7, c_{10}	$y^{19} - 22y^{18} + \cdots + 10y - 1$
c_9, c_{12}	$y^{19} - 21y^{18} + \cdots + 61y - 1$
c_{11}	$y^{19} + 3y^{18} + \cdots + 9y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.10278$ $a = 0.720093$ $b = -1.70355$	6.99800	17.7350
$u = -1.26024$ $a = 0.906514$ $b = -2.09527$	9.84855	0.542410
$u = 1.253900 + 0.227809I$ $a = -0.900344 - 0.843791I$ $b = 1.020270 - 0.265725I$	$-1.12863 - 1.33201I$	$5.39680 - 0.05843I$
$u = 1.253900 - 0.227809I$ $a = -0.900344 + 0.843791I$ $b = 1.020270 + 0.265725I$	$-1.12863 + 1.33201I$	$5.39680 + 0.05843I$
$u = -1.327440 + 0.099919I$ $a = -0.693739 + 1.130910I$ $b = 1.32837 + 0.65411I$	$0.65874 + 3.18643I$	$2.84941 - 0.30702I$
$u = -1.327440 - 0.099919I$ $a = -0.693739 - 1.130910I$ $b = 1.32837 - 0.65411I$	$0.65874 - 3.18643I$	$2.84941 + 0.30702I$
$u = -1.374240 + 0.196813I$ $a = -0.000109 - 1.119420I$ $b = -0.831567 - 0.883831I$	$4.21440 + 7.04159I$	$4.96365 - 5.87415I$
$u = -1.374240 - 0.196813I$ $a = -0.000109 + 1.119420I$ $b = -0.831567 + 0.883831I$	$4.21440 - 7.04159I$	$4.96365 + 5.87415I$
$u = -0.134296 + 0.586065I$ $a = 2.35029 + 0.60951I$ $b = -0.916608 + 0.500115I$	$8.54052 - 4.44138I$	$11.11085 + 4.14729I$
$u = -0.134296 - 0.586065I$ $a = 2.35029 - 0.60951I$ $b = -0.916608 - 0.500115I$	$8.54052 + 4.44138I$	$11.11085 - 4.14729I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ \ 1.35294 + 0.54742I$ $a = \ \ 0.862592 + 0.861954I$ $b = -0.811030 + 0.265564I$	$2.63803 - 2.91120I$	$5.09455 - 1.50399I$
$u = \ \ 1.35294 - 0.54742I$ $a = \ \ 0.862592 - 0.861954I$ $b = -0.811030 - 0.265564I$	$2.63803 + 2.91120I$	$5.09455 + 1.50399I$
$u = \ \ 0.539160$ $a = \ \ 1.08291$ $b = \ \ 0.394778$	0.237359	-2.52210
$u = -0.466068$ $a = -0.590861$ $b = -1.72859$	12.7186	13.7870
$u = -1.60823$ $a = \ \ 0.305684$ $b = \ \ 0.150405$	-7.38733	-19.5130
$u = -0.223965 + 0.281328I$ $a = -2.57318 + 2.47101I$ $b = \ \ 1.161660 - 0.354877I$	$4.49875 - 1.89485I$	$3.37367 + 0.19461I$
$u = -0.223965 - 0.281328I$ $a = -2.57318 - 2.47101I$ $b = \ \ 1.161660 + 0.354877I$	$4.49875 + 1.89485I$	$3.37367 - 0.19461I$
$u = \ \ 1.68023$ $a = -0.254506$ $b = \ \ 0.846729$	-2.79077	17.2130
$u = \ \ 1.91856$ $a = \ \ 0.739137$ $b = -0.766706$	0.749611	-6.82050

III.

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

(i) Arc colorings

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

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

$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u \\ -u^3+u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^2+1 \\ -u^4+2u^2 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} u^5-2u^4-2u^3+4u^2+u-1 \\ 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^2+1 \\ -u^4+2u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u^5-2u^4-2u^3+4u^2+u-1 \\ 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^4-2u^3-u^2+2u+1 \\ -u^5+2u^4+2u^3-3u^2-1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^3+2u^2-2 \\ -u^5+2u^4+u^3-4u^2+u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^5-3u^4-2u^3+6u^2+2u \\ -u^5+2u^3+u^2+1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_5, c_8	$y^6 - 9y^5 + 28y^4 - 34y^3 + 8y^2 + 8y + 1$
c_4	$y^6 + 7y^5 + 20y^4 - 22y^3 - 20y^2 - 20y + 1$
c_6, c_7, c_{10} c_{11}	$y^6 - y^5 - 4y^4 + 2y^3 + 4y^2 + 1$
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
$u=-1.280890+0.160943I$ $a=-0.60066+1.69666I$ $b=\ \ 1.00000$	1.64493	6.00000
$u=-1.280890-0.160943I$ $a=-0.60066-1.69666I$ $b=\ \ 1.00000$	1.64493	6.00000
$u=\ \ 1.53631$ $a=-0.857960$ $b=\ \ 1.00000$	1.64493	6.00000
$u=\ \ 0.037401+0.445898I$ $a=-2.77623+0.79561I$ $b=\ \ 1.00000$	1.64493	6.00000
$u=\ \ 0.037401-0.445898I$ $a=-2.77623-0.79561I$ $b=\ \ 1.00000$	1.64493	6.00000
$u=\ \ 1.95066$ $a=-0.388251$ $b=\ \ 1.00000$	1.64493	6.00000

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

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(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	1.64493	6.00000
$b =$ 1.00000		

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u+1)(u^6+u^5+\cdots+4u^2+1)(u^{19}-u^{18}+\cdots+4u+1)$ $\cdot(u^{85}+4u^{84}+\cdots+788u-73)$
c_3	$(u-1)(u^6-u^5+\cdots+4u^2+1)(u^{19}+u^{18}+\cdots-u-1)$ $\cdot(u^{85}+2u^{84}+\cdots-13u-1)$
c_4	$(u+1)(u^6-u^5+\cdots+4u+1)(u^{19}+u^{18}+\cdots+u-1)$ $\cdot(u^{85}-2u^{84}+\cdots-10671u-1901)$
c_5	$(u+1)(u^6+u^5+\cdots+4u^2+1)(u^{19}+u^{18}+\cdots+4u-1)$ $\cdot(u^{85}+4u^{84}+\cdots+788u-73)$
c_6, c_7	$(u+1)(u^6-u^5-2u^2+2u-1)(u^{19}-2u^{18}+\cdots+2u-1)$ $\cdot(u^{85}-3u^{84}+\cdots+10u+1)$
c_8	$(u-1)(u^6-u^5+\cdots+4u^2+1)(u^{19}-u^{18}+\cdots-u+1)$ $\cdot(u^{85}+2u^{84}+\cdots-13u-1)$
c_9	$((u-1)^7)(u^{19}-3u^{18}+\cdots+7u+1)(u^{85}+9u^{84}+\cdots-956u-536)$
c_{10}	$(u+1)(u^6-u^5-2u^2+2u-1)(u^{19}+2u^{18}+\cdots+2u+1)$ $\cdot(u^{85}-3u^{84}+\cdots+10u+1)$
c_{11}	$(u+1)(u^6-u^5-2u^2+2u-1)(u^{19}-u^{18}+\cdots+5u-1)$ $\cdot(u^{85}+6u^{84}+\cdots-675913u+208517)$
c_{12}	$((u-1)^7)(u^{19}+3u^{18}+\cdots+7u-1)(u^{85}+9u^{84}+\cdots-956u-536)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5	$(y-1)(y^6-9y^5+28y^4-34y^3+8y^2+8y+1)$ $\cdot(y^{19}-25y^{18}+\cdots+6y-1)(y^{85}-80y^{84}+\cdots+416398y-5329)$
c_3, c_8	$(y-1)(y^6-9y^5+28y^4-34y^3+8y^2+8y+1)$ $\cdot(y^{19}-21y^{18}+\cdots+45y-1)(y^{85}-72y^{84}+\cdots-3y-1)$
c_4	$(y-1)(y^6+7y^5+20y^4-22y^3-20y^2-20y+1)$ $\cdot(y^{19}+3y^{18}+\cdots+13y-1)$ $\cdot(y^{85}+16y^{84}+\cdots-16272219y-3613801)$
c_6, c_7, c_{10}	$(y-1)(y^6-y^5+\cdots+4y^2+1)(y^{19}-22y^{18}+\cdots+10y-1)$ $\cdot(y^{85}-93y^{84}+\cdots+246y-1)$
c_9, c_{12}	$((y-1)^7)(y^{19}-21y^{18}+\cdots+61y-1)$ $\cdot(y^{85}-63y^{84}+\cdots-14389936y-287296)$
c_{11}	$(y-1)(y^6-y^5+\cdots+4y^2+1)(y^{19}+3y^{18}+\cdots+9y-1)$ $\cdot(y^{85}+36y^{84}+\cdots+2472814918725y-43479339289)$