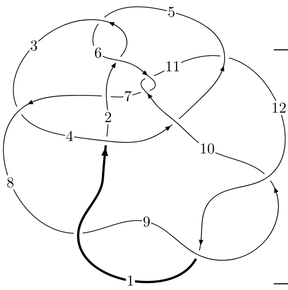
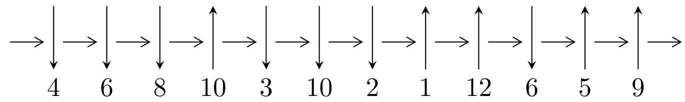
$12n_{0756}$ ($K12n_{0756}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 483881179968216u^{33} + 5103340955384197u^{32} + \cdots + 272258240478733b + 3934858860404144,$$
$$3.93486 \times 10^{15}u^{33} + 3.89285 \times 10^{16}u^{32} + \cdots + 2.45032 \times 10^{15}a + 2.14442 \times 10^{16},\ u^{34} + 11u^{33} + \cdots + 21u +$$
$$I_2^u = \langle -u^{15} + 7u^{14} - 24u^{13} + 49u^{12} - 62u^{11} + 42u^{10} - 29u^8 + 26u^7 - 10u^6 - 2u^4 + 4u^3 - au - 4u^2 + b - 1,$$
$$-u^{15}a + u^{15} + \cdots + a^2 + 4,\ u^{16} - 7u^{15} + \cdots + 4u^2 + 1\rangle$$
$$I_3^u = \langle -u^{17} + 9u^{16} + \cdots + b + 4,\ -4u^{17} + 31u^{16} + \cdots + a + 2,\ u^{18} - 8u^{17} + \cdots - 5u + 1\rangle$$

$$I_1^v = \langle a,\ b - 1,\ v - 1\rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 85 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. $I_1^u =$

$\langle 4.84\times10^{14}u^{33}+5.10\times10^{15}u^{32}+\cdots+2.72\times10^{14}b+3.93\times10^{15},\ 3.93\times10^{15}u^{33}+3.89\times10^{16}u^{32}+\cdots+2.45\times10^{15}a+2.14\times10^{16},\ u^{34}+11u^{33}+\cdots+21u+9\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_6 = \begin{pmatrix}0\\u\end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix}-1.60585u^{33}-15.8871u^{32}+\cdots-20.0006u-8.75159\\-1.77729u^{33}-18.7445u^{32}+\cdots-24.9713u-14.4527\end{pmatrix}$$

$$a_7 = \begin{pmatrix}-4.02250u^{33}-42.8304u^{32}+\cdots-54.3967u-24.3343\\-1.41713u^{33}-19.9565u^{32}+\cdots-59.1382u-36.2025\end{pmatrix}$$

$$a_8 = \begin{pmatrix}-2.60537u^{33}-22.8739u^{32}+\cdots+4.74153u+11.8682\\-1.41713u^{33}-19.9565u^{32}+\cdots-59.1382u-36.2025\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}-1.60585u^{33}-15.8871u^{32}+\cdots-20.0006u-8.75159\\-2.58296u^{33}-29.2341u^{32}+\cdots-47.8417u-30.4483\end{pmatrix}$$

$$a_5 = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}0.827038u^{33}+7.98095u^{32}+\cdots+1.94620u-0.00708657\\1.35433u^{33}+13.1869u^{32}+\cdots+12.9779u+4.34003\end{pmatrix}$$

$$a_4 = \begin{pmatrix}1.76268u^{33}+15.3291u^{32}+\cdots+13.1843u-0.885994\\4.06037u^{33}+40.2803u^{32}+\cdots+38.9023u+15.8641\end{pmatrix}$$

$$a_1 = \begin{pmatrix}1.89598u^{33}+17.9294u^{32}+\cdots+0.703240u-0.0246888\\0.323409u^{33}+7.21616u^{32}+\cdots+30.5012u+20.6792\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-0.143799u^{33}+0.732780u^{32}+\cdots+18.1991u+8.87919\\-0.768908u^{33}-8.48694u^{32}+\cdots-11.1369u-6.67054\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -\frac{146229071976183}{272258240478733}u^{33} - \frac{3883424336090664}{272258240478733}u^{32} + \cdots - \frac{16335126702306561}{272258240478733}u - \frac{14196656353437762}{272258240478733}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^{34} - u^{33} + \cdots - 14u + 1$
c_2, c_5	$u^{34} - 11u^{33} + \cdots - 21u + 9$
c_4	$u^{34} - 2u^{33} + \cdots - 298u + 241$
c_6, c_{10}	$u^{34} - 20u^{32} + \cdots - 6u^2 + 1$
c_7	$u^{34} + 29u^{33} + \cdots + 786432u + 65536$
c_8, c_9, c_{12}	$u^{34} + 8u^{33} + \cdots + 96u + 9$
c_{11}	$u^{34} - u^{33} + \cdots - 146u + 538$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^{34} - 21y^{33} + \cdots - 30y + 1$
c_2, c_5	$y^{34} + 11y^{33} + \cdots + 657y + 81$
c_4	$y^{34} + 26y^{33} + \cdots + 316558y + 58081$
c_6, c_{10}	$y^{34} - 40y^{33} + \cdots - 12y + 1$
c_7	$y^{34} + y^{33} + \cdots - 8589934592y + 4294967296$
c_8, c_9, c_{12}	$y^{34} + 36y^{33} + \cdots + 1764y + 81$
c_{11}	$y^{34} + 33y^{33} + \cdots + 1472172y + 289444$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.617972 + 0.761093I$ $a = 0.484846 + 0.412540I$ $b = 0.014360 - 0.623951I$	$-5.56320 - 2.89554I$	$-3.61991 + 4.02356I$
$u = 0.617972 - 0.761093I$ $a = 0.484846 - 0.412540I$ $b = 0.014360 + 0.623951I$	$-5.56320 + 2.89554I$	$-3.61991 - 4.02356I$
$u = 0.038145 + 1.165360I$ $a = -0.381274 + 0.286643I$ $b = 0.348587 + 0.433388I$	$1.75955 - 1.35815I$	$-1.81191 + 5.60161I$
$u = 0.038145 - 1.165360I$ $a = -0.381274 - 0.286643I$ $b = 0.348587 - 0.433388I$	$1.75955 + 1.35815I$	$-1.81191 - 5.60161I$
$u = 0.786577 + 0.094576I$ $a = 0.448211 - 0.707202I$ $b = -0.419437 + 0.513879I$	$-7.08614 + 0.56989I$	$-6.88337 - 1.97676I$
$u = 0.786577 - 0.094576I$ $a = 0.448211 + 0.707202I$ $b = -0.419437 - 0.513879I$	$-7.08614 - 0.56989I$	$-6.88337 + 1.97676I$
$u = -0.987179 + 0.772832I$ $a = -1.38314 - 0.38450I$ $b = -1.66256 + 0.68936I$	$-12.90960 + 1.80005I$	$-9.74318 - 1.73892I$
$u = -0.987179 - 0.772832I$ $a = -1.38314 + 0.38450I$ $b = -1.66256 - 0.68936I$	$-12.90960 - 1.80005I$	$-9.74318 + 1.73892I$
$u = -0.864073 + 0.947878I$ $a = 0.781162 + 0.983524I$ $b = 1.60724 + 0.10939I$	$-5.54695 + 0.38370I$	$-5.58940 + 0.I$
$u = -0.864073 - 0.947878I$ $a = 0.781162 - 0.983524I$ $b = 1.60724 - 0.10939I$	$-5.54695 - 0.38370I$	$-5.58940 + 0.I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.895563 + 0.939492I$ $a = 1.30517 + 0.59397I$ $b = 1.72689 - 0.69426I$	$-5.59448 + 6.17261I$	$-5.46977 - 4.89495I$
$u = -0.895563 - 0.939492I$ $a = 1.30517 - 0.59397I$ $b = 1.72689 + 0.69426I$	$-5.59448 - 6.17261I$	$-5.46977 + 4.89495I$
$u = -1.029620 + 0.852087I$ $a = -0.867778 - 0.816243I$ $b = -1.58899 - 0.10100I$	$-6.37716 - 4.69861I$	0
$u = -1.029620 - 0.852087I$ $a = -0.867778 + 0.816243I$ $b = -1.58899 + 0.10100I$	$-6.37716 + 4.69861I$	0
$u = 0.057536 + 0.646281I$ $a = -1.089740 - 0.207466I$ $b = -0.071382 + 0.716216I$	$1.02980 - 1.33350I$	$1.03223 + 2.72223I$
$u = 0.057536 - 0.646281I$ $a = -1.089740 + 0.207466I$ $b = -0.071382 - 0.716216I$	$1.02980 + 1.33350I$	$1.03223 - 2.72223I$
$u = -0.408705 + 0.478881I$ $a = 1.90923 + 0.05986I$ $b = 0.808975 - 0.889829I$	$-0.23675 + 2.91229I$	$7.01197 - 0.68590I$
$u = -0.408705 - 0.478881I$ $a = 1.90923 - 0.05986I$ $b = 0.808975 + 0.889829I$	$-0.23675 - 2.91229I$	$7.01197 + 0.68590I$
$u = -0.820293 + 1.120390I$ $a = -0.568921 - 0.975842I$ $b = -1.56001 - 0.16306I$	$-11.78150 + 4.90128I$	0
$u = -0.820293 - 1.120390I$ $a = -0.568921 + 0.975842I$ $b = -1.56001 + 0.16306I$	$-11.78150 - 4.90128I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.604289 + 0.013218I$ $a = -0.378817 - 0.481577I$ $b = 0.222550 + 0.296019I$	$-1.274770 - 0.384208I$	$-8.74964 + 1.21480I$
$u = 0.604289 - 0.013218I$ $a = -0.378817 + 0.481577I$ $b = 0.222550 - 0.296019I$	$-1.274770 + 0.384208I$	$-8.74964 - 1.21480I$
$u = 0.179208 + 1.386880I$ $a = -0.004281 - 0.231777I$ $b = -0.320681 + 0.047473I$	$3.60390 - 3.49818I$	0
$u = 0.179208 - 1.386880I$ $a = -0.004281 + 0.231777I$ $b = -0.320681 - 0.047473I$	$3.60390 + 3.49818I$	0
$u = -0.921912 + 1.064770I$ $a = -1.164080 - 0.612631I$ $b = -1.72549 + 0.67468I$	$-5.70649 + 11.80860I$	0
$u = -0.921912 - 1.064770I$ $a = -1.164080 + 0.612631I$ $b = -1.72549 - 0.67468I$	$-5.70649 - 11.80860I$	0
$u = -1.18586 + 0.88378I$ $a = 0.828149 + 0.702104I$ $b = 1.60257 + 0.10069I$	$-13.6579 - 8.0903I$	0
$u = -1.18586 - 0.88378I$ $a = 0.828149 - 0.702104I$ $b = 1.60257 - 0.10069I$	$-13.6579 + 8.0903I$	0
$u = 0.015596 + 0.513842I$ $a = -0.46506 - 2.17864I$ $b = -1.112220 + 0.272947I$	$-6.30723 - 0.15068I$	$-5.27928 - 0.30128I$
$u = 0.015596 - 0.513842I$ $a = -0.46506 + 2.17864I$ $b = -1.112220 - 0.272947I$	$-6.30723 + 0.15068I$	$-5.27928 + 0.30128I$

Solutions to I_1^u		$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$-0.98134+1.14252I$		
$a=$	$1.086540+0.575543I$	$-12.7634+15.8697I$	0
$b=$	$1.72383-0.67659I$		
$u=$	$-0.98134-1.14252I$		
$a=$	$1.086540-0.575543I$	$-12.7634-15.8697I$	0
$b=$	$1.72383+0.67659I$		
$u=$	$0.29522+1.50720I$		
$a=$	$0.126447+0.293981I$	$-2.05904-5.25800I$	0
$b=$	$0.405758-0.277368I$		
$u=$	$0.29522-1.50720I$		
$a=$	$0.126447-0.293981I$	$-2.05904+5.25800I$	0
$b=$	$0.405758+0.277368I$		

II. $\boldsymbol{I_2^u =}$
$\boldsymbol{\langle -u^{15}+7u^{14}+\cdots+b-1,\ -u^{15}a+u^{15}+\cdots+a^2+4,\ u^{16}-7u^{15}+\cdots+4u^2+1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} a \\ u^{15} - 7u^{14} + \cdots + au + 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^{15}a + u^{15} + \cdots + a - 1 \\ -1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^{15}a + u^{15} + \cdots + a + 4u \\ -1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} a \\ u^{15} - 7u^{14} + \cdots + au + 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^{15} + 7u^{14} + \cdots + a - u \\ 2u^{12} - 11u^{11} + \cdots + au + 1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^{15} - 7u^{14} + \cdots + a + 5u \\ -u^{15}a + 7u^{14}a + \cdots - u + 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^{15} - 7u^{14} + \cdots - a + 3u \\ -u^{13}a + 5u^{12}a + \cdots - au - 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^{15} - 7u^{14} + \cdots + a + 2u \\ u^9a - 3u^8a + \cdots + au - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{15} - 20u^{14} + 44u^{13} - 28u^{12} - 80u^{11} + 252u^{10} - 360u^9 + 348u^8 - 260u^7 + 192u^6 - 136u^5 + 116u^4 - 72u^3 + 48u^2 - 16u + 14$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^{32} - u^{31} + \cdots - 3u + 22$
c_2, c_5	$(u^{16} + 7u^{15} + \cdots + 4u^2 + 1)^2$
c_4	$u^{32} + u^{31} + \cdots - 6241u + 2648$
c_6, c_{10}	$u^{32} - u^{31} + \cdots - 935u + 566$
c_7	$(u - 1)^{32}$
c_8, c_9, c_{12}	$(u^{16} - 3u^{15} + \cdots + 4u^2 + 1)^2$
c_{11}	$u^{32} - u^{31} + \cdots - 7126u + 521$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^{32} + 3y^{31} + \cdots - 8501y + 484$
c_2, c_5	$(y^{16} + y^{15} + \cdots + 8y + 1)^2$
c_4	$y^{32} + 27y^{31} + \cdots - 50744273y + 7011904$
c_6, c_{10}	$y^{32} - 21y^{31} + \cdots + 1943323y + 320356$
c_7	$(y - 1)^{32}$
c_8, c_9, c_{12}	$(y^{16} + 17y^{15} + \cdots + 8y + 1)^2$
c_{11}	$y^{32} + 31y^{31} + \cdots - 10138750y + 271441$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.169969 + 0.896844I$ $a = 1.167190 - 0.569541I$ $b = 1.196600 - 0.338289I$	$-4.54212 - 5.27528I$	$-2.32627 + 5.08255I$
$u = 0.169969 + 0.896844I$ $a = 0.120024 + 1.356990I$ $b = -0.709175 - 0.949980I$	$-4.54212 - 5.27528I$	$-2.32627 + 5.08255I$
$u = 0.169969 - 0.896844I$ $a = 1.167190 + 0.569541I$ $b = 1.196600 + 0.338289I$	$-4.54212 + 5.27528I$	$-2.32627 - 5.08255I$
$u = 0.169969 - 0.896844I$ $a = 0.120024 - 1.356990I$ $b = -0.709175 + 0.949980I$	$-4.54212 + 5.27528I$	$-2.32627 - 5.08255I$
$u = 0.994597 + 0.824777I$ $a = 0.903954 - 0.390401I$ $b = 1.68673 + 0.18194I$	$-4.64054 - 2.72058I$	$-11.67920 - 0.63367I$
$u = 0.994597 + 0.824777I$ $a = -1.094760 + 0.724905I$ $b = -1.221060 - 0.357269I$	$-4.64054 - 2.72058I$	$-11.67920 - 0.63367I$
$u = 0.994597 - 0.824777I$ $a = 0.903954 + 0.390401I$ $b = 1.68673 - 0.18194I$	$-4.64054 + 2.72058I$	$-11.67920 + 0.63367I$
$u = 0.994597 - 0.824777I$ $a = -1.094760 - 0.724905I$ $b = -1.221060 + 0.357269I$	$-4.64054 + 2.72058I$	$-11.67920 + 0.63367I$
$u = -0.533203 + 0.423490I$ $a = -0.456982 + 0.102875I$ $b = -0.11581 + 1.97266I$	$-6.78417 + 7.00115I$	$-9.7078 - 10.6678I$
$u = -0.533203 + 0.423490I$ $a = -1.93498 + 2.16281I$ $b = -0.200098 + 0.248380I$	$-6.78417 + 7.00115I$	$-9.7078 - 10.6678I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.533203-0.423490I$ $a=-0.456982-0.102875I$ $b=-0.11581-1.97266I$	$-6.78417-7.00115I$	$-9.7078+10.6678I$
$u=-0.533203-0.423490I$ $a=-1.93498-2.16281I$ $b=-0.200098-0.248380I$	$-6.78417-7.00115I$	$-9.7078+10.6678I$
$u=-0.060033+0.625164I$ $a=-1.305950+0.474680I$ $b=-0.963080+0.863595I$	$1.16901-1.70911I$	$6.35818+0.41032I$
$u=-0.060033+0.625164I$ $a=-1.51535-1.39501I$ $b=\ \ 0.218353+0.844927I$	$1.16901-1.70911I$	$6.35818+0.41032I$
$u=-0.060033-0.625164I$ $a=-1.305950-0.474680I$ $b=-0.963080-0.863595I$	$1.16901+1.70911I$	$6.35818-0.41032I$
$u=-0.060033-0.625164I$ $a=-1.51535+1.39501I$ $b=\ \ 0.218353-0.844927I$	$1.16901+1.70911I$	$6.35818-0.41032I$
$u=-0.325762+0.486223I$ $a=\ \ 0.810374-0.142795I$ $b=\ \ 0.35796-1.68857I$	$0.44082+3.30359I$	$-0.44501-13.24031I$
$u=-0.325762+0.486223I$ $a=\ \ 2.73734-1.09777I$ $b=\ \ 0.194559-0.440540I$	$0.44082+3.30359I$	$-0.44501-13.24031I$
$u=-0.325762-0.486223I$ $a=\ \ 0.810374+0.142795I$ $b=\ \ 0.35796+1.68857I$	$0.44082-3.30359I$	$-0.44501+13.24031I$
$u=-0.325762-0.486223I$ $a=\ \ 2.73734+1.09777I$ $b=\ \ 0.194559+0.440540I$	$0.44082-3.30359I$	$-0.44501+13.24031I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=0.94150+1.08351I$ $a=0.744681-0.655376I$ $b=1.45275+0.57236I$	$-3.86336-4.39205I$	$-4.86684+12.44765I$
$u=0.94150+1.08351I$ $a=-0.964817+0.502417I$ $b=-1.41122-0.18983I$	$-3.86336-4.39205I$	$-4.86684+12.44765I$
$u=0.94150-1.08351I$ $a=0.744681+0.655376I$ $b=1.45275-0.57236I$	$-3.86336+4.39205I$	$-4.86684-12.44765I$
$u=0.94150-1.08351I$ $a=-0.964817-0.502417I$ $b=-1.41122+0.18983I$	$-3.86336+4.39205I$	$-4.86684-12.44765I$
$u=1.28188+0.69445I$ $a=-0.802703+0.270845I$ $b=-1.91630-0.23956I$	$-11.46350-2.54285I$	$-14.4747+1.8243I$
$u=1.28188+0.69445I$ $a=1.234000-0.481628I$ $b=1.217060+0.210244I$	$-11.46350-2.54285I$	$-14.4747+1.8243I$
$u=1.28188-0.69445I$ $a=-0.802703-0.270845I$ $b=-1.91630+0.23956I$	$-11.46350+2.54285I$	$-14.4747-1.8243I$
$u=1.28188-0.69445I$ $a=1.234000+0.481628I$ $b=1.217060-0.210244I$	$-11.46350+2.54285I$	$-14.4747-1.8243I$
$u=1.03105+1.24797I$ $a=0.973554-0.495334I$ $b=1.334690+0.189904I$	$-9.79453-5.66478I$	$-10.85832+7.61626I$
$u=1.03105+1.24797I$ $a=-0.615581+0.560905I$ $b=-1.62195-0.70425I$	$-9.79453-5.66478I$	$-10.85832+7.61626I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.03105 - 1.24797I$ $a = 0.973554 + 0.495334I$ $b = 1.334690 - 0.189904I$	$-9.79453 + 5.66478I$	$-10.85832 - 7.61626I$
$u = 1.03105 - 1.24797I$ $a = -0.615581 - 0.560905I$ $b = -1.62195 + 0.70425I$	$-9.79453 + 5.66478I$	$-10.85832 - 7.61626I$

III. $I^u_3 =$
$\langle -u^{17}+9u^{16}+\cdots+b+4,\ -4u^{17}+31u^{16}+\cdots+a+2,\ u^{18}-8u^{17}+\cdots-5u+1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}4u^{17}-31u^{16}+\cdots+19u-2\\u^{17}-9u^{16}+\cdots+18u-4\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-u^{15}+7u^{14}+\cdots-17u+3\\-u^{16}+7u^{15}+\cdots-17u^2+4u\end{pmatrix}$$
$$a_8 = \begin{pmatrix}u^{16}-8u^{15}+\cdots-21u+3\\-u^{16}+7u^{15}+\cdots-17u^2+4u\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}4u^{17}-31u^{16}+\cdots+19u-2\\-2u^{16}+15u^{15}+\cdots+19u-5\end{pmatrix}$$
$$a_5 = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}4u^{17}-30u^{16}+\cdots-49u^2+12u\\u^{17}-9u^{16}+\cdots+17u-4\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-u^{17}+8u^{16}+\cdots-19u+3\\u^2-u+1\end{pmatrix}$$
$$a_1 = \begin{pmatrix}u^{17}-8u^{16}+\cdots+16u-1\\-u^4+2u^3-3u^2+2u-1\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-u^{15}+7u^{14}+\cdots+15u^2-5u\\-u^{16}+7u^{15}+\cdots-9u^2+2u\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 10u^{17}-72u^{16}+309u^{15}-928u^{14}+2167u^{13}-4048u^{12}+6223u^{11}-7893u^{10}+8322u^9-7192u^8+5096u^7-2875u^6+1341u^5-497u^4+196u^3-32u^2-4u+1$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^{18} + u^{16} + \cdots - 4u + 1$
c_2	$u^{18} - 8u^{17} + \cdots - 5u + 1$
c_4	$u^{18} - u^{17} + \cdots + u^2 + 1$
c_5	$u^{18} + 8u^{17} + \cdots + 5u + 1$
c_6	$u^{18} + u^{17} + \cdots + 6u^2 + 1$
c_7	$u^{18} + 3u^{17} + \cdots - 8u + 8$
c_8, c_9	$u^{18} + 5u^{17} + \cdots - 6u^2 + 1$
c_{10}	$u^{18} - u^{17} + \cdots + 6u^2 + 1$
c_{11}	$u^{18} + 6u^{16} + \cdots + 16u + 8$
c_{12}	$u^{18} - 5u^{17} + \cdots - 6u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^{18} + 2y^{17} + \cdots - 6y + 1$
c_2, c_5	$y^{18} + 10y^{17} + \cdots + 17y + 1$
c_4	$y^{18} + 13y^{17} + \cdots + 2y + 1$
c_6, c_{10}	$y^{18} - 5y^{17} + \cdots + 12y + 1$
c_7	$y^{18} + y^{17} + \cdots - 416y + 64$
c_8, c_9, c_{12}	$y^{18} + 19y^{17} + \cdots - 12y + 1$
c_{11}	$y^{18} + 12y^{17} + \cdots - 96y + 64$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.261420 + 1.172120I$ $a = 0.379841 + 0.478807I$ $b = -0.461922 + 0.570389I$	$1.70214 - 0.21758I$	$-3.00572 + 0.40055I$
$u = 0.261420 - 1.172120I$ $a = 0.379841 - 0.478807I$ $b = -0.461922 - 0.570389I$	$1.70214 + 0.21758I$	$-3.00572 - 0.40055I$
$u = 0.516070 + 0.482572I$ $a = -1.70648 - 0.28542I$ $b = -0.742931 - 0.970796I$	$-0.60489 - 2.99568I$	$-13.9248 + 5.1291I$
$u = 0.516070 - 0.482572I$ $a = -1.70648 + 0.28542I$ $b = -0.742931 + 0.970796I$	$-0.60489 + 2.99568I$	$-13.9248 - 5.1291I$
$u = 0.143682 + 1.295940I$ $a = -0.350539 + 0.023495I$ $b = -0.080814 - 0.450902I$	$4.02945 - 3.56902I$	$8.87570 + 5.68054I$
$u = 0.143682 - 1.295940I$ $a = -0.350539 - 0.023495I$ $b = -0.080814 + 0.450902I$	$4.02945 + 3.56902I$	$8.87570 - 5.68054I$
$u = 0.972474 + 0.968007I$ $a = -0.940135 + 0.571481I$ $b = -1.46745 - 0.35431I$	$-4.05551 - 3.55831I$	$-5.61870 + 2.86845I$
$u = 0.972474 - 0.968007I$ $a = -0.940135 - 0.571481I$ $b = -1.46745 + 0.35431I$	$-4.05551 + 3.55831I$	$-5.61870 - 2.86845I$
$u = 1.170870 + 0.744940I$ $a = 0.972765 - 0.320087I$ $b = 1.37742 + 0.34987I$	$-10.09670 - 2.78092I$	$-6.47448 + 2.85890I$
$u = 1.170870 - 0.744940I$ $a = 0.972765 + 0.320087I$ $b = 1.37742 - 0.34987I$	$-10.09670 + 2.78092I$	$-6.47448 - 2.85890I$

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.11352 + 1.42465I$ $a = 0.375608 - 0.236602I$ $b = 0.379711 + 0.508250I$	$-1.61059 - 6.04596I$	$-0.58045 + 7.39747I$
$u = 0.11352 - 1.42465I$ $a = 0.375608 + 0.236602I$ $b = 0.379711 - 0.508250I$	$-1.61059 + 6.04596I$	$-0.58045 - 7.39747I$
$u = -0.217488 + 0.441352I$ $a = -1.94133 + 1.20767I$ $b = -0.110795 - 1.119460I$	$-6.05328 + 6.37936I$	$-2.68320 - 4.69289I$
$u = -0.217488 - 0.441352I$ $a = -1.94133 - 1.20767I$ $b = -0.110795 + 1.119460I$	$-6.05328 - 6.37936I$	$-2.68320 + 4.69289I$
$u = 0.93840 + 1.19736I$ $a = 0.718907 - 0.611414I$ $b = 1.40670 + 0.28704I$	$-8.67996 - 4.80406I$	$-5.16961 + 2.57260I$
$u = 0.93840 - 1.19736I$ $a = 0.718907 + 0.611414I$ $b = 1.40670 - 0.28704I$	$-8.67996 + 4.80406I$	$-5.16961 - 2.57260I$
$u = 0.101058 + 0.432072I$ $a = 2.49136 + 0.11964I$ $b = 0.200080 + 1.088540I$	$0.69529 + 2.31097I$	$-2.41878 - 7.12817I$
$u = 0.101058 - 0.432072I$ $a = 2.49136 - 0.11964I$ $b = 0.200080 - 1.088540I$	$0.69529 - 2.31097I$	$-2.41878 + 7.12817I$

IV. $I_1^v = \langle a,\ b-1,\ v-1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} -1 \\ 1 \end{pmatrix}$$

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

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

$$a_4 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v		$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v =$	1.00000		
$a =$	0	-1.64493	-6.00000
$b =$	1.00000		

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_3	$(u+1)(u^{18}+u^{16}+\cdots-4u+1)(u^{32}-u^{31}+\cdots-3u+22)$ $\cdot(u^{34}-u^{33}+\cdots-14u+1)$
c_2	$u(u^{16}+7u^{15}+\cdots+4u^2+1)^2(u^{18}-8u^{17}+\cdots-5u+1)$ $\cdot(u^{34}-11u^{33}+\cdots-21u+9)$
c_4	$(u+1)(u^{18}-u^{17}+\cdots+u^2+1)(u^{32}+u^{31}+\cdots-6241u+2648)$ $\cdot(u^{34}-2u^{33}+\cdots-298u+241)$
c_5	$u(u^{16}+7u^{15}+\cdots+4u^2+1)^2(u^{18}+8u^{17}+\cdots+5u+1)$ $\cdot(u^{34}-11u^{33}+\cdots-21u+9)$
c_6	$(u+1)(u^{18}+u^{17}+\cdots+6u^2+1)(u^{32}-u^{31}+\cdots-935u+566)$ $\cdot(u^{34}-20u^{32}+\cdots-6u^2+1)$
c_7	$((u-1)^{32})(u+1)(u^{18}+3u^{17}+\cdots-8u+8)$ $\cdot(u^{34}+29u^{33}+\cdots+786432u+65536)$
c_8, c_9	$u(u^{16}-3u^{15}+\cdots+4u^2+1)^2(u^{18}+5u^{17}+\cdots-6u^2+1)$ $\cdot(u^{34}+8u^{33}+\cdots+96u+9)$
c_{10}	$(u+1)(u^{18}-u^{17}+\cdots+6u^2+1)(u^{32}-u^{31}+\cdots-935u+566)$ $\cdot(u^{34}-20u^{32}+\cdots-6u^2+1)$
c_{11}	$(u+1)(u^{18}+6u^{16}+\cdots+16u+8)(u^{32}-u^{31}+\cdots-7126u+521)$ $\cdot(u^{34}-u^{33}+\cdots-146u+538)$
c_{12}	$u(u^{16}-3u^{15}+\cdots+4u^2+1)^2(u^{18}-5u^{17}+\cdots-6u^2+1)$ $\cdot(u^{34}+8u^{33}+\cdots+96u+9)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3	$(y-1)(y^{18}+2y^{17}+\cdots-6y+1)(y^{32}+3y^{31}+\cdots-8501y+484)$ $\cdot(y^{34}-21y^{33}+\cdots-30y+1)$
c_2, c_5	$y(y^{16}+y^{15}+\cdots+8y+1)^2(y^{18}+10y^{17}+\cdots+17y+1)$ $\cdot(y^{34}+11y^{33}+\cdots+657y+81)$
c_4	$(y-1)(y^{18}+13y^{17}+\cdots+2y+1)$ $\cdot(y^{32}+27y^{31}+\cdots-50744273y+7011904)$ $\cdot(y^{34}+26y^{33}+\cdots+316558y+58081)$
c_6, c_{10}	$(y-1)(y^{18}-5y^{17}+\cdots+12y+1)$ $\cdot(y^{32}-21y^{31}+\cdots+1943323y+320356)$ $\cdot(y^{34}-40y^{33}+\cdots-12y+1)$
c_7	$((y-1)^{33})(y^{18}+y^{17}+\cdots-416y+64)$ $\cdot(y^{34}+y^{33}+\cdots-8589934592y+4294967296)$
c_8, c_9, c_{12}	$y(y^{16}+17y^{15}+\cdots+8y+1)^2(y^{18}+19y^{17}+\cdots-12y+1)$ $\cdot(y^{34}+36y^{33}+\cdots+1764y+81)$
c_{11}	$(y-1)(y^{18}+12y^{17}+\cdots-96y+64)$ $\cdot(y^{32}+31y^{31}+\cdots-10138750y+271441)$ $\cdot(y^{34}+33y^{33}+\cdots+1472172y+289444)$