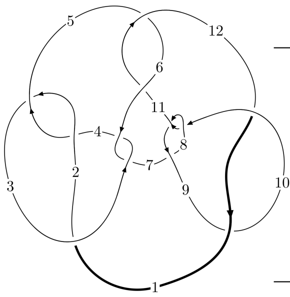
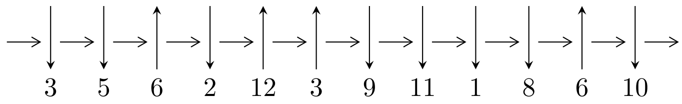
$12n_{0131}$ ($K12n_{0131}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 2.86219 \times 10^{101} u^{65} + 3.04230 \times 10^{102} u^{64} + \cdots + 1.07604 \times 10^{101} b - 6.59997 \times 10^{101}, \\
& 1.26922 \times 10^{102} u^{65} + 1.35759 \times 10^{103} u^{64} + \cdots + 2.15207 \times 10^{101} a - 2.45951 \times 10^{103}, \\
& u^{66} + 11u^{65} + \cdots - 184u - 1 \rangle \\
I_2^u = \langle & -2a^8 + 3a^7 - 6a^6 + 5a^5 - 9a^4 + 6a^3 - 8a^2 + b + 3a - 4,\ a^9 - a^8 + 2a^7 - a^6 + 3a^5 - a^4 + 2a^3 + a + 1,\ u - \\
I_3^u = \langle & u^4 + u^3 - u^2 + b - 2u - 1,\ -u^5 - u^4 + u^3 + u^2 + a - u - 1,\ u^6 + u^5 - u^4 - 2u^3 + u + 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 81 representations.

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[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. $\boldsymbol{I_1^u = \langle 2.86 \times 10^{101}u^{65} + 3.04 \times 10^{102}u^{64} + \cdots + 1.08 \times 10^{101}b - 6.60 \times 10^{101},\ 1.27 \times 10^{102}u^{65} + 1.36 \times 10^{103}u^{64} + \cdots + 2.15 \times 10^{101}a - 2.46 \times 10^{103},\ u^{66} + 11u^{65} + \cdots - 184u - 1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_5 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u^2+1\\-u^2\end{pmatrix}$$
$$a_4 = \begin{pmatrix}u\\-u^3+u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-5.89768u^{65} - 63.0828u^{64} + \cdots + 2827.10u + 114.286\\-2.65994u^{65} - 28.2732u^{64} + \cdots + 1025.61u + 6.13360\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-8.52453u^{65} - 90.7723u^{64} + \cdots + 3834.57u + 120.324\\-2.57433u^{65} - 27.0269u^{64} + \cdots + 862.488u + 5.23234\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-8.72655u^{65} - 89.2240u^{64} + \cdots + 1798.25u - 38.9602\\-5.28403u^{65} - 54.4051u^{64} + \cdots + 1316.97u + 6.95585\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-3.83893u^{65} - 41.0224u^{64} + \cdots + 1345.05u - 6.03327\\-1.51701u^{65} - 16.1400u^{64} + \cdots + 494.366u + 2.63312\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-5.35594u^{65} - 57.1624u^{64} + \cdots + 1839.41u - 3.40015\\-1.51701u^{65} - 16.1400u^{64} + \cdots + 494.366u + 2.63312\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}13.7708u^{65} + 144.182u^{64} + \cdots - 4481.24u - 77.0429\\0.429501u^{65} + 4.69148u^{64} + \cdots - 219.153u - 1.47738\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-7.65340u^{65} - 81.3957u^{64} + \cdots + 3054.18u + 72.2685\\-5.10197u^{65} - 53.2822u^{64} + \cdots + 1553.54u + 8.78813\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 7.00145u^{65} + 70.4042u^{64} + \cdots - 636.383u - 12.3310$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{66} + 21u^{65} + \cdots + 31524u + 1$
c_2, c_4	$u^{66} - 11u^{65} + \cdots + 184u - 1$
c_3, c_6	$u^{66} + 8u^{65} + \cdots - 7168u + 512$
c_5, c_{11}	$u^{66} + 3u^{65} + \cdots - 2u - 1$
c_7	$u^{66} + 28u^{65} + \cdots - 143u + 1$
c_8, c_{10}	$u^{66} - 8u^{65} + \cdots - 11u + 1$
c_9, c_{12}	$u^{66} - 2u^{65} + \cdots + 192u + 64$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{66} + 59y^{65} + \cdots - 992297680y + 1$
c_2, c_4	$y^{66} - 21y^{65} + \cdots - 31524y + 1$
c_3, c_6	$y^{66} - 60y^{65} + \cdots - 76021760y + 262144$
c_5, c_{11}	$y^{66} + 15y^{65} + \cdots - 20y + 1$
c_7	$y^{66} + 28y^{65} + \cdots - 12229y + 1$
c_8, c_{10}	$y^{66} - 28y^{65} + \cdots + 143y + 1$
c_9, c_{12}	$y^{66} + 42y^{65} + \cdots + 77824y + 4096$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.00537$ $a = 0.406767$ $b = -11.0855$	-2.82917	365.350
$u = 0.687723 + 0.687263I$ $a = -1.353200 - 0.228510I$ $b = -1.300520 + 0.290425I$	$-2.23471 - 2.98196I$	0
$u = 0.687723 - 0.687263I$ $a = -1.353200 + 0.228510I$ $b = -1.300520 - 0.290425I$	$-2.23471 + 2.98196I$	0
$u = 1.028820 + 0.216167I$ $a = 0.012733 + 0.445672I$ $b = 0.438763 + 0.902849I$	$-1.91057 - 0.79816I$	0
$u = 1.028820 - 0.216167I$ $a = 0.012733 - 0.445672I$ $b = 0.438763 - 0.902849I$	$-1.91057 + 0.79816I$	0
$u = 0.783333 + 0.429567I$ $a = 2.12816 + 1.63033I$ $b = 2.36643 - 1.94607I$	$-3.21013 - 1.26950I$	$-4.00000 + 7.64083I$
$u = 0.783333 - 0.429567I$ $a = 2.12816 - 1.63033I$ $b = 2.36643 + 1.94607I$	$-3.21013 + 1.26950I$	$-4.00000 - 7.64083I$
$u = 1.125970 + 0.056995I$ $a = 0.023922 - 0.599547I$ $b = 0.36398 + 1.57344I$	$0.81136 + 2.64313I$	0
$u = 1.125970 - 0.056995I$ $a = 0.023922 + 0.599547I$ $b = 0.36398 - 1.57344I$	$0.81136 - 2.64313I$	0
$u = -0.824004 + 0.171548I$ $a = -1.143160 + 0.689270I$ $b = -0.151706 + 0.583718I$	$-4.86194 + 7.45999I$	$-0.96246 - 11.41011I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.824004-0.171548I$ $a=-1.143160-0.689270I$ $b=-0.151706-0.583718I$	$-4.86194-7.45999I$	$-0.96246+11.41011I$
$u=0.515278+1.048940I$ $a=-1.36638-1.36297I$ $b=-1.375720+0.022642I$	$2.19847-2.32521I$	0
$u=0.515278-1.048940I$ $a=-1.36638+1.36297I$ $b=-1.375720-0.022642I$	$2.19847+2.32521I$	0
$u=-0.745847+0.910266I$ $a=-1.20178+2.28035I$ $b=-2.03130+0.52431I$	$2.17496-0.19887I$	0
$u=-0.745847-0.910266I$ $a=-1.20178-2.28035I$ $b=-2.03130-0.52431I$	$2.17496+0.19887I$	0
$u=-0.760288+0.928501I$ $a=1.67368-0.06126I$ $b=1.88450+0.90427I$	$7.72304-2.79945I$	0
$u=-0.760288-0.928501I$ $a=1.67368+0.06126I$ $b=1.88450-0.90427I$	$7.72304+2.79945I$	0
$u=0.668448+0.397576I$ $a=0.003744-1.234270I$ $b=-1.38255+1.28759I$	$2.07274-4.10478I$	$-2.27198-0.09641I$
$u=0.668448-0.397576I$ $a=0.003744+1.234270I$ $b=-1.38255-1.28759I$	$2.07274+4.10478I$	$-2.27198+0.09641I$
$u=-0.856203+0.882898I$ $a=0.290557+1.073450I$ $b=0.231042+0.438928I$	$3.57906+2.47635I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.856203 - 0.882898I$ $a = 0.290557 - 1.073450I$ $b = 0.231042 - 0.438928I$	$3.57906 - 2.47635I$	0
$u = -1.118290 + 0.517016I$ $a = 0.122393 - 0.353509I$ $b = -0.055274 - 0.183449I$	$-1.20228 + 5.48361I$	0
$u = -1.118290 - 0.517016I$ $a = 0.122393 + 0.353509I$ $b = -0.055274 + 0.183449I$	$-1.20228 - 5.48361I$	0
$u = -0.690354 + 1.028160I$ $a = -0.438411 - 1.018090I$ $b = -0.341152 - 0.391855I$	$4.03833 - 2.66127I$	0
$u = -0.690354 - 1.028160I$ $a = -0.438411 + 1.018090I$ $b = -0.341152 + 0.391855I$	$4.03833 + 2.66127I$	0
$u = 1.274370 + 0.103527I$ $a = 0.09874 + 1.51084I$ $b = 1.63942 + 2.71558I$	$-4.31795 - 0.78820I$	0
$u = 1.274370 - 0.103527I$ $a = 0.09874 - 1.51084I$ $b = 1.63942 - 2.71558I$	$-4.31795 + 0.78820I$	0
$u = -0.983683 + 0.830782I$ $a = 0.570504 + 0.494511I$ $b = 0.437347 + 0.006156I$	$3.17239 + 3.89822I$	0
$u = -0.983683 - 0.830782I$ $a = 0.570504 - 0.494511I$ $b = 0.437347 - 0.006156I$	$3.17239 - 3.89822I$	0
$u = -0.894353 + 0.951169I$ $a = -1.78516 + 0.28107I$ $b = -2.14588 - 0.82546I$	$9.29382 + 3.78649I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.894353 - 0.951169I$ $a = -1.78516 - 0.28107I$ $b = -2.14588 + 0.82546I$	$9.29382 - 3.78649I$	0
$u = -1.062290 + 0.802217I$ $a = 2.22217 - 0.70557I$ $b = 2.85845 + 0.87099I$	$1.18870 + 6.56344I$	0
$u = -1.062290 - 0.802217I$ $a = 2.22217 + 0.70557I$ $b = 2.85845 - 0.87099I$	$1.18870 - 6.56344I$	0
$u = -1.057290 + 0.809211I$ $a = -0.51219 + 1.44953I$ $b = -1.79007 + 0.34040I$	$6.78475 + 9.23321I$	0
$u = -1.057290 - 0.809211I$ $a = -0.51219 - 1.44953I$ $b = -1.79007 - 0.34040I$	$6.78475 - 9.23321I$	0
$u = -0.620743 + 0.209791I$ $a = 1.51472 - 0.44133I$ $b = 0.351541 - 0.610430I$	$-1.43375 + 2.91518I$	$0.46506 - 4.85019I$
$u = -0.620743 - 0.209791I$ $a = 1.51472 + 0.44133I$ $b = 0.351541 + 0.610430I$	$-1.43375 - 2.91518I$	$0.46506 + 4.85019I$
$u = -0.597235 + 0.259408I$ $a = -0.28543 + 1.39421I$ $b = -0.011224 + 0.406559I$	$1.17931 - 1.63015I$	$3.12613 + 3.30141I$
$u = -0.597235 - 0.259408I$ $a = -0.28543 - 1.39421I$ $b = -0.011224 - 0.406559I$	$1.17931 + 1.63015I$	$3.12613 - 3.30141I$
$u = -0.994697 + 0.913978I$ $a = 0.79592 - 1.57410I$ $b = 1.87674 - 0.36992I$	$8.98485 + 3.05406I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.994697 - 0.913978I$ $a = 0.79592 + 1.57410I$ $b = 1.87674 + 0.36992I$	$8.98485 - 3.05406I$	0
$u = 0.784334 + 1.103720I$ $a = 1.32414 + 1.54204I$ $b = 1.68117 + 0.18497I$	$1.02644 - 7.74901I$	0
$u = 0.784334 - 1.103720I$ $a = 1.32414 - 1.54204I$ $b = 1.68117 - 0.18497I$	$1.02644 + 7.74901I$	0
$u = -0.634943 + 0.050863I$ $a = -1.58118 - 0.94089I$ $b = -0.349515 - 0.878817I$	$-5.23148 + 1.44469I$	$-2.19147 - 1.36304I$
$u = -0.634943 - 0.050863I$ $a = -1.58118 + 0.94089I$ $b = -0.349515 + 0.878817I$	$-5.23148 - 1.44469I$	$-2.19147 + 1.36304I$
$u = 0.601289 + 0.105594I$ $a = 0.258323 + 0.970497I$ $b = 1.215100 - 0.178401I$	$-1.82059 + 0.01526I$	$-7.87182 - 0.48568I$
$u = 0.601289 - 0.105594I$ $a = 0.258323 - 0.970497I$ $b = 1.215100 + 0.178401I$	$-1.82059 - 0.01526I$	$-7.87182 + 0.48568I$
$u = -1.127320 + 0.826259I$ $a = -0.431491 - 0.571092I$ $b = -0.399530 - 0.114576I$	$2.66554 + 9.42263I$	0
$u = -1.127320 - 0.826259I$ $a = -0.431491 + 0.571092I$ $b = -0.399530 + 0.114576I$	$2.66554 - 9.42263I$	0
$u = -0.147109 + 0.577451I$ $a = -1.41532 - 0.01491I$ $b = -0.366040 + 0.326712I$	$1.31523 - 1.27199I$	$3.06090 + 2.68907I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.147109-0.577451I$ $a=-1.41532+0.01491I$ $b=-0.366040-0.326712I$	$1.31523+1.27199I$	$3.06090-2.68907I$
$u=-0.723739+1.209940I$ $a=\ \ 1.67771-1.53567I$ $b=\ \ 2.06140-0.32997I$	$9.83371-2.67210I$	0
$u=-0.723739-1.209940I$ $a=\ \ 1.67771+1.53567I$ $b=\ \ 2.06140+0.32997I$	$9.83371+2.67210I$	0
$u=\ \ 0.411231+0.411306I$ $a=\ \ 0.32779+1.74947I$ $b=\ \ 0.97919-1.06319I$	$2.74552+1.51786I$	$-0.89722-4.70084I$
$u=\ \ 0.411231-0.411306I$ $a=\ \ 0.32779-1.74947I$ $b=\ \ 0.97919+1.06319I$	$2.74552-1.51786I$	$-0.89722+4.70084I$
$u=-0.60092+1.28586I$ $a=-1.89989+1.40726I$ $b=-2.07450+0.29742I$	$8.19227-8.99833I$	0
$u=-0.60092-1.28586I$ $a=-1.89989-1.40726I$ $b=-2.07450-0.29742I$	$8.19227+8.99833I$	0
$u=-1.19778+0.88601I$ $a=-1.78025+0.89840I$ $b=-2.69078-0.32973I$	$8.24876+10.14770I$	0
$u=-1.19778-0.88601I$ $a=-1.78025-0.89840I$ $b=-2.69078+0.32973I$	$8.24876-10.14770I$	0
$u=-1.26526+0.84227I$ $a=\ \ 1.68547-1.04922I$ $b=\ \ 2.75955+0.13511I$	$5.9981+16.5072I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.26526 - 0.84227I$ $a = 1.68547 + 1.04922I$ $b = 2.75955 - 0.13511I$	$5.9981 - 16.5072I$	0
$u = 1.42330 + 0.57117I$ $a = -0.920325 + 0.724904I$ $b = -1.27403 + 1.04616I$	$-1.42259 + 0.46359I$	0
$u = 1.42330 - 0.57117I$ $a = -0.920325 - 0.724904I$ $b = -1.27403 - 1.04616I$	$-1.42259 - 0.46359I$	0
$u = 1.59839 + 0.34758I$ $a = 0.832676 - 0.993612I$ $b = 1.38737 - 1.32476I$	$-1.87995 - 4.31692I$	0
$u = 1.59839 - 0.34758I$ $a = 0.832676 + 0.993612I$ $b = 1.38737 + 1.32476I$	$-1.87995 + 4.31692I$	0
$u = -0.00563429$ $a = 98.6949$ $b = 0.501097$	-1.20362	-8.91660

II.

$\boldsymbol{I_2^u = \langle -2a^8+b+\cdots+3a-4,\ a^9-a^8+2a^7-a^6+3a^5-a^4+2a^3+a+1,\ u-1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_5 = \begin{pmatrix}0\\1\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1\\-1\end{pmatrix}$$
$$a_1 = \begin{pmatrix}0\\-1\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}a\\2a^8-3a^7+6a^6-5a^5+9a^4-6a^3+8a^2-3a+4\end{pmatrix}$$
$$a_9 = \begin{pmatrix}a\\2a^8-3a^7+6a^6-5a^5+9a^4-6a^3+8a^2-4a+4\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-a^2\\a^8-2a^7+3a^6-3a^5+4a^4-4a^3+3a^2-2a+1\end{pmatrix}$$
$$a_6 = \begin{pmatrix}a^4\\0\end{pmatrix}$$
$$a_7 = \begin{pmatrix}a^4\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-a^6-a^2\\a^8-2a^7+3a^6-3a^5+4a^4-4a^3+3a^2-2a+1\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-a^6-a^2\\a^8-2a^7+4a^6-3a^5+6a^4-4a^3+6a^2-2a+3\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -45a^8+71a^7-127a^6+112a^5-192a^4+149a^3-165a^2+83a-97$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u-1)^9$
c_3, c_6	u^9
c_4	$(u+1)^9$
c_5	$u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1$
c_7	$u^9-5u^8+12u^7-15u^6+9u^5+u^4-4u^3+2u^2+u-1$
c_8	$u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1$
c_9	$u^9+u^8+2u^7+u^6+3u^5+u^4+2u^3+u-1$
c_{10}	$u^9-u^8-2u^7+3u^6+u^5-3u^4+2u^3-u+1$
c_{11}	$u^9-3u^8+8u^7-13u^6+17u^5-17u^4+12u^3-6u^2+u+1$
c_{12}	$u^9-u^8+2u^7-u^6+3u^5-u^4+2u^3+u+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^9$
c_3, c_6	y^9
c_5, c_{11}	$y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1$
c_7	$y^9 - y^8 + 12y^7 - 7y^6 + 37y^5 + y^4 - 10y^2 + 5y - 1$
c_8, c_{10}	$y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1$
c_9, c_{12}	$y^9 + 3y^8 + 8y^7 + 13y^6 + 17y^5 + 17y^4 + 12y^3 + 6y^2 + y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -0.140343 + 0.966856I$ $b = -0.302374 + 0.039314I$	$0.13850 + 2.09337I$	$-4.31028 - 3.82038I$
$u = 1.00000$ $a = -0.140343 - 0.966856I$ $b = -0.302374 - 0.039314I$	$0.13850 - 2.09337I$	$-4.31028 + 3.82038I$
$u = 1.00000$ $a = -0.628449 + 0.875112I$ $b = -0.223063 + 0.988364I$	$-2.26187 + 2.45442I$	$-6.95900 - 1.69416I$
$u = 1.00000$ $a = -0.628449 - 0.875112I$ $b = -0.223063 - 0.988364I$	$-2.26187 - 2.45442I$	$-6.95900 + 1.69416I$
$u = 1.00000$ $a = 0.796005 + 0.733148I$ $b = -0.194585 + 1.248300I$	$-6.01628 + 1.33617I$	$-13.56769 - 0.26615I$
$u = 1.00000$ $a = 0.796005 - 0.733148I$ $b = -0.194585 - 1.248300I$	$-6.01628 - 1.33617I$	$-13.56769 + 0.26615I$
$u = 1.00000$ $a = 0.728966 + 0.986295I$ $b = 0.026651 + 0.835796I$	$-5.24306 - 7.08493I$	$-11.54551 + 1.34000I$
$u = 1.00000$ $a = 0.728966 - 0.986295I$ $b = 0.026651 - 0.835796I$	$-5.24306 + 7.08493I$	$-11.54551 - 1.34000I$
$u = 1.00000$ $a = -0.512358$ $b = 9.38674$	-2.84338	-223.240

III. $I_3^u = \langle u^4+u^3-u^2+b-2u-1,\ -u^5-u^4+u^3+u^2+a-u-1,\ u^6+u^5-u^4-2u^3+u+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -3u^5+u^4-u^3-2u^2-3u-7$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.002190 + 0.295542I$ $a = 1.00126 + 1.15863I$ $b = 2.68739 - 0.76772I$	$-3.53554 - 0.92430I$	$-12.60470 - 5.55069I$
$u = 1.002190 - 0.295542I$ $a = 1.00126 - 1.15863I$ $b = 2.68739 + 0.76772I$	$-3.53554 + 0.92430I$	$-12.60470 + 5.55069I$
$u = -0.428243 + 0.664531I$ $a = -0.001257 + 1.158630I$ $b = -0.346225 + 0.393823I$	$0.245672 - 0.924305I$	$-5.68949 + 0.25702I$
$u = -0.428243 - 0.664531I$ $a = -0.001257 - 1.158630I$ $b = -0.346225 - 0.393823I$	$0.245672 + 0.924305I$	$-5.68949 - 0.25702I$
$u = -1.073950 + 0.558752I$ $a = 0.500000 - 0.260139I$ $b = 0.658836 + 0.177500I$	$-1.64493 + 5.69302I$	$-11.7058 - 8.3306I$
$u = -1.073950 - 0.558752I$ $a = 0.500000 + 0.260139I$ $b = 0.658836 - 0.177500I$	$-1.64493 - 5.69302I$	$-11.7058 + 8.3306I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^9(u^6-3u^5+5u^4-4u^3+2u^2-u+1)$ $\cdot(u^{66}+21u^{65}+\cdots+31524u+1)$
c_2	$((u-1)^9)(u^6+u^5+\cdots+u+1)(u^{66}-11u^{65}+\cdots+184u-1)$
c_3	$u^9(u^6-u^5+\cdots-u+1)(u^{66}+8u^{65}+\cdots-7168u+512)$
c_4	$((u+1)^9)(u^6-u^5+\cdots-u+1)(u^{66}-11u^{65}+\cdots+184u-1)$
c_5	$(u^6-3u^5+5u^4-4u^3+2u^2-u+1)$ $\cdot(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)$ $\cdot(u^{66}+3u^{65}+\cdots-2u-1)$
c_6	$u^9(u^6+u^5+\cdots+u+1)(u^{66}+8u^{65}+\cdots-7168u+512)$
c_7	$(u-1)^6(u^9-5u^8+12u^7-15u^6+9u^5+u^4-4u^3+2u^2+u-1)$ $\cdot(u^{66}+28u^{65}+\cdots-143u+1)$
c_8	$(u-1)^6(u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1)$ $\cdot(u^{66}-8u^{65}+\cdots-11u+1)$
c_9	$u^6(u^9+u^8+2u^7+u^6+3u^5+u^4+2u^3+u-1)$ $\cdot(u^{66}-2u^{65}+\cdots+192u+64)$
c_{10}	$(u+1)^6(u^9-u^8-2u^7+3u^6+u^5-3u^4+2u^3-u+1)$ $\cdot(u^{66}-8u^{65}+\cdots-11u+1)$
c_{11}	$(u^6+3u^5+5u^4+4u^3+2u^2+u+1)$ $\cdot(u^9-3u^8+8u^7-13u^6+17u^5-17u^4+12u^3-6u^2+u+1)$ $\cdot(u^{66}+3u^{65}+\cdots-2u-1)$
c_{12}	$u^6(u^9-u^8+2u^7-u^6+3u^5-u^4+2u^3+u+1)$ $\cdot(u^{66}-2u^{65}+\cdots+192u+64)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^9(y^6+y^5+5y^4+6y^2+3y+1)$ $\cdot(y^{66}+59y^{65}+\cdots-992297680y+1)$
c_2, c_4	$(y-1)^9(y^6-3y^5+5y^4-4y^3+2y^2-y+1)$ $\cdot(y^{66}-21y^{65}+\cdots-31524y+1)$
c_3, c_6	$y^9(y^6-3y^5+5y^4-4y^3+2y^2-y+1)$ $\cdot(y^{66}-60y^{65}+\cdots-76021760y+262144)$
c_5, c_{11}	$(y^6+y^5+5y^4+6y^2+3y+1)$ $\cdot(y^9+7y^8+20y^7+25y^6+5y^5-15y^4+22y^2+13y-1)$ $\cdot(y^{66}+15y^{65}+\cdots-20y+1)$
c_7	$(y-1)^6(y^9-y^8+12y^7-7y^6+37y^5+y^4-10y^2+5y-1)$ $\cdot(y^{66}+28y^{65}+\cdots-12229y+1)$
c_8, c_{10}	$(y-1)^6(y^9-5y^8+12y^7-15y^6+9y^5+y^4-4y^3+2y^2+y-1)$ $\cdot(y^{66}-28y^{65}+\cdots+143y+1)$
c_9, c_{12}	$y^6(y^9+3y^8+8y^7+13y^6+17y^5+17y^4+12y^3+6y^2+y-1)$ $\cdot(y^{66}+42y^{65}+\cdots+77824y+4096)$