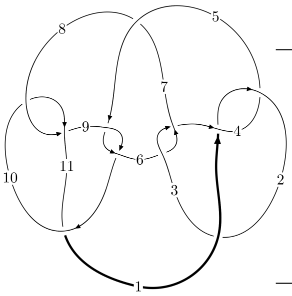
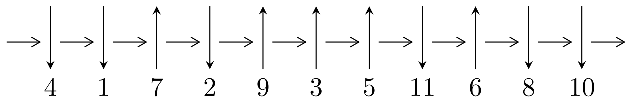
$11a_{14}$ $(K11a_{14})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & u^{11} - 2u^{10} - u^9 + 5u^8 - 2u^7 - 5u^6 + 5u^5 + 2u^4 - 5u^3 + u^2 + b + u, \\
& u^{11} - 2u^{10} - u^9 + 5u^8 - 2u^7 - 5u^6 + 5u^5 + u^4 - 5u^3 + 2u^2 + a + u - 1, \\
& u^{12} - 2u^{11} - u^{10} + 6u^9 - 3u^8 - 6u^7 + 8u^6 + u^5 - 8u^4 + 4u^3 + 3u^2 - 3u + 1\rangle \\
I_2^u = \langle & -1.93535 \times 10^{18}u^{65} - 2.98312 \times 10^{18}u^{64} + \cdots + 1.31154 \times 10^{18}b - 9.50336 \times 10^{18}, \\
& 1.46340 \times 10^{19}u^{65} - 7.80076 \times 10^{19}u^{64} + \cdots + 6.55768 \times 10^{17}a - 1.85522 \times 10^{19},\ u^{66} - 6u^{65} + \cdots + u + 1\rangle \\
I_3^u = \langle & -u^5 + u^4 - u^2 + b,\ -u^3 + u^2 + a - 1,\ u^6 - u^5 - u^4 + 2u^3 - u + 1\rangle \\
I_4^u = \langle & -2a^5 + 2a^4 - 7a^3 + 5a^2 + 3b - 4a + 4,\ a^6 + 4a^4 + a^3 + 4a^2 + 1,\ u + 1\rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 90 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.

$$\boldsymbol{I_1^u = \langle u^{11}-2u^{10}+\cdots+b+u,\ u^{11}-2u^{10}+\cdots+a-1,\ u^{12}-2u^{11}+\cdots-3u+1\rangle}$$

(i) Arc colorings

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

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^{11}+2u^{10}+u^9-5u^8+2u^7+5u^6-5u^5-u^4+5u^3-2u^2-u+1 \\ -u^{11}+2u^{10}+u^9-5u^8+2u^7+5u^6-5u^5-2u^4+5u^3-u^2-u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^9+u^8+2u^7-3u^6-u^5+3u^4-u^3-2u^2+u+1 \\ -u^{11}+u^{10}+2u^9-3u^8-u^7+3u^6-u^5-2u^4+2u^3+u^2-u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^{11}+2u^{10}+u^9-5u^8+2u^7+4u^6-5u^5+4u^3-2u^2-u \\ -u^{11}+2u^{10}+u^9-5u^8+2u^7+4u^6-5u^5+4u^3-2u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^3 \\ -u^3+u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^{11}-u^{10}-3u^9+4u^8+3u^7-7u^6+u^5+6u^4-5u^3-3u^2+3u \\ -u^{11}+u^{10}+2u^9-4u^8-u^7+5u^6-2u^5-4u^4+3u^3+u^2-2u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u^{10}+u^9+2u^8-3u^7-u^6+4u^5-2u^4-2u^3+3u^2 \\ -u^{10}+u^9+2u^8-3u^7-u^6+4u^5-2u^4-3u^3+3u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^{10}-u^9-2u^8+3u^7+u^6-3u^5+u^4+2u^3-2u^2-u+1 \\ u^{10}-u^9-2u^8+3u^7+u^6-3u^5+u^4+2u^3-u^2-u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^{10}-u^9-2u^8+3u^7+u^6-3u^5+u^4+2u^3-2u^2-u+1 \\ u^{10}-u^9-2u^8+3u^7+u^6-3u^5+u^4+2u^3-u^2-u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 4u^{11}-4u^{10}-4u^9+8u^8+4u^7-8u^6+4u^5+12u^4-4u^3-4u^2+4u+6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_8 c_{10}	$u^{12} - 2u^{11} + \cdots - 3u + 1$
c_2, c_{11}	$u^{12} + 6u^{11} + \cdots + 3u + 1$
c_3, c_5, c_6 c_9	$u^{12} - 3u^{10} + 5u^8 + 2u^7 - 2u^6 - 5u^5 + 4u^3 + u^2 - 3u + 1$
c_7	$u^{12} + 7u^{11} + \cdots + 36u + 8$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_8 c_{10}	$y^{12} - 6y^{11} + \cdots - 3y + 1$
c_2, c_{11}	$y^{12} + 2y^{11} + \cdots + 25y + 1$
c_3, c_5, c_6 c_9	$y^{12} - 6y^{11} + \cdots - 7y + 1$
c_7	$y^{12} - 5y^{11} + \cdots - 112y + 64$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.453738 + 0.929754I$ $a = 1.66040 - 0.06848I$ $b = 0.28000 + 1.88655I$	$8.07063 + 4.68351I$	$6.05114 - 1.98346I$
$u = 0.453738 - 0.929754I$ $a = 1.66040 + 0.06848I$ $b = 0.28000 - 1.88655I$	$8.07063 - 4.68351I$	$6.05114 + 1.98346I$
$u = -0.926778 + 0.513866I$ $a = -0.968427 - 0.613844I$ $b = -0.820207 - 0.433144I$	$-1.88434 + 4.01879I$	$-2.34862 - 5.57352I$
$u = -0.926778 - 0.513866I$ $a = -0.968427 + 0.613844I$ $b = -0.820207 + 0.433144I$	$-1.88434 - 4.01879I$	$-2.34862 + 5.57352I$
$u = -1.117600 + 0.115595I$ $a = -1.48773 - 1.21599I$ $b = -2.71217 - 0.83584I$	$-3.84373 + 0.16285I$	$1.32343 + 10.94047I$
$u = -1.117600 - 0.115595I$ $a = -1.48773 + 1.21599I$ $b = -2.71217 + 0.83584I$	$-3.84373 - 0.16285I$	$1.32343 - 10.94047I$
$u = 1.046970 + 0.439905I$ $a = -0.128616 + 1.041170I$ $b = -0.192235 + 0.299420I$	$-2.42744 - 7.70164I$	$-2.21070 + 10.86632I$
$u = 1.046970 - 0.439905I$ $a = -0.128616 - 1.041170I$ $b = -0.192235 - 0.299420I$	$-2.42744 + 7.70164I$	$-2.21070 - 10.86632I$
$u = 1.166620 + 0.659880I$ $a = -1.38335 - 1.68558I$ $b = 0.05610 - 2.99601I$	$3.6549 - 16.4066I$	$0.26530 + 10.19553I$
$u = 1.166620 - 0.659880I$ $a = -1.38335 + 1.68558I$ $b = 0.05610 + 2.99601I$	$3.6549 + 16.4066I$	$0.26530 - 10.19553I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.377048 + 0.377232I$ $a = 0.307725 - 0.384276I$ $b = -0.611491 - 0.099728I$	$1.364800 + 0.359490I$	$6.91945 - 0.04590I$
$u = 0.377048 - 0.377232I$ $a = 0.307725 + 0.384276I$ $b = -0.611491 + 0.099728I$	$1.364800 - 0.359490I$	$6.91945 + 0.04590I$

II.

$I_2^u = \langle -1.94\times10^{18}u^{65} - 2.98\times10^{18}u^{64} + \cdots + 1.31\times10^{18}b - 9.50\times10^{18},\ 1.46\times10^{19}u^{65} - 7.80\times10^{19}u^{64} + \cdots + 6.56\times10^{17}a - 1.86\times10^{19},\ u^{66} - 6u^{65} + \cdots + u + 1\rangle$

(i) Arc colorings

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

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -22.3158u^{65} + 118.956u^{64} + \cdots + 46.5353u + 28.2908 \\ 1.47564u^{65} + 2.27453u^{64} + \cdots + 16.1199u + 7.24598 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 17.6460u^{65} - 85.9310u^{64} + \cdots - 5.54679u - 12.6993 \\ -9.07917u^{65} + 44.9975u^{64} + \cdots + 7.67709u + 6.14426 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -19.4674u^{65} + 106.132u^{64} + \cdots + 53.5854u + 28.9858 \\ -6.78423u^{65} + 40.7932u^{64} + \cdots + 19.6572u + 11.6136 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^3 \\ -u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 35.5665u^{65} - 177.684u^{64} + \cdots - 30.3716u - 28.2580 \\ -0.424705u^{65} - 6.71788u^{64} + \cdots - 25.7126u - 8.98968 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 25.6164u^{65} - 133.621u^{64} + \cdots - 36.9797u - 29.4827 \\ -8.13884u^{65} + 30.6283u^{64} + \cdots - 9.28517u - 2.65549 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 6.14426u^{65} - 27.7864u^{64} + \cdots + 15.1971u - 1.53283 \\ -19.9447u^{65} + 100.602u^{64} + \cdots + 30.3453u + 17.6460 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 6.14426u^{65} - 27.7864u^{64} + \cdots + 15.1971u - 1.53283 \\ -19.9447u^{65} + 100.602u^{64} + \cdots + 30.3453u + 17.6460 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{12086631496832904775}{6557677311849555984}u^{65} - \frac{7581252097116615619}{819709663981194 98}u^{64} + \cdots - \frac{4412454952470131 13}{6557677311849555984}u - \frac{4211855983240591645}{3278838655924777992}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_8 c_{10}	$u^{66} - 6u^{65} + \cdots + u + 1$
c_2, c_{11}	$u^{66} + 30u^{65} + \cdots - 25u + 1$
c_3, c_5, c_6 c_9	$u^{66} - 2u^{65} + \cdots - 64u + 64$
c_7	$(u^{33} - 2u^{32} + \cdots + 84u + 49)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_8 c_{10}	$y^{66} - 30y^{65} + \cdots + 25y + 1$
c_2, c_{11}	$y^{66} + 18y^{65} + \cdots + 1453y + 1$
c_3, c_5, c_6 c_9	$y^{66} - 36y^{65} + \cdots - 36864y + 4096$
c_7	$(y^{33} - 14y^{32} + \cdots - 3528y - 2401)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.904759+0.446690I$ $a=\ 2.84122-1.52553I$ $b=\ 1.32232-3.04286I$	$-2.95867+1.76219I$	0
$u=-0.904759-0.446690I$ $a=\ 2.84122+1.52553I$ $b=\ 1.32232+3.04286I$	$-2.95867-1.76219I$	0
$u=\ 0.544139+0.827076I$ $a=\ 0.172505-0.275088I$ $b=\ 0.107638-0.791057I$	$3.57176-0.40211I$	0
$u=\ 0.544139-0.827076I$ $a=\ 0.172505+0.275088I$ $b=\ 0.107638+0.791057I$	$3.57176+0.40211I$	0
$u=-0.961832+0.210042I$ $a=\ 0.756823-0.566102I$ $b=\ 0.636013-0.444310I$	$-1.74022+0.71657I$	0
$u=-0.961832-0.210042I$ $a=\ 0.756823+0.566102I$ $b=\ 0.636013+0.444310I$	$-1.74022-0.71657I$	0
$u=\ 0.455132+0.872435I$ $a=-0.321275+0.229842I$ $b=-0.339251+0.707485I$	$2.96228+4.26802I$	0
$u=\ 0.455132-0.872435I$ $a=-0.321275-0.229842I$ $b=-0.339251-0.707485I$	$2.96228-4.26802I$	0
$u=\ 0.407462+0.942447I$ $a=-1.49558+0.17696I$ $b=-0.33336-1.92881I$	$5.96795+10.55640I$	0
$u=\ 0.407462-0.942447I$ $a=-1.49558-0.17696I$ $b=-0.33336+1.92881I$	$5.96795-10.55640I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.914238 + 0.471505I$ $a = 0.274153 - 0.838704I$ $b = 1.65746 + 0.36585I$	$-2.80746 - 3.11554I$	0
$u = 0.914238 - 0.471505I$ $a = 0.274153 + 0.838704I$ $b = 1.65746 - 0.36585I$	$-2.80746 + 3.11554I$	0
$u = 0.862360 + 0.437489I$ $a = 0.51258 + 1.50106I$ $b = -0.216752 + 0.388716I$	$-2.55962 - 0.56819I$	0
$u = 0.862360 - 0.437489I$ $a = 0.51258 - 1.50106I$ $b = -0.216752 - 0.388716I$	$-2.55962 + 0.56819I$	0
$u = 0.480350 + 0.829100I$ $a = -2.22215 + 0.10328I$ $b = -0.03293 - 1.98412I$	$1.71328 + 1.77212I$	0
$u = 0.480350 - 0.829100I$ $a = -2.22215 - 0.10328I$ $b = -0.03293 + 1.98412I$	$1.71328 - 1.77212I$	0
$u = -0.732260 + 0.589717I$ $a = -2.12270 + 0.89719I$ $b = -0.87763 + 2.26509I$	$3.57176 + 0.40211I$	$3.54240 + 0.I$
$u = -0.732260 - 0.589717I$ $a = -2.12270 - 0.89719I$ $b = -0.87763 - 2.26509I$	$3.57176 - 0.40211I$	$3.54240 + 0.I$
$u = 0.603634 + 0.892529I$ $a = 1.83672 + 0.40288I$ $b = 0.14265 + 1.57592I$	9.06216	0
$u = 0.603634 - 0.892529I$ $a = 1.83672 - 0.40288I$ $b = 0.14265 - 1.57592I$	9.06216	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.929321 + 0.583508I$ $a = -2.15255 + 1.50339I$ $b = -0.74412 + 2.72281I$	$2.96228 + 4.26802I$	0
$u = -0.929321 - 0.583508I$ $a = -2.15255 - 1.50339I$ $b = -0.74412 - 2.72281I$	$2.96228 - 4.26802I$	0
$u = 0.665888 + 0.873727I$ $a = -1.77794 - 0.54323I$ $b = -0.133969 - 1.404830I$	$7.69426 - 5.94756I$	0
$u = 0.665888 - 0.873727I$ $a = -1.77794 + 0.54323I$ $b = -0.133969 + 1.404830I$	$7.69426 + 5.94756I$	0
$u = 0.957231 + 0.541430I$ $a = -0.526732 - 0.892898I$ $b = 0.065036 - 0.385894I$	$0.32108 - 4.39805I$	0
$u = 0.957231 - 0.541430I$ $a = -0.526732 + 0.892898I$ $b = 0.065036 + 0.385894I$	$0.32108 + 4.39805I$	0
$u = 0.853729 + 0.285494I$ $a = -0.543347 - 0.659944I$ $b = 1.020820 - 0.059850I$	$-1.19449 + 4.90633I$	$1.49511 + 0.I$
$u = 0.853729 - 0.285494I$ $a = -0.543347 + 0.659944I$ $b = 1.020820 + 0.059850I$	$-1.19449 - 4.90633I$	$1.49511 + 0.I$
$u = -0.770621 + 0.443457I$ $a = 1.182830 + 0.436102I$ $b = 0.913903 + 0.253008I$	-1.31058	$-6 - 1.00000 + 0.10I$
$u = -0.770621 - 0.443457I$ $a = 1.182830 - 0.436102I$ $b = 0.913903 - 0.253008I$	-1.31058	$-6 - 1.00000 + 0.10I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.636940 + 0.614253I$ $a = 1.97230 - 0.67580I$ $b = 0.75955 - 2.09262I$	$1.98821 - 5.14475I$	$1.15894 + 2.87802I$
$u = -0.636940 - 0.614253I$ $a = 1.97230 + 0.67580I$ $b = 0.75955 + 2.09262I$	$1.98821 + 5.14475I$	$1.15894 - 2.87802I$
$u = -0.982708 + 0.588767I$ $a = 2.05598 - 1.64453I$ $b = 0.60719 - 2.77532I$	$0.94779 + 9.91324I$	0
$u = -0.982708 - 0.588767I$ $a = 2.05598 + 1.64453I$ $b = 0.60719 + 2.77532I$	$0.94779 - 9.91324I$	0
$u = 0.726072 + 0.397331I$ $a = 0.228530 + 0.275068I$ $b = -0.921432 - 0.266276I$	$1.240670 + 0.272253I$	$4.90559 + 1.40386I$
$u = 0.726072 - 0.397331I$ $a = 0.228530 - 0.275068I$ $b = -0.921432 + 0.266276I$	$1.240670 - 0.272253I$	$4.90559 - 1.40386I$
$u = -1.115560 + 0.407709I$ $a = -0.525366 - 0.866763I$ $b = -0.470438 - 0.713792I$	$-2.55962 - 0.56819I$	0
$u = -1.115560 - 0.407709I$ $a = -0.525366 + 0.866763I$ $b = -0.470438 + 0.713792I$	$-2.55962 + 0.56819I$	0
$u = -1.228300 + 0.089688I$ $a = 0.00030 + 1.42724I$ $b = 0.001942 + 1.245290I$	$-2.95867 - 1.76219I$	0
$u = -1.228300 - 0.089688I$ $a = 0.00030 - 1.42724I$ $b = 0.001942 - 1.245290I$	$-2.95867 + 1.76219I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.195920 + 0.308871I$ $a = 0.280220 + 1.105220I$ $b = 0.260029 + 0.942647I$	$-2.80746 + 3.11554I$	0
$u = -1.195920 - 0.308871I$ $a = 0.280220 - 1.105220I$ $b = 0.260029 - 0.942647I$	$-2.80746 - 3.11554I$	0
$u = 1.117620 + 0.541451I$ $a = 0.455569 - 0.426873I$ $b = 0.251455 - 0.081822I$	$-1.19449 - 4.90633I$	0
$u = 1.117620 - 0.541451I$ $a = 0.455569 + 0.426873I$ $b = 0.251455 + 0.081822I$	$-1.19449 + 4.90633I$	0
$u = 1.002330 + 0.741441I$ $a = -0.967924 - 0.751179I$ $b = -0.66959 - 2.18374I$	6.67035	0
$u = 1.002330 - 0.741441I$ $a = -0.967924 + 0.751179I$ $b = -0.66959 + 2.18374I$	6.67035	0
$u = 1.067510 + 0.658022I$ $a = -0.869685 - 0.189017I$ $b = -0.302076 - 0.305752I$	$1.98821 - 5.14475I$	0
$u = 1.067510 - 0.658022I$ $a = -0.869685 + 0.189017I$ $b = -0.302076 + 0.305752I$	$1.98821 + 5.14475I$	0
$u = 1.100320 + 0.643486I$ $a = -1.82351 - 1.35338I$ $b = -0.53477 - 3.38382I$	$-0.15117 - 7.27375I$	0
$u = 1.100320 - 0.643486I$ $a = -1.82351 + 1.35338I$ $b = -0.53477 + 3.38382I$	$-0.15117 + 7.27375I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.053810 + 0.724277I$ $a = 1.17869 + 0.95847I$ $b = 0.61114 + 2.49765I$	$7.69426 - 5.94756I$	0
$u = 1.053810 - 0.724277I$ $a = 1.17869 - 0.95847I$ $b = 0.61114 - 2.49765I$	$7.69426 + 5.94756I$	0
$u = 1.122900 + 0.653215I$ $a = 0.911720 - 0.036398I$ $b = 0.401683 + 0.200042I$	$0.94779 - 9.91324I$	0
$u = 1.122900 - 0.653215I$ $a = 0.911720 + 0.036398I$ $b = 0.401683 - 0.200042I$	$0.94779 + 9.91324I$	0
$u = -1.307610 + 0.078191I$ $a = 0.047475 + 0.477579I$ $b = 1.39323 + 0.46432I$	$1.71328 - 1.77212I$	0
$u = -1.307610 - 0.078191I$ $a = 0.047475 - 0.477579I$ $b = 1.39323 - 0.46432I$	$1.71328 + 1.77212I$	0
$u = 0.209151 + 0.653417I$ $a = -0.350286 - 0.352621I$ $b = -0.604455 + 0.140178I$	$1.240670 + 0.272253I$	$4.90559 + 1.40386I$
$u = 0.209151 - 0.653417I$ $a = -0.350286 + 0.352621I$ $b = -0.604455 - 0.140178I$	$1.240670 - 0.272253I$	$4.90559 - 1.40386I$
$u = 1.144110 + 0.674165I$ $a = 1.41189 + 1.53805I$ $b = 0.13026 + 2.98702I$	$5.96795 - 10.55640I$	0
$u = 1.144110 - 0.674165I$ $a = 1.41189 - 1.53805I$ $b = 0.13026 - 2.98702I$	$5.96795 + 10.55640I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.322010 + 0.130704I$ $a = \quad 0.130195 - 0.748866I$ $b = -1.24973 - 0.75426I$	$-0.15117 - 7.27375I$	0
$u = -1.322010 - 0.130704I$ $a = \quad 0.130195 + 0.748866I$ $b = -1.24973 + 0.75426I$	$-0.15117 + 7.27375I$	0
$u = -0.114209 + 0.585210I$ $a = \quad 0.862900 + 0.756442I$ $b = \quad 0.850025 + 0.016896I$	$0.32108 + 4.39805I$	$1.68085 - 6.72354I$
$u = -0.114209 - 0.585210I$ $a = \quad 0.862900 - 0.756442I$ $b = \quad 0.850025 - 0.016896I$	$0.32108 - 4.39805I$	$1.68085 + 6.72354I$
$u = -0.085935 + 0.142884I$ $a = \quad 4.58644 + 1.21264I$ $b = \quad 0.298158 - 0.682511I$	$-1.74022 + 0.71657I$	$-3.97070 - 0.74474I$
$u = -0.085935 - 0.142884I$ $a = \quad 4.58644 - 1.21264I$ $b = \quad 0.298158 + 0.682511I$	$-1.74022 - 0.71657I$	$-3.97070 + 0.74474I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 3u^4 + 2u^3 - 3u^2 + 2u - 1$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.002190 + 0.295542I$ $a = -0.66103 + 1.45708I$ $b = 0.25695 + 1.72779I$	$-3.53554 + 0.92430I$	$-5.77331 + 0.83820I$
$u = -1.002190 - 0.295542I$ $a = -0.66103 - 1.45708I$ $b = 0.25695 - 1.72779I$	$-3.53554 - 0.92430I$	$-5.77331 - 0.83820I$
$u = 0.428243 + 0.664531I$ $a = 0.769407 - 0.497010I$ $b = 0.084211 + 0.566250I$	$0.245672 + 0.924305I$	$-1.11831 - 1.11590I$
$u = 0.428243 - 0.664531I$ $a = 0.769407 + 0.497010I$ $b = 0.084211 - 0.566250I$	$0.245672 - 0.924305I$	$-1.11831 + 1.11590I$
$u = 1.073950 + 0.558752I$ $a = 0.391622 + 0.558752I$ $b = -0.341164 + 0.940004I$	$-1.64493 - 5.69302I$	$-3.10838 + 7.09196I$
$u = 1.073950 - 0.558752I$ $a = 0.391622 - 0.558752I$ $b = -0.341164 - 0.940004I$	$-1.64493 + 5.69302I$	$-3.10838 - 7.09196I$

IV.

$$\boldsymbol{I_4^u = \langle -2a^5 + 2a^4 - 7a^3 + 5a^2 + 3b - 4a + 4,\ a^6 + 4a^4 + a^3 + 4a^2 + 1,\ u + 1\rangle}$$

(i) Arc colorings

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

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} a \\ \frac{2}{3}a^5 - \frac{2}{3}a^4 + \cdots + \frac{4}{3}a - \frac{4}{3} \end{pmatrix}$$

$$a_6 = \begin{pmatrix} \frac{2}{3}a^5 + \frac{1}{3}a^4 + \cdots + \frac{4}{3}a + \frac{5}{3} \\ 0 \end{pmatrix}$$

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

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

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

$$a_7 = \begin{pmatrix} \frac{2}{3}a^5 + \frac{1}{3}a^4 + \cdots + \frac{4}{3}a + \frac{5}{3} \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} \frac{1}{3}a^5 - \frac{1}{3}a^4 + \cdots - \frac{1}{3}a - \frac{2}{3} \\ -\frac{2}{3}a^5 - \frac{1}{3}a^4 + \cdots - \frac{4}{3}a - \frac{5}{3} \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0 \\ -\frac{2}{3}a^5 - \frac{1}{3}a^4 + \cdots - \frac{4}{3}a - \frac{5}{3} \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0 \\ -\frac{2}{3}a^5 - \frac{1}{3}a^4 + \cdots - \frac{4}{3}a - \frac{5}{3} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4a^5 - a^4 - 12a^3 - 8a^2 - 4a - 4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^6$
c_2, c_4	$(u+1)^6$
c_3, c_6	u^6
c_5, c_{10}	$u^6 - u^5 - u^4 + 2u^3 - u + 1$
c_7	$u^6 - 3u^5 + 5u^4 - 4u^3 + 2u^2 - u + 1$
c_8, c_9	$u^6 + u^5 - u^4 - 2u^3 + u + 1$
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_2, c_4	$(y-1)^6$
c_3, c_6	y^6
c_5, c_8, c_9 c_{10}	$y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1$
c_7, c_{11}	$y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = -0.341164 + 0.940004I$ $b = 0.732786 + 0.381252I$	$-1.64493 - 5.69302I$	$-3.10838 + 7.09196I$
$u = -1.00000$ $a = -0.341164 - 0.940004I$ $b = 0.732786 - 0.381252I$	$-1.64493 + 5.69302I$	$-3.10838 - 7.09196I$
$u = -1.00000$ $a = 0.084211 + 0.566250I$ $b = -0.917982 + 0.270708I$	$0.245672 + 0.924305I$	$-1.11831 - 1.11590I$
$u = -1.00000$ $a = 0.084211 - 0.566250I$ $b = -0.917982 - 0.270708I$	$0.245672 - 0.924305I$	$-1.11831 + 1.11590I$
$u = -1.00000$ $a = 0.25695 + 1.72779I$ $b = 0.685196 + 1.063260I$	$-3.53554 + 0.92430I$	$-5.77331 + 0.83820I$
$u = -1.00000$ $a = 0.25695 - 1.72779I$ $b = 0.685196 - 1.063260I$	$-3.53554 - 0.92430I$	$-5.77331 - 0.83820I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_8	$((u-1)^6)(u^6+u^5+\cdots+u+1)(u^{12}-2u^{11}+\cdots-3u+1)$ $\cdot(u^{66}-6u^{65}+\cdots+u+1)$
c_2, c_{11}	$((u+1)^6)(u^6+3u^5+\cdots+u+1)(u^{12}+6u^{11}+\cdots+3u+1)$ $\cdot(u^{66}+30u^{65}+\cdots-25u+1)$
c_3, c_5	$u^6(u^6-u^5-u^4+2u^3-u+1)$ $\cdot(u^{12}-3u^{10}+5u^8+2u^7-2u^6-5u^5+4u^3+u^2-3u+1)$ $\cdot(u^{66}-2u^{65}+\cdots-64u+64)$
c_4, c_{10}	$((u+1)^6)(u^6-u^5+\cdots-u+1)(u^{12}-2u^{11}+\cdots-3u+1)$ $\cdot(u^{66}-6u^{65}+\cdots+u+1)$
c_6, c_9	$u^6(u^6+u^5-u^4-2u^3+u+1)$ $\cdot(u^{12}-3u^{10}+5u^8+2u^7-2u^6-5u^5+4u^3+u^2-3u+1)$ $\cdot(u^{66}-2u^{65}+\cdots-64u+64)$
c_7	$((u^6-3u^5+5u^4-4u^3+2u^2-u+1)^2)(u^{12}+7u^{11}+\cdots+36u+8)$ $\cdot(u^{33}-2u^{32}+\cdots+84u+49)^2$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_8 c_{10}	$((y-1)^6)(y^6-3y^5+\cdots-y+1)(y^{12}-6y^{11}+\cdots-3y+1)$ $\cdot(y^{66}-30y^{65}+\cdots+25y+1)$
c_2, c_{11}	$((y-1)^6)(y^6+y^5+\cdots+3y+1)(y^{12}+2y^{11}+\cdots+25y+1)$ $\cdot(y^{66}+18y^{65}+\cdots+1453y+1)$
c_3, c_5, c_6 c_9	$y^6(y^6-3y^5+\cdots-y+1)(y^{12}-6y^{11}+\cdots-7y+1)$ $\cdot(y^{66}-36y^{65}+\cdots-36864y+4096)$
c_7	$((y^6+y^5+5y^4+6y^2+3y+1)^2)(y^{12}-5y^{11}+\cdots-112y+64)$ $\cdot(y^{33}-14y^{32}+\cdots-3528y-2401)^2$