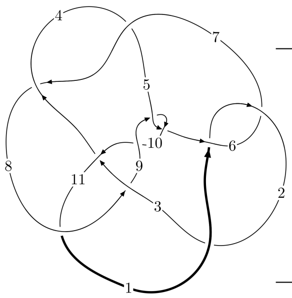
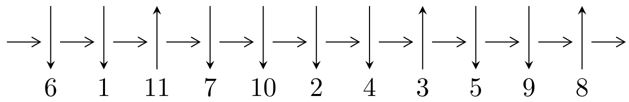
$11a_{197}$ ($K11a_{197}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle b - u,\ 1133732u^{18} - 5530440u^{17} + \cdots + 1639243a + 14603996,\ u^{19} - 3u^{17} + \cdots + 5u + 1\rangle$$
$$I_2^u = \langle 4.04940 \times 10^{223}u^{67} + 3.30886 \times 10^{224}u^{66} + \cdots + 4.64646 \times 10^{224}b - 5.28089 \times 10^{226},$$
$$2.91872 \times 10^{228}u^{67} + 2.08756 \times 10^{229}u^{66} + \cdots + 5.97071 \times 10^{227}a - 5.77931 \times 10^{230},$$
$$u^{68} + 7u^{67} + \cdots + 375u + 257\rangle$$
$$I_3^u = \langle b + u,\ u^7 + u^6 - 2u^4 + u^2 + a + 2u - 1,\ u^8 - u^6 - u^5 + 2u^4 - u + 1\rangle$$
$$I_4^u = \langle -3u^7 - 2u^6 + 2u^5 - 4u^4 + 3u^2 + b - 7u + 4,\ -4u^7 - 3u^6 + 2u^5 - 6u^4 - u^3 + 3u^2 + a - 9u + 5,$$
$$u^8 - u^6 + 2u^5 - u^4 - u^3 + 3u^2 - 3u + 1\rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 103 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. $\boldsymbol{I^u_1 = \langle b-u,\ 1.13\times 10^6 u^{18} - 5.53\times 10^6 u^{17} + \cdots + 1.64\times 10^6 a + 1.46\times 10^7,\ u^{19} - 3u^{17} + \cdots + 5u + 1\rangle}$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.691619u^{18} + 3.37378u^{17} + \cdots - 28.3695u - 8.90899 \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.691619u^{18} + 3.37378u^{17} + \cdots - 29.3695u - 8.90899 \\ u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -4.15807u^{18} - 6.66141u^{17} + \cdots + 52.3548u + 8.42543 \\ 0.622113u^{18} + 1.86560u^{17} + \cdots - 15.1773u - 3.37378 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.0695059u^{18} + 5.23938u^{17} + \cdots - 44.5467u - 12.2828 \\ -0.756830u^{18} - 1.16457u^{17} + \cdots + 10.9501u + 1.86560 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -2.91384u^{18} - 2.93021u^{17} + \cdots + 20.0003u + 1.67787 \\ 0.622113u^{18} + 1.86560u^{17} + \cdots - 15.1773u - 3.37378 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 4.05196u^{18} - 2.08218u^{17} + \cdots + 21.9378u + 3.05750 \\ -1.38107u^{18} - 0.495631u^{17} + \cdots + 2.38762u - 0.443568 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 4.07319u^{18} + 0.0169841u^{17} + \cdots - 3.37920u - 2.08628 \\ -1.50818u^{18} + 0.134717u^{17} + \cdots - 1.03345u - 1.31373 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1.53997u^{18} - 5.15071u^{17} + \cdots + 38.3233u + 9.86555 \\ 0.959164u^{18} + 1.36657u^{17} + \cdots - 11.2769u - 2.27262 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1.53997u^{18} - 5.15071u^{17} + \cdots + 38.3233u + 9.86555 \\ 0.959164u^{18} + 1.36657u^{17} + \cdots - 11.2769u - 2.27262 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{18167001}{1639243}u^{18} - \frac{11571693}{1639243}u^{17} + \cdots + \frac{103230908}{1639243}u - \frac{4877099}{1639243}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_6 c_9	$u^{19} - 4u^{17} + \cdots - u + 1$
c_2, c_{10}	$u^{19} + 8u^{18} + \cdots + 5u + 1$
c_3, c_{11}	$u^{19} - 3u^{17} + \cdots + 5u + 1$
c_4, c_7	$u^{19} - 12u^{18} + \cdots - 224u + 32$
c_8	$u^{19} - 18u^{18} + \cdots - 1184u + 192$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_6 c_9	$y^{19} - 8y^{18} + \cdots + 5y - 1$
c_2, c_{10}	$y^{19} + 12y^{18} + \cdots - 23y - 1$
c_3, c_{11}	$y^{19} - 6y^{18} + \cdots + 29y - 1$
c_4, c_7	$y^{19} + 12y^{18} + \cdots + 1536y - 1024$
c_8	$y^{19} - 4y^{18} + \cdots + 50176y - 36864$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.922328 + 0.410149I$ $a = -0.097023 + 0.610902I$ $b = 0.922328 + 0.410149I$	$1.76273 + 1.04354I$	$2.78842 - 1.15879I$
$u = 0.922328 - 0.410149I$ $a = -0.097023 - 0.610902I$ $b = 0.922328 - 0.410149I$	$1.76273 - 1.04354I$	$2.78842 + 1.15879I$
$u = -0.299279 + 0.864422I$ $a = 0.725338 + 0.593270I$ $b = -0.299279 + 0.864422I$	$-5.58807 + 2.35049I$	$-13.53566 - 3.60952I$
$u = -0.299279 - 0.864422I$ $a = 0.725338 - 0.593270I$ $b = -0.299279 - 0.864422I$	$-5.58807 - 2.35049I$	$-13.53566 + 3.60952I$
$u = 0.935316 + 0.630010I$ $a = -0.525722 + 0.984674I$ $b = 0.935316 + 0.630010I$	$2.13851 + 0.27818I$	$-1.57258 + 0.84514I$
$u = 0.935316 - 0.630010I$ $a = -0.525722 - 0.984674I$ $b = 0.935316 - 0.630010I$	$2.13851 - 0.27818I$	$-1.57258 - 0.84514I$
$u = 0.864210 + 0.035102I$ $a = -0.89308 + 1.80124I$ $b = 0.864210 + 0.035102I$	$4.69963 + 7.70569I$	$1.03497 - 7.90507I$
$u = 0.864210 - 0.035102I$ $a = -0.89308 - 1.80124I$ $b = 0.864210 - 0.035102I$	$4.69963 - 7.70569I$	$1.03497 + 7.90507I$
$u = -0.826242 + 0.780318I$ $a = 0.848642 + 0.882375I$ $b = -0.826242 + 0.780318I$	$0.40114 - 10.64020I$	$-4.95980 + 10.11213I$
$u = -0.826242 - 0.780318I$ $a = 0.848642 - 0.882375I$ $b = -0.826242 - 0.780318I$	$0.40114 + 10.64020I$	$-4.95980 - 10.11213I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.819203+0.976775I$ $a=-0.346065+0.826042I$ $b=-0.819203+0.976775I$	$-3.89495-2.33301I$	$-11.16071+2.50399I$
$u=-0.819203-0.976775I$ $a=-0.346065-0.826042I$ $b=-0.819203-0.976775I$	$-3.89495+2.33301I$	$-11.16071-2.50399I$
$u=-0.650261+0.049079I$ $a=\ \ 0.38648+2.74023I$ $b=-0.650261+0.049079I$	$6.12689+2.86646I$	$4.56371-2.58319I$
$u=-0.650261-0.049079I$ $a=\ \ 0.38648-2.74023I$ $b=-0.650261-0.049079I$	$6.12689-2.86646I$	$4.56371+2.58319I$
$u=\ \ 1.27254+0.88593I$ $a=\ \ 0.346542+0.895806I$ $b=\ \ 1.27254+0.88593I$	$8.44383+4.90113I$	$0.70738-1.64116I$
$u=\ \ 1.27254-0.88593I$ $a=\ \ 0.346542-0.895806I$ $b=\ \ 1.27254-0.88593I$	$8.44383-4.90113I$	$0.70738+1.64116I$
$u=-1.29108+0.99217I$ $a=-0.262717+0.934110I$ $b=-1.29108+0.99217I$	$5.2789-17.4106I$	$-3.33834+9.88959I$
$u=-1.29108-0.99217I$ $a=-0.262717-0.934110I$ $b=-1.29108-0.99217I$	$5.2789+17.4106I$	$-3.33834-9.88959I$
$u=-0.216670$ $a=-2.36478$ $b=-0.216670$	-0.903842	-11.0550

II. $\boldsymbol{I^u_2 = \langle 4.05 \times 10^{223}u^{67} + 3.31 \times 10^{224}u^{66} + \cdots + 4.65 \times 10^{224}b - 5.28 \times 10^{226},\ 2.92 \times 10^{228}u^{67} + 2.09 \times 10^{229}u^{66} + \cdots + 5.97 \times 10^{227}a - 5.78 \times 10^{230},\ u^{68} + 7u^{67} + \cdots + 375u + 257\rangle}$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -4.88839u^{67} - 34.9634u^{66} + \cdots + 4825.34u + 967.944 \\ -0.0871501u^{67} - 0.712125u^{66} + \cdots + 396.084u + 113.654 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -4.80124u^{67} - 34.2513u^{66} + \cdots + 4429.26u + 854.290 \\ -0.0871501u^{67} - 0.712125u^{66} + \cdots + 396.084u + 113.654 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -7.99115u^{67} - 60.4866u^{66} + \cdots + 10430.3u + 3443.31 \\ 1.61940u^{67} + 12.4687u^{66} + \cdots - 2290.63u - 756.650 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -6.77651u^{67} - 48.1052u^{66} + \cdots + 6300.23u + 1133.09 \\ 0.666031u^{67} + 4.36174u^{66} + \cdots - 121.691u + 106.711 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -4.48948u^{67} - 33.7015u^{66} + \cdots + 5341.98u + 1665.92 \\ 1.88227u^{67} + 14.3164u^{66} + \cdots - 2795.65u - 1020.74 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1.28662u^{67} + 6.44767u^{66} + \cdots - 34.9011u + 812.874 \\ 0.546402u^{67} + 5.09202u^{66} + \cdots - 1326.15u - 757.561 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -4.16324u^{67} - 34.1080u^{66} + \cdots + 8461.50u + 3399.72 \\ 0.717867u^{67} + 6.15447u^{66} + \cdots - 1764.97u - 755.279 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -5.80661u^{67} - 43.0967u^{66} + \cdots + 4592.48u + 1354.29 \\ 2.28558u^{67} + 17.7608u^{66} + \cdots - 2796.80u - 1065.18 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -5.80661u^{67} - 43.0967u^{66} + \cdots + 4592.48u + 1354.29 \\ 2.28558u^{67} + 17.7608u^{66} + \cdots - 2796.80u - 1065.18 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.644686u^{67} + 6.72660u^{66} + \cdots - 1138.68u - 1495.39$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_6 c_9	$u^{68} - u^{67} + \cdots - 12u + 1$
c_2, c_{10}	$u^{68} + 25u^{67} + \cdots + 60u + 1$
c_3, c_{11}	$u^{68} + 7u^{67} + \cdots + 375u + 257$
c_4, c_7	$(u^{34} + 5u^{33} + \cdots + 34u + 5)^2$
c_8	$(u^{34} + 9u^{33} + \cdots + 4u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_6 c_9	$y^{68} - 25y^{67} + \cdots - 60y + 1$
c_2, c_{10}	$y^{68} + 39y^{67} + \cdots - 600y + 1$
c_3, c_{11}	$y^{68} - 15y^{67} + \cdots - 2055275y + 66049$
c_4, c_7	$(y^{34} + 29y^{33} + \cdots - 606y + 25)^2$
c_8	$(y^{34} - 7y^{33} + \cdots - 22y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.935366 + 0.409909I$		
$a = 0.174120 - 0.076305I$	2.60763	0
$b = 0.935366 - 0.409909I$		
$u = 0.935366 - 0.409909I$		
$a = 0.174120 + 0.076305I$	2.60763	0
$b = 0.935366 + 0.409909I$		
$u = -0.654321 + 0.803747I$		
$a = -0.383222 - 0.470738I$	0.823819	0
$b = -0.654321 - 0.803747I$		
$u = -0.654321 - 0.803747I$		
$a = -0.383222 + 0.470738I$	0.823819	0
$b = -0.654321 + 0.803747I$		
$u = 0.086992 + 0.928184I$		
$a = -1.49441 - 0.34424I$	$4.05974 + 3.04464I$	$-5.00000 - 5.02705I$
$b = -0.718586 - 0.099000I$		
$u = 0.086992 - 0.928184I$		
$a = -1.49441 + 0.34424I$	$4.05974 - 3.04464I$	$-5.00000 + 5.02705I$
$b = -0.718586 + 0.099000I$		
$u = 0.888058 + 0.145938I$		
$a = -0.362458 + 1.265120I$	$1.66267 + 2.38839I$	$-5.00000 - 3.92268I$
$b = 1.096870 + 0.603105I$		
$u = 0.888058 - 0.145938I$		
$a = -0.362458 - 1.265120I$	$1.66267 - 2.38839I$	$-5.00000 + 3.92268I$
$b = 1.096870 - 0.603105I$		
$u = -0.885212 + 0.660115I$		
$a = -0.747811 - 0.890107I$	$1.50330 - 5.20280I$	0
$b = 0.786877 - 0.792245I$		
$u = -0.885212 - 0.660115I$		
$a = -0.747811 + 0.890107I$	$1.50330 + 5.20280I$	0
$b = 0.786877 + 0.792245I$		

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.645959 + 0.609538I$ $a = -0.819920 - 0.300054I$ $b = 0.237861 - 0.469376I$	$-1.64111 - 0.20863I$	$-8.20722 + 0.I$
$u = -0.645959 - 0.609538I$ $a = -0.819920 + 0.300054I$ $b = 0.237861 + 0.469376I$	$-1.64111 + 0.20863I$	$-8.20722 + 0.I$
$u = 0.786877 + 0.792245I$ $a = 0.601596 - 0.979699I$ $b = -0.885212 - 0.660115I$	$1.50330 + 5.20280I$	0
$u = 0.786877 - 0.792245I$ $a = 0.601596 + 0.979699I$ $b = -0.885212 + 0.660115I$	$1.50330 - 5.20280I$	0
$u = -1.027720 + 0.439350I$ $a = -0.144640 - 0.772915I$ $b = 0.720497 - 0.909017I$	$-0.25133 - 4.16817I$	0
$u = -1.027720 - 0.439350I$ $a = -0.144640 + 0.772915I$ $b = 0.720497 + 0.909017I$	$-0.25133 + 4.16817I$	0
$u = 0.695237 + 0.876261I$ $a = -0.463175 + 0.146177I$ $b = -1.029460 + 0.540394I$	$1.12918 + 5.12471I$	0
$u = 0.695237 - 0.876261I$ $a = -0.463175 - 0.146177I$ $b = -1.029460 - 0.540394I$	$1.12918 - 5.12471I$	0
$u = 0.720497 + 0.909017I$ $a = -0.232294 - 0.721216I$ $b = -1.027720 - 0.439350I$	$-0.25133 + 4.16817I$	0
$u = 0.720497 - 0.909017I$ $a = -0.232294 + 0.721216I$ $b = -1.027720 + 0.439350I$	$-0.25133 - 4.16817I$	0

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.029460 + 0.540394I$ $a = 0.221154 + 0.411620I$ $b = 0.695237 + 0.876261I$	$1.12918 + 5.12471I$	0
$u = -1.029460 - 0.540394I$ $a = 0.221154 - 0.411620I$ $b = 0.695237 - 0.876261I$	$1.12918 - 5.12471I$	0
$u = -0.829237 + 0.028303I$ $a = -0.69769 - 2.02660I$ $b = 0.597312 - 0.062789I$	$5.57461 - 2.65210I$	$3.99824 + 1.76358I$
$u = -0.829237 - 0.028303I$ $a = -0.69769 + 2.02660I$ $b = 0.597312 + 0.062789I$	$5.57461 + 2.65210I$	$3.99824 - 1.76358I$
$u = 0.750141 + 0.908115I$ $a = -0.606651 - 0.697727I$ $b = -1.56205 - 0.58113I$	$0.20559 + 3.65421I$	0
$u = 0.750141 - 0.908115I$ $a = -0.606651 + 0.697727I$ $b = -1.56205 + 0.58113I$	$0.20559 - 3.65421I$	0
$u = -0.765342 + 0.905693I$ $a = -0.601112 + 0.874358I$ $b = -1.57861 + 0.95684I$	$-0.84333 - 8.53070I$	0
$u = -0.765342 - 0.905693I$ $a = -0.601112 - 0.874358I$ $b = -1.57861 - 0.95684I$	$-0.84333 + 8.53070I$	0
$u = 0.735761 + 0.292287I$ $a = 0.66785 + 1.40228I$ $b = 1.73061 + 1.32358I$	$6.19582 - 1.01878I$	$4.58808 - 1.16723I$
$u = 0.735761 - 0.292287I$ $a = 0.66785 - 1.40228I$ $b = 1.73061 - 1.32358I$	$6.19582 + 1.01878I$	$4.58808 + 1.16723I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.711895+0.258153I$ $a=\ 0.58405-1.65179I$ $b=\ 1.45720-1.66487I$	$6.41329-4.23932I$	$5.89514+7.96165I$
$u=-0.711895-0.258153I$ $a=\ 0.58405+1.65179I$ $b=\ 1.45720+1.66487I$	$6.41329+4.23932I$	$5.89514-7.96165I$
$u=\ 1.096870+0.603105I$ $a=\ 0.057508+0.944434I$ $b=\ 0.888058+0.145938I$	$1.66267+2.38839I$	0
$u=\ 1.096870-0.603105I$ $a=\ 0.057508-0.944434I$ $b=\ 0.888058-0.145938I$	$1.66267-2.38839I$	0
$u=-0.869088+0.901011I$ $a=\ 0.563739+0.260530I$ $b=-0.476889+0.496046I$	$-3.86295-4.69165I$	0
$u=-0.869088-0.901011I$ $a=\ 0.563739-0.260530I$ $b=-0.476889-0.496046I$	$-3.86295+4.69165I$	0
$u=-0.718586+0.099000I$ $a=\ 0.00780-1.97090I$ $b=\ 0.086992-0.928184I$	$4.05974-3.04464I$	$-8.15642+5.02705I$
$u=-0.718586-0.099000I$ $a=\ 0.00780+1.97090I$ $b=\ 0.086992+0.928184I$	$4.05974+3.04464I$	$-8.15642-5.02705I$
$u=-0.476889+0.496046I$ $a=\ 1.024820+0.475673I$ $b=-0.869088+0.901011I$	$-3.86295-4.69165I$	$-11.49179+4.07331I$
$u=-0.476889-0.496046I$ $a=\ 1.024820-0.475673I$ $b=-0.869088-0.901011I$	$-3.86295+4.69165I$	$-11.49179-4.07331I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.636750 + 0.128166I$ $a = 0.04371 - 1.98902I$ $b = -0.66517 - 1.83516I$	$4.76682 - 3.09252I$	$3.99662 + 6.42171I$
$u = -0.636750 - 0.128166I$ $a = 0.04371 + 1.98902I$ $b = -0.66517 + 1.83516I$	$4.76682 + 3.09252I$	$3.99662 - 6.42171I$
$u = 0.614911 + 0.115807I$ $a = -0.08677 + 1.88600I$ $b = -1.27800 + 1.84734I$	$3.65105 + 8.06945I$	$2.24961 - 10.45643I$
$u = 0.614911 - 0.115807I$ $a = -0.08677 - 1.88600I$ $b = -1.27800 - 1.84734I$	$3.65105 - 8.06945I$	$2.24961 + 10.45643I$
$u = 0.609867 + 0.075529I$ $a = 0.41718 + 1.72597I$ $b = -1.219630 + 0.681568I$	$0.49208 + 2.14474I$	$-4.47534 - 2.22851I$
$u = 0.609867 - 0.075529I$ $a = 0.41718 - 1.72597I$ $b = -1.219630 - 0.681568I$	$0.49208 - 2.14474I$	$-4.47534 + 2.22851I$
$u = -1.219630 + 0.681568I$ $a = 0.301017 - 0.720678I$ $b = 0.609867 + 0.075529I$	$0.49208 + 2.14474I$	0
$u = -1.219630 - 0.681568I$ $a = 0.301017 + 0.720678I$ $b = 0.609867 - 0.075529I$	$0.49208 - 2.14474I$	0
$u = 0.597312 + 0.062789I$ $a = 0.76391 - 2.86073I$ $b = -0.829237 - 0.028303I$	$5.57461 + 2.65210I$	$3.99824 - 1.76358I$
$u = 0.597312 - 0.062789I$ $a = 0.76391 + 2.86073I$ $b = -0.829237 + 0.028303I$	$5.57461 - 2.65210I$	$3.99824 + 1.76358I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.237861 + 0.469376I$ $a = 1.13072 - 0.94503I$ $b = -0.645959 - 0.609538I$	$-1.64111 + 0.20863I$	$-8.20722 + 0.26692I$
$u = 0.237861 - 0.469376I$ $a = 1.13072 + 0.94503I$ $b = -0.645959 + 0.609538I$	$-1.64111 - 0.20863I$	$-8.20722 - 0.26692I$
$u = -1.21547 + 0.86314I$ $a = 0.310422 - 0.988272I$ $b = 1.32582 - 1.03680I$	$7.06234 - 11.08520I$	0
$u = -1.21547 - 0.86314I$ $a = 0.310422 + 0.988272I$ $b = 1.32582 + 1.03680I$	$7.06234 + 11.08520I$	0
$u = -1.56205 + 0.58113I$ $a = 0.124351 - 0.641489I$ $b = 0.750141 - 0.908115I$	$0.20559 - 3.65421I$	0
$u = -1.56205 - 0.58113I$ $a = 0.124351 + 0.641489I$ $b = 0.750141 + 0.908115I$	$0.20559 + 3.65421I$	0
$u = 1.32582 + 1.03680I$ $a = -0.315066 - 0.861723I$ $b = -1.21547 - 0.86314I$	$7.06234 + 11.08520I$	0
$u = 1.32582 - 1.03680I$ $a = -0.315066 + 0.861723I$ $b = -1.21547 + 0.86314I$	$7.06234 - 11.08520I$	0
$u = -1.57861 + 0.95684I$ $a = -0.187050 + 0.655406I$ $b = -0.765342 + 0.905693I$	$-0.84333 - 8.53070I$	0
$u = -1.57861 - 0.95684I$ $a = -0.187050 - 0.655406I$ $b = -0.765342 - 0.905693I$	$-0.84333 + 8.53070I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.66517+1.83516I$ $a=-0.652341+0.112700I$ $b=-0.636750-0.128166I$	$4.76682+3.09252I$	0
$u=-0.66517-1.83516I$ $a=-0.652341-0.112700I$ $b=-0.636750+0.128166I$	$4.76682-3.09252I$	0
$u=\ 1.73061+1.32358I$ $a=\ 0.371829+0.424591I$ $b=\ 0.735761+0.292287I$	$6.19582-1.01878I$	0
$u=\ 1.73061-1.32358I$ $a=\ 0.371829-0.424591I$ $b=\ 0.735761-0.292287I$	$6.19582+1.01878I$	0
$u=\ 1.45720+1.66487I$ $a=-0.448039-0.398539I$ $b=-0.711895-0.258153I$	$6.41329+4.23932I$	0
$u=\ 1.45720-1.66487I$ $a=-0.448039+0.398539I$ $b=-0.711895+0.258153I$	$6.41329-4.23932I$	0
$u=-1.27800+1.84734I$ $a=\ 0.489733-0.191687I$ $b=\ 0.614911+0.115807I$	$3.65105+8.06945I$	0
$u=-1.27800-1.84734I$ $a=\ 0.489733+0.191687I$ $b=\ 0.614911-0.115807I$	$3.65105-8.06945I$	0

III. $\boldsymbol{I_3^u = \langle b+u,\ u^7+u^6-2u^4+u^2+a+2u-1,\ u^8-u^6-u^5+2u^4-u+1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^7+3u^6+6u^5+2u^4-9u^3-u^2-u-1$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^8 - 2u^6 + 3u^4 + u^3 - 2u^2 - u + 1$
c_2, c_{10}	$u^8 + 4u^7 + 10u^6 + 16u^5 + 19u^4 + 17u^3 + 12u^2 + 5u + 1$
c_3, c_{11}	$u^8 - u^6 - u^5 + 2u^4 - u + 1$
c_4	$u^8 - u^7 + 4u^6 - 4u^5 + 6u^4 - 5u^3 + 5u^2 - 2u + 1$
c_6, c_9	$u^8 - 2u^6 + 3u^4 - u^3 - 2u^2 + u + 1$
c_7	$u^8 + u^7 + 4u^6 + 4u^5 + 6u^4 + 5u^3 + 5u^2 + 2u + 1$
c_8	$u^8 + 3u^7 + 3u^6 + u^5 - u^4 - u^3 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_6 c_9	$y^8 - 4y^7 + 10y^6 - 16y^5 + 19y^4 - 17y^3 + 12y^2 - 5y + 1$
c_2, c_{10}	$y^8 + 4y^7 + 10y^6 + 12y^5 + 19y^4 + 27y^3 + 12y^2 - y + 1$
c_3, c_{11}	$y^8 - 2y^7 + 5y^6 - 5y^5 + 6y^4 - 4y^3 + 4y^2 - y + 1$
c_4, c_7	$y^8 + 7y^7 + 20y^6 + 32y^5 + 34y^4 + 27y^3 + 17y^2 + 6y + 1$
c_8	$y^8 - 3y^7 + y^6 - y^5 + 5y^4 + 5y^3 - 2y^2 + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.968184 + 0.381145I$ $a = 0.382665 - 0.800987I$ $b = -0.968184 - 0.381145I$	$0.794315 + 0.862931I$	$-6.95751 - 0.59355I$
$u = 0.968184 - 0.381145I$ $a = 0.382665 + 0.800987I$ $b = -0.968184 + 0.381145I$	$0.794315 - 0.862931I$	$-6.95751 + 0.59355I$
$u = -0.534261 + 0.758391I$ $a = 1.207080 - 0.334530I$ $b = 0.534261 - 0.758391I$	$2.78226 + 7.31144I$	$-4.74402 - 5.01155I$
$u = -0.534261 - 0.758391I$ $a = 1.207080 + 0.334530I$ $b = 0.534261 + 0.758391I$	$2.78226 - 7.31144I$	$-4.74402 + 5.01155I$
$u = 0.585320 + 0.576383I$ $a = -1.24580 - 1.30467I$ $b = -0.585320 - 0.576383I$	$5.20723 + 3.67399I$	$-1.42456 - 6.52580I$
$u = 0.585320 - 0.576383I$ $a = -1.24580 + 1.30467I$ $b = -0.585320 + 0.576383I$	$5.20723 - 3.67399I$	$-1.42456 + 6.52580I$
$u = -1.019240 + 0.742714I$ $a = 0.156057 - 0.473494I$ $b = 1.019240 - 0.742714I$	$-2.20407 - 5.83988I$	$-6.87391 + 7.08087I$
$u = -1.019240 - 0.742714I$ $a = 0.156057 + 0.473494I$ $b = 1.019240 + 0.742714I$	$-2.20407 + 5.83988I$	$-6.87391 - 7.08087I$

IV. $\boldsymbol{I_4^u = \langle -3u^7 - 2u^6 + 2u^5 - 4u^4 + 3u^2 + b - 7u + 4,\ -4u^7 - 3u^6 + \cdots + a + 5,\ u^8 - u^6 + 2u^5 - u^4 - u^3 + 3u^2 - 3u + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -11u^7 - 6u^6 + 10u^5 - 15u^4 + u^3 + 11u^2 - 25u + 11$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^8 - 2u^6 - u^5 + 3u^4 + u^3 - 2u^2 + 1$
c_2, c_{10}	$u^8 + 4u^7 + 10u^6 + 17u^5 + 21u^4 + 17u^3 + 10u^2 + 4u + 1$
c_3, c_{11}	$u^8 - u^6 + 2u^5 - u^4 - u^3 + 3u^2 - 3u + 1$
c_4	$(u^4 + 2u^2 + u + 1)^2$
c_6, c_9	$u^8 - 2u^6 + u^5 + 3u^4 - u^3 - 2u^2 + 1$
c_7	$(u^4 + 2u^2 - u + 1)^2$
c_8	$(u^4 - u^3 + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_6 c_9	$y^8 - 4y^7 + 10y^6 - 17y^5 + 21y^4 - 17y^3 + 10y^2 - 4y + 1$
c_2, c_{10}	$y^8 + 4y^7 + 6y^6 + 15y^5 + 33y^4 + 15y^3 + 6y^2 + 4y + 1$
c_3, c_{11}	$y^8 - 2y^7 - y^6 + 4y^5 + y^4 + 3y^3 + y^2 - 3y + 1$
c_4, c_7	$(y^4 + 4y^3 + 6y^2 + 3y + 1)^2$
c_8	$(y^4 - y^3 + 2y^2 + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.655106 + 0.740977I$ $a = 0.243445 + 0.679234I$ $b = 1.38224 + 0.31096I$	$-1.13814 + 3.38562I$	$-9.49848 - 3.42631I$
$u = 0.655106 - 0.740977I$ $a = 0.243445 - 0.679234I$ $b = 1.38224 - 0.31096I$	$-1.13814 - 3.38562I$	$-9.49848 + 3.42631I$
$u = 0.065777 + 1.058430I$ $a = -1.258400 - 0.403038I$ $b = -0.661359 + 0.124331I$	$4.42801 + 2.37936I$	$-2.50152 + 3.27706I$
$u = 0.065777 - 1.058430I$ $a = -1.258400 + 0.403038I$ $b = -0.661359 - 0.124331I$	$4.42801 - 2.37936I$	$-2.50152 - 3.27706I$
$u = 0.661359 + 0.124331I$ $a = 0.87507 + 1.88950I$ $b = -0.065777 + 1.058430I$	$4.42801 - 2.37936I$	$-2.50152 - 3.27706I$
$u = 0.661359 - 0.124331I$ $a = 0.87507 - 1.88950I$ $b = -0.065777 - 1.058430I$	$4.42801 + 2.37936I$	$-2.50152 + 3.27706I$
$u = -1.38224 + 0.31096I$ $a = 0.139876 + 0.483891I$ $b = -0.655106 + 0.740977I$	$-1.13814 - 3.38562I$	$-9.49848 + 3.42631I$
$u = -1.38224 - 0.31096I$ $a = 0.139876 - 0.483891I$ $b = -0.655106 - 0.740977I$	$-1.13814 + 3.38562I$	$-9.49848 - 3.42631I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_5	$(u^8-2u^6+3u^4+u^3-2u^2-u+1)(u^8-2u^6-u^5+3u^4+u^3-2u^2+1)$ $\cdot(u^{19}-4u^{17}+\cdots-u+1)(u^{68}-u^{67}+\cdots-12u+1)$
c_2, c_{10}	$(u^8+4u^7+10u^6+16u^5+19u^4+17u^3+12u^2+5u+1)$ $\cdot(u^8+4u^7+10u^6+17u^5+21u^4+17u^3+10u^2+4u+1)$ $\cdot(u^{19}+8u^{18}+\cdots+5u+1)(u^{68}+25u^{67}+\cdots+60u+1)$
c_3, c_{11}	$(u^8-u^6-u^5+2u^4-u+1)(u^8-u^6+2u^5-u^4-u^3+3u^2-3u+1)$ $\cdot(u^{19}-3u^{17}+\cdots+5u+1)(u^{68}+7u^{67}+\cdots+375u+257)$
c_4	$(u^4+2u^2+u+1)^2(u^8-u^7+4u^6-4u^5+6u^4-5u^3+5u^2-2u+1)$ $\cdot(u^{19}-12u^{18}+\cdots-224u+32)(u^{34}+5u^{33}+\cdots+34u+5)^2$
c_6, c_9	$(u^8-2u^6+3u^4-u^3-2u^2+u+1)(u^8-2u^6+u^5+3u^4-u^3-2u^2+1)$ $\cdot(u^{19}-4u^{17}+\cdots-u+1)(u^{68}-u^{67}+\cdots-12u+1)$
c_7	$(u^4+2u^2-u+1)^2(u^8+u^7+4u^6+4u^5+6u^4+5u^3+5u^2+2u+1)$ $\cdot(u^{19}-12u^{18}+\cdots-224u+32)(u^{34}+5u^{33}+\cdots+34u+5)^2$
c_8	$(u^4-u^3+1)^2(u^8+3u^7+3u^6+u^5-u^4-u^3+1)$ $\cdot(u^{19}-18u^{18}+\cdots-1184u+192)(u^{34}+9u^{33}+\cdots+4u+1)^2$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_6 c_9	$(y^8 - 4y^7 + 10y^6 - 17y^5 + 21y^4 - 17y^3 + 10y^2 - 4y + 1)$ $\cdot (y^8 - 4y^7 + 10y^6 - 16y^5 + 19y^4 - 17y^3 + 12y^2 - 5y + 1)$ $\cdot (y^{19} - 8y^{18} + \cdots + 5y - 1)(y^{68} - 25y^{67} + \cdots - 60y + 1)$
c_2, c_{10}	$(y^8 + 4y^7 + 6y^6 + 15y^5 + 33y^4 + 15y^3 + 6y^2 + 4y + 1)$ $\cdot (y^8 + 4y^7 + 10y^6 + 12y^5 + 19y^4 + 27y^3 + 12y^2 - y + 1)$ $\cdot (y^{19} + 12y^{18} + \cdots - 23y - 1)(y^{68} + 39y^{67} + \cdots - 600y + 1)$
c_3, c_{11}	$(y^8 - 2y^7 - y^6 + 4y^5 + y^4 + 3y^3 + y^2 - 3y + 1)$ $\cdot (y^8 - 2y^7 + 5y^6 - 5y^5 + 6y^4 - 4y^3 + 4y^2 - y + 1)$ $\cdot (y^{19} - 6y^{18} + \cdots + 29y - 1)(y^{68} - 15y^{67} + \cdots - 2055275y + 66049)$
c_4, c_7	$(y^4 + 4y^3 + 6y^2 + 3y + 1)^2$ $\cdot (y^8 + 7y^7 + 20y^6 + 32y^5 + 34y^4 + 27y^3 + 17y^2 + 6y + 1)$ $\cdot (y^{19} + 12y^{18} + \cdots + 1536y - 1024)(y^{34} + 29y^{33} + \cdots - 606y + 25)^2$
c_8	$(y^4 - y^3 + 2y^2 + 1)^2(y^8 - 3y^7 + y^6 - y^5 + 5y^4 + 5y^3 - 2y^2 + 1)$ $\cdot (y^{19} - 4y^{18} + \cdots + 50176y - 36864)(y^{34} - 7y^{33} + \cdots - 22y + 1)^2$