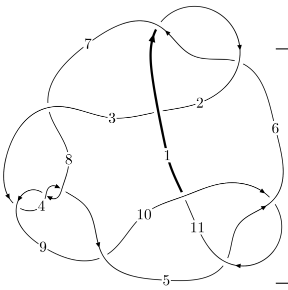
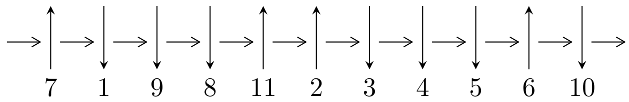
$11a_{181}$ ($K11a_{181}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle b-u,\ u^{13}+2u^{11}+3u^9-u^7-4u^3+u^2+2a+u+1,\\
&\quad u^{14}-u^{13}+4u^{12}-4u^{11}+9u^{10}-9u^9+11u^8-11u^7+10u^6-10u^5+6u^4-5u^3+4u^2-2u+1\rangle\\
I_2^u &= \langle -u^9-2u^7-u^6-2u^5-u^4-u^3-u^2+b-1,\ u^{11}+u^9+2u^8+2u^6-u^5+2u^4-u^3+2a+u-1,\\
&\quad u^{12}+3u^{10}+2u^9+4u^8+4u^7+3u^6+4u^5+u^4+2u^3+u^2+u+2\rangle\\
I_3^u &= \langle -u^9-4u^7+u^6-6u^5+3u^4-3u^3+3u^2+b+u+1,\ -u^8-3u^6-3u^4+a+u+1,\\
&\quad u^{10}-u^9+4u^8-4u^7+6u^6-6u^5+3u^4-3u^3+1\rangle\\
I_4^u &= \langle -u^4-u^3-2u^2+b-a-u-1,\ 2u^4a+2u^3a+u^4+4u^2a+a^2+3au+2u^2+2a-u,\\
&\quad u^5+u^4+2u^3+u^2+u+1\rangle\\
I_5^u &= \langle b-u,\ -2u^4-2u^3-2u^2+a-u,\ u^5+u^4+2u^3+u^2+u+1\rangle\\
I_6^u &= \langle b+u,\ a+2u-1,\ u^2+1\rangle
\end{aligned}$$

* 6 irreducible components of $\dim_{\mathbb{C}}=0$, with total 53 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.

$$I_1^u = \langle b-u,\ u^{13}+2u^{11}+3u^9-u^7-4u^3+u^2+2a+u+1,\ u^{14}-u^{13}+\cdots-2u+1\rangle$$

(i) Arc colorings

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

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

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

$$a_1 = \begin{pmatrix} -u \\ u^3+u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^3 \\ u^5+u^3+u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^6-u^4+1 \\ u^8+2u^6+2u^4 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{1}{2}u^{13}-u^{11}+\cdots-\frac{1}{2}u-\frac{1}{2} \\ u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -\frac{1}{2}u^{13}+u^{12}+\cdots-\frac{3}{2}u+\frac{3}{2} \\ u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^5+u^4-2u^3+u^2-u+1 \\ -\frac{1}{2}u^{13}-2u^{11}+\cdots+\frac{1}{2}u+\frac{1}{2} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -\frac{1}{2}u^{13}-u^{11}+\cdots-\frac{3}{2}u-\frac{1}{2} \\ u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -\frac{1}{2}u^{13}-u^{11}+\cdots-\frac{1}{2}u-\frac{1}{2} \\ u^5+u^3+u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -\frac{1}{2}u^{13}-u^{11}+\cdots-\frac{1}{2}u-\frac{1}{2} \\ u^5+u^3+u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= -4u^{13}+4u^{12}-14u^{11}+12u^{10}-26u^9+24u^8-20u^7+20u^6-10u^5+20u^4-2u^3-6u$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_6 c_{10}	$u^{14} - u^{13} + \cdots - 2u + 1$
c_2, c_{11}	$u^{14} + 7u^{13} + \cdots + 4u + 1$
c_3, c_4, c_8	$u^{14} + 2u^{13} + \cdots + 3u + 2$
c_7, c_9	$u^{14} - 2u^{13} + \cdots - 12u + 8$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_6 c_{10}	$y^{14} + 7y^{13} + \cdots + 4y + 1$
c_2, c_{11}	$y^{14} + 3y^{13} + \cdots + 28y^2 + 1$
c_3, c_4, c_8	$y^{14} + 12y^{13} + \cdots + 11y + 4$
c_7, c_9	$y^{14} - 10y^{13} + \cdots + 496y + 64$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.460484 + 0.954971I$ $a = 1.80473 + 1.22926I$ $b = -0.460484 + 0.954971I$	$-1.77357 - 5.35695I$	$-6.00056 + 9.03526I$
$u = -0.460484 - 0.954971I$ $a = 1.80473 - 1.22926I$ $b = -0.460484 - 0.954971I$	$-1.77357 + 5.35695I$	$-6.00056 - 9.03526I$
$u = -0.628671 + 0.622459I$ $a = 0.748022 + 0.456292I$ $b = -0.628671 + 0.622459I$	$5.80501 - 1.28126I$	$3.72038 + 3.33843I$
$u = -0.628671 - 0.622459I$ $a = 0.748022 - 0.456292I$ $b = -0.628671 - 0.622459I$	$5.80501 + 1.28126I$	$3.72038 - 3.33843I$
$u = 0.582308 + 0.988094I$ $a = -1.26996 + 1.41625I$ $b = 0.582308 + 0.988094I$	$3.60332 + 8.26243I$	$-0.67488 - 8.53661I$
$u = 0.582308 - 0.988094I$ $a = -1.26996 - 1.41625I$ $b = 0.582308 - 0.988094I$	$3.60332 - 8.26243I$	$-0.67488 + 8.53661I$
$u = 0.799677 + 0.138430I$ $a = -0.192212 + 0.103093I$ $b = 0.799677 + 0.138430I$	$1.59498 - 3.95770I$	$0.96673 + 2.71748I$
$u = 0.799677 - 0.138430I$ $a = -0.192212 - 0.103093I$ $b = 0.799677 - 0.138430I$	$1.59498 + 3.95770I$	$0.96673 - 2.71748I$
$u = 0.492502 + 1.221530I$ $a = -1.29138 + 2.41020I$ $b = 0.492502 + 1.221530I$	$-9.30050 + 9.21742I$	$-9.53627 - 6.56177I$
$u = 0.492502 - 1.221530I$ $a = -1.29138 - 2.41020I$ $b = 0.492502 - 1.221530I$	$-9.30050 - 9.21742I$	$-9.53627 + 6.56177I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.525386 + 1.228370I$ $a = 1.17574 + 2.34936I$ $b = -0.525386 + 1.228370I$	$-4.8439 - 13.8790I$	$-5.49540 + 8.77072I$
$u = -0.525386 - 1.228370I$ $a = 1.17574 - 2.34936I$ $b = -0.525386 - 1.228370I$	$-4.8439 + 13.8790I$	$-5.49540 - 8.77072I$
$u = 0.240054 + 0.605061I$ $a = -0.974923 - 0.634482I$ $b = 0.240054 + 0.605061I$	$-0.020113 + 1.303980I$	$-0.98002 - 6.02630I$
$u = 0.240054 - 0.605061I$ $a = -0.974923 + 0.634482I$ $b = 0.240054 - 0.605061I$	$-0.020113 - 1.303980I$	$-0.98002 + 6.02630I$

II. $\boldsymbol{I_2^u = \langle -u^9 - 2u^7 - u^6 - 2u^5 - u^4 - u^3 - u^2 + b - 1,\ u^{11} + u^9 + \cdots + 2a - 1,\ u^{12} + 3u^{10} + \cdots + u + 2\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{10} - 4u^9 - 8u^8 - 16u^7 - 8u^6 - 16u^5 - 4u^4 - 4u^3 - 10$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_6 c_{10}	$y^{12} + 6y^{11} + \cdots + 3y + 4$
c_2, c_{11}	$y^{12} - 2y^{11} + \cdots - y + 16$
c_3, c_4, c_8	$(y^6 + 6y^5 + 13y^4 + 9y^3 - 6y^2 - 8y + 1)^2$
c_7, c_9	$(y^6 - 5y^5 + 8y^4 - 3y^3 + 11y^2 - 29y + 4)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.569850 + 0.878821I$ $a = 0.176883 - 0.327495I$ $b = 0.696319 + 0.473577I$	$5.07386 - 3.39374I$	$2.36018 + 3.51762I$
$u = -0.569850 - 0.878821I$ $a = 0.176883 + 0.327495I$ $b = 0.696319 - 0.473577I$	$5.07386 + 3.39374I$	$2.36018 - 3.51762I$
$u = -0.170932 + 1.042910I$ $a = -0.32398 - 1.97668I$ $b = -0.170932 - 1.042910I$	-3.86646	$-13.16287 + 0.I$
$u = -0.170932 - 1.042910I$ $a = -0.32398 + 1.97668I$ $b = -0.170932 + 1.042910I$	-3.86646	$-13.16287 + 0.I$
$u = -0.885163 + 0.125190I$ $a = -0.598885 + 1.037840I$ $b = 0.508695 + 1.194490I$	$-1.52175 + 8.77346I$	$-2.43784 - 5.90094I$
$u = -0.885163 - 0.125190I$ $a = -0.598885 - 1.037840I$ $b = 0.508695 - 1.194490I$	$-1.52175 - 8.77346I$	$-2.43784 + 5.90094I$
$u = 0.696319 + 0.473577I$ $a = 0.412076 + 0.210997I$ $b = -0.569850 + 0.878821I$	$5.07386 - 3.39374I$	$2.36018 + 3.51762I$
$u = 0.696319 - 0.473577I$ $a = 0.412076 - 0.210997I$ $b = -0.569850 - 0.878821I$	$5.07386 + 3.39374I$	$2.36018 - 3.51762I$
$u = 0.508695 + 1.194490I$ $a = -0.583368 - 0.583465I$ $b = -0.885163 + 0.125190I$	$-1.52175 + 8.77346I$	$-2.43784 - 5.90094I$
$u = 0.508695 - 1.194490I$ $a = -0.583368 + 0.583465I$ $b = -0.885163 - 0.125190I$	$-1.52175 - 8.77346I$	$-2.43784 + 5.90094I$

	Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$0.420932 + 1.237560I$		
$a =$	$0.66727 - 1.96181I$	-9.81751	$-10.68183 + 0.I$
$b =$	$0.420932 - 1.237560I$		
$u =$	$0.420932 - 1.237560I$		
$a =$	$0.66727 + 1.96181I$	-9.81751	$-10.68183 + 0.I$
$b =$	$0.420932 + 1.237560I$		

III.

$\boldsymbol{I_3^u = \langle -u^9 - 4u^7 + \cdots + b + 1,\ -u^8 - 3u^6 - 3u^4 + a + u + 1,\ u^{10} - u^9 + \cdots - 3u^3 + 1\rangle}$

(i) Arc colorings

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

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

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

$$a_1 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^6 - u^4 + 1 \\ u^8 + 2u^6 + 2u^4 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} u^7 + 2u^5 - 2u \\ -u^9 - 3u^7 - 3u^5 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^5 - u \\ -u^7 - u^5 + u \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} u^4 + u^2 - 1 \\ -u^6 - 2u^4 - u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^4 + u^2 - 1 \\ -u^6 - 2u^4 - u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^9 + 12u^7 + 12u^5 - 4u^3 - 8u - 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_4 c_6, c_8	$u^{10} - u^9 + 4u^8 - 4u^7 + 6u^6 - 6u^5 + 3u^4 - 3u^3 + 1$
c_2	$u^{10} + 7u^9 + 20u^8 + 26u^7 + 6u^6 - 22u^5 - 19u^4 + 3u^3 + 6u^2 + 1$
c_5, c_{10}	$(u^5 + u^4 + 2u^3 + u^2 + u + 1)^2$
c_7, c_9	$(u^5 - u^4 - 2u^3 + u^2 + u + 1)^2$
c_{11}	$(u^5 + 3u^4 + 4u^3 + u^2 - u - 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_6, c_8	$y^{10} + 7y^9 + 20y^8 + 26y^7 + 6y^6 - 22y^5 - 19y^4 + 3y^3 + 6y^2 + 1$
c_2	$y^{10} - 9y^9 + \cdots + 12y + 1$
c_5, c_{10}	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)^2$
c_7, c_9	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)^2$
c_{11}	$(y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.839548 + 0.070481I$ $a = 0.727084 + 1.100860I$ $b = -0.455697 + 1.200150I$	$-5.87256 - 4.40083I$	$-6.74431 + 3.49859I$
$u = 0.839548 - 0.070481I$ $a = 0.727084 - 1.100860I$ $b = -0.455697 - 1.200150I$	$-5.87256 + 4.40083I$	$-6.74431 - 3.49859I$
$u = 0.090539 + 1.215350I$ $a = 0.40007 - 1.64065I$ $b = 0.339110 - 0.822375I$	$-0.32910 - 1.53058I$	$-2.51511 + 4.43065I$
$u = 0.090539 - 1.215350I$ $a = 0.40007 + 1.64065I$ $b = 0.339110 + 0.822375I$	$-0.32910 + 1.53058I$	$-2.51511 - 4.43065I$
$u = 0.383413 + 1.200420I$ $a = -0.525385 - 0.755924I$ $b = -0.766826$	-2.40108	$-3.48114 + 0.I$
$u = 0.383413 - 1.200420I$ $a = -0.525385 + 0.755924I$ $b = -0.766826$	-2.40108	$-3.48114 + 0.I$
$u = -0.383851 + 1.270630I$ $a = -0.67357 - 1.92134I$ $b = -0.455697 - 1.200150I$	$-5.87256 + 4.40083I$	$-6.74431 - 3.49859I$
$u = -0.383851 - 1.270630I$ $a = -0.67357 + 1.92134I$ $b = -0.455697 + 1.200150I$	$-5.87256 - 4.40083I$	$-6.74431 + 3.49859I$
$u = -0.429649 + 0.392970I$ $a = -0.928202 - 0.336746I$ $b = 0.339110 + 0.822375I$	$-0.32910 + 1.53058I$	$-2.51511 - 4.43065I$
$u = -0.429649 - 0.392970I$ $a = -0.928202 + 0.336746I$ $b = 0.339110 - 0.822375I$	$-0.32910 - 1.53058I$	$-2.51511 + 4.43065I$

IV. $\boldsymbol{I^u_4 =}$
$\boldsymbol{\langle -u^4-u^3-2u^2+b-a-u-1,\ 2u^4a+u^4+\cdots+a^2+2a,\ u^5+u^4+2u^3+u^2+u+1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^3-4u^2-4u-6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$(u^5 + u^4 + 2u^3 + u^2 + u + 1)^2$
c_2	$(u^5 + 3u^4 + 4u^3 + u^2 - u - 1)^2$
c_3, c_4, c_5 c_8, c_{10}	$u^{10} - u^9 + 4u^8 - 4u^7 + 6u^6 - 6u^5 + 3u^4 - 3u^3 + 1$
c_7, c_9	$(u^5 - u^4 - 2u^3 + u^2 + u + 1)^2$
c_{11}	$u^{10} + 7u^9 + 20u^8 + 26u^7 + 6u^6 - 22u^5 - 19u^4 + 3u^3 + 6u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)^2$
c_2	$(y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1)^2$
c_3, c_4, c_5 c_8, c_{10}	$y^{10} + 7y^9 + 20y^8 + 26y^7 + 6y^6 - 22y^5 - 19y^4 + 3y^3 + 6y^2 + 1$
c_7, c_9	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)^2$
c_{11}	$y^{10} - 9y^9 + \cdots + 12y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.339110 + 0.822375I$ $a = -0.001100 - 0.646305I$ $b = -0.429649 + 0.392970I$	$-0.32910 + 1.53058I$	$-2.51511 - 4.43065I$
$u = 0.339110 + 0.822375I$ $a = 0.51909 - 2.25462I$ $b = 0.090539 - 1.215350I$	$-0.32910 + 1.53058I$	$-2.51511 - 4.43065I$
$u = 0.339110 - 0.822375I$ $a = -0.001100 + 0.646305I$ $b = -0.429649 - 0.392970I$	$-0.32910 - 1.53058I$	$-2.51511 + 4.43065I$
$u = 0.339110 - 0.822375I$ $a = 0.51909 + 2.25462I$ $b = 0.090539 + 1.215350I$	$-0.32910 - 1.53058I$	$-2.51511 + 4.43065I$
$u = -0.766826$ $a = -0.92066 + 1.20042I$ $b = 0.383413 + 1.200420I$	-2.40108	-3.48110
$u = -0.766826$ $a = -0.92066 - 1.20042I$ $b = 0.383413 - 1.200420I$	-2.40108	-3.48110
$u = -0.455697 + 1.200150I$ $a = 0.563037 - 0.657755I$ $b = 0.839548 + 0.070481I$	$-5.87256 - 4.40083I$	$-6.74431 + 3.49859I$
$u = -0.455697 + 1.200150I$ $a = -0.66036 - 1.99887I$ $b = -0.383851 - 1.270630I$	$-5.87256 - 4.40083I$	$-6.74431 + 3.49859I$
$u = -0.455697 - 1.200150I$ $a = 0.563037 + 0.657755I$ $b = 0.839548 - 0.070481I$	$-5.87256 + 4.40083I$	$-6.74431 - 3.49859I$
$u = -0.455697 - 1.200150I$ $a = -0.66036 + 1.99887I$ $b = -0.383851 + 1.270630I$	$-5.87256 + 4.40083I$	$-6.74431 - 3.49859I$

V. $\boldsymbol{I^u_5 = \langle b-u,\ -2u^4-2u^3-2u^2+a-u,\ u^5+u^4+2u^3+u^2+u+1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^3-4u^2-4u-6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.339110 + 0.822375I$ $a = -2.07360 + 0.14067I$ $b = 0.339110 + 0.822375I$	$-0.32910 + 1.53058I$	$-2.51511 - 4.43065I$
$u = 0.339110 - 0.822375I$ $a = -2.07360 - 0.14067I$ $b = 0.339110 - 0.822375I$	$-0.32910 - 1.53058I$	$-2.51511 + 4.43065I$
$u = -0.766826$ $a = 0.198937$ $b = -0.766826$	-2.40108	-3.48110
$u = -0.455697 + 1.200150I$ $a = 1.47413 + 2.44394I$ $b = -0.455697 + 1.200150I$	$-5.87256 - 4.40083I$	$-6.74431 + 3.49859I$
$u = -0.455697 - 1.200150I$ $a = 1.47413 - 2.44394I$ $b = -0.455697 - 1.200150I$	$-5.87256 + 4.40083I$	$-6.74431 - 3.49859I$

VI. $I_6^u = \langle b+u,\ a+2u-1,\ u^2+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u		$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$1.000000I$		
$a =$	$1.00000 - 2.00000I$	-1.64493	-8.00000
$b =$	$-1.000000I$		
$u =$	$-1.000000I$		
$a =$	$1.00000 + 2.00000I$	-1.64493	-8.00000
$b =$	$1.000000I$		

VII. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_5, c_6 c_{10}	$(u^2+1)(u^5+u^4+2u^3+u^2+u+1)^3$ $\cdot(u^{10}-u^9+4u^8-4u^7+6u^6-6u^5+3u^4-3u^3+1)$ $\cdot(u^{12}+3u^{10}+2u^9+4u^8+4u^7+3u^6+4u^5+u^4+2u^3+u^2+u+2)$ $\cdot(u^{14}-u^{13}+\cdots-2u+1)$
c_2, c_{11}	$(u+1)^2(u^5+3u^4+4u^3+u^2-u-1)^3$ $\cdot(u^{10}+7u^9+20u^8+26u^7+6u^6-22u^5-19u^4+3u^3+6u^2+1)$ $\cdot(u^{12}+6u^{11}+\cdots+3u+4)(u^{14}+7u^{13}+\cdots+4u+1)$
c_3, c_4, c_8	$(u^2+1)(u^5+u^4+2u^3+u^2+u+1)(u^6+3u^4+u^3+2u^2+2u-1)^2$ $\cdot(u^{10}-u^9+4u^8-4u^7+6u^6-6u^5+3u^4-3u^3+1)^2$ $\cdot(u^{14}+2u^{13}+\cdots+3u+2)$
c_7, c_9	$u^2(u^5-u^4-2u^3+u^2+u+1)^5(u^6+3u^5+2u^4+u^3+5u^2+3u-2)^2$ $\cdot(u^{14}-2u^{13}+\cdots-12u+8)$

VIII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_6 c_{10}	$(y+1)^2(y^5+3y^4+4y^3+y^2-y-1)^3$ $\cdot(y^{10}+7y^9+20y^8+26y^7+6y^6-22y^5-19y^4+3y^3+6y^2+1)$ $\cdot(y^{12}+6y^{11}+\cdots+3y+4)(y^{14}+7y^{13}+\cdots+4y+1)$
c_2, c_{11}	$((y-1)^2)(y^5-y^4+\cdots+3y-1)^3(y^{10}-9y^9+\cdots+12y+1)$ $\cdot(y^{12}-2y^{11}+\cdots-y+16)(y^{14}+3y^{13}+\cdots+28y^2+1)$
c_3, c_4, c_8	$(y+1)^2(y^5+3y^4+4y^3+y^2-y-1)$ $\cdot(y^6+6y^5+13y^4+9y^3-6y^2-8y+1)^2$ $\cdot(y^{10}+7y^9+20y^8+26y^7+6y^6-22y^5-19y^4+3y^3+6y^2+1)^2$ $\cdot(y^{14}+12y^{13}+\cdots+11y+4)$
c_7, c_9	$y^2(y^5-5y^4+8y^3-3y^2-y-1)^5$ $\cdot(y^6-5y^5+8y^4-3y^3+11y^2-29y+4)^2$ $\cdot(y^{14}-10y^{13}+\cdots+496y+64)$