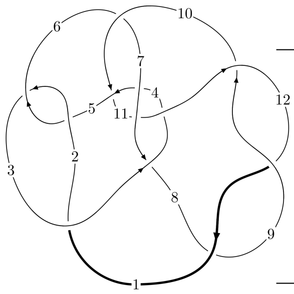
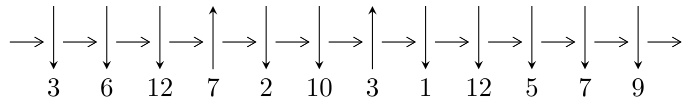
$12n_{0321}$ ($K12n_{0321}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -28u^8 + 32u^7 - 37u^6 - 26u^5 - 112u^4 - 40u^3 - 37u^2 + 59b + 86u - 72, \\
& - 7u^8 + 8u^7 - 24u^6 + 23u^5 - 28u^4 - 69u^3 - 24u^2 + 59a + 110u - 18, \\
& u^9 - 2u^8 + 2u^7 + u^6 + 2u^5 - 2u^4 + u^3 - 3u^2 + 4u - 1\rangle \\
I_2^u = \langle & -u^2 + b - u + 2,\ a + 1,\ u^4 + u^3 - u^2 - u + 1\rangle \\
I_3^u = \langle & -2u^7 - 3u^6 - 2u^5 + 4u^4 + 7u^3 + 5u^2 + b - 5u - 5,\ -2u^7 - 2u^6 - u^5 + 5u^4 + 5u^3 + 3u^2 + a - 6u - 2, \\
& u^8 + 2u^7 + 2u^6 - u^5 - 4u^4 - 4u^3 + u^2 + 3u + 1\rangle \\
I_4^u = \langle & -3u^5 + u^3 - 11u^2 + 19b + 7u - 18,\ -9u^5 + 19u^4 - 35u^3 + 43u^2 + 19a - 74u + 22, \\
& u^6 - 3u^5 + 6u^4 - 8u^3 + 12u^2 - 6u + 1\rangle \\
I_5^u = \langle & b,\ a + u + 1,\ u^2 + u + 1\rangle
\end{aligned}$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 29 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. $\boldsymbol{I_1^u =}$
$\boldsymbol{\langle -28u^8+32u^7+\cdots+59b-72,\ -7u^8+8u^7+\cdots+59a-18,\ u^9-2u^8+\cdots+4u-1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u^2+1\\-u^2\end{pmatrix}$$
$$a_5 = \begin{pmatrix}u\\-u^3+u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0.118644u^8 - 0.135593u^7 + \cdots - 1.86441u + 0.305085\\0.474576u^8 - 0.542373u^7 + \cdots - 1.45763u + 1.22034\end{pmatrix}$$
$$a_8 = \begin{pmatrix}0.355932u^8 - 0.406780u^7 + \cdots - 1.59322u + 0.915254\\0.355932u^8 - 0.406780u^7 + \cdots - 0.593220u + 0.915254\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-u\\0.355932u^8 - 0.406780u^7 + \cdots - 0.593220u + 0.915254\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-0.118644u^8 + 0.135593u^7 + \cdots + 1.86441u - 0.305085\\0.440678u^8 - 0.932203u^7 + \cdots - 1.06780u + 0.847458\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}0.389831u^8 - 1.01695u^7 + \cdots - 0.983051u + 1.28814\\-0.355932u^8 + 0.406780u^7 + \cdots + 0.593220u - 0.915254\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-1\\0.915254u^8 - 1.47458u^7 + \cdots - 2.52542u + 2.06780\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-0.305085u^8 + 0.491525u^7 + \cdots + 0.508475u - 1.35593\\0.711864u^8 - 0.813559u^7 + \cdots - 2.18644u + 1.83051\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{15}{59}u^8 + \frac{93}{59}u^7 - \frac{43}{59}u^6 - \frac{94}{59}u^5 + \frac{235}{59}u^4 + \frac{282}{59}u^3 + \frac{193}{59}u^2 - \frac{93}{59}u - \frac{342}{59}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^9 + 12u^7 - u^6 + 8u^5 - 18u^4 + 7u^3 + 5u^2 + 10u + 1$
c_2, c_5, c_6	$u^9 + 2u^8 + 2u^7 - u^6 + 2u^5 + 2u^4 + u^3 + 3u^2 + 4u + 1$
c_3, c_8, c_9 c_{10}, c_{12}	$u^9 + 7u^7 + 5u^6 + 15u^5 + 13u^4 + 11u^3 + 7u^2 + u + 1$
c_4	$u^9 + 2u^8 - 7u^7 - 15u^6 + 13u^5 + 53u^4 + 71u^3 + 61u^2 + 29u + 5$
c_7	$u^9 - 7u^8 + 5u^7 + 42u^6 + 92u^5 + 125u^4 + 125u^3 + 88u^2 + 39u + 9$
c_{11}	$u^9 + u^8 + 14u^7 + 10u^6 + 39u^5 - 44u^4 - 45u^3 + 4u^2 + 20u + 9$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^9 + 24y^8 + \cdots + 90y - 1$
c_2, c_5, c_6	$y^9 + 12y^7 + y^6 + 8y^5 + 18y^4 + 7y^3 - 5y^2 + 10y - 1$
c_3, c_8, c_9 c_{10}, c_{12}	$y^9 + 14y^8 + 79y^7 + 207y^6 + 251y^5 + 105y^4 - 41y^3 - 53y^2 - 13y - 1$
c_4	$y^9 - 18y^8 + \cdots + 231y - 25$
c_7	$y^9 - 39y^8 + \cdots - 63y - 81$
c_{11}	$y^9 + 27y^8 + \cdots + 328y - 81$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.236649 + 0.987655I$ $a = 1.59024 - 3.04254I$ $b = 1.32330 - 0.67194I$	$9.89350 + 2.31667I$	$0.86831 - 3.48815I$
$u = -0.236649 - 0.987655I$ $a = 1.59024 + 3.04254I$ $b = 1.32330 + 0.67194I$	$9.89350 - 2.31667I$	$0.86831 + 3.48815I$
$u = -0.948444 + 0.610151I$ $a = 0.291757 + 0.057514I$ $b = -0.400025 - 0.194724I$	$1.50288 + 4.69117I$	$-4.69492 - 7.49384I$
$u = -0.948444 - 0.610151I$ $a = 0.291757 - 0.057514I$ $b = -0.400025 + 0.194724I$	$1.50288 - 4.69117I$	$-4.69492 + 7.49384I$
$u = 0.731097 + 0.406841I$ $a = -0.967602 + 0.291558I$ $b = -0.297854 + 1.104540I$	$-1.11949 - 1.41007I$	$-6.06702 + 5.32264I$
$u = 0.731097 - 0.406841I$ $a = -0.967602 - 0.291558I$ $b = -0.297854 - 1.104540I$	$-1.11949 + 1.41007I$	$-6.06702 - 5.32264I$
$u = 0.323158$ $a = -0.211236$ $b = 0.860492$	-1.09696	-5.76550
$u = 1.29242 + 1.30359I$ $a = 1.69122 + 1.25994I$ $b = 2.44434 + 0.36799I$	$-13.8407 - 9.8067I$	$-4.22361 + 3.66185I$
$u = 1.29242 - 1.30359I$ $a = 1.69122 - 1.25994I$ $b = 2.44434 - 0.36799I$	$-13.8407 + 9.8067I$	$-4.22361 - 3.66185I$

II. $\boldsymbol{I_2^u = \langle -u^2 + b - u + 2,\ a + 1,\ u^4 + u^3 - u^2 - u + 1\rangle}$

(i) Arc colorings

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

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

$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

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

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

$$a_8 = \begin{pmatrix} u^3 + u^2 - u - 1 \\ u^3 + u^2 - 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u \\ u^3 + u^2 - 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ -u^3 - u^2 + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u^2 - 1 \end{pmatrix}$$

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 2u^3 + 5u^2 - 3u - 13$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ \ 0.692440 + 0.318148I$ $a = -1.00000$ $b = -0.929304 + 0.758745I$	$-1.74699 - 0.56550I$	$-12.94255 + 2.09940I$
$u = \ \ 0.692440 - 0.318148I$ $a = -1.00000$ $b = -0.929304 - 0.758745I$	$-1.74699 + 0.56550I$	$-12.94255 - 2.09940I$
$u = -1.192440 + 0.547877I$ $a = -1.00000$ $b = -2.07070 - 0.75874I$	$5.03685 + 4.62527I$	$-5.05745 - 3.83145I$
$u = -1.192440 - 0.547877I$ $a = -1.00000$ $b = -2.07070 + 0.75874I$	$5.03685 - 4.62527I$	$-5.05745 + 3.83145I$

III. $\boldsymbol{I^u_3 = \langle -2u^7 - 3u^6 + \cdots + b - 5,\ -2u^7 - 2u^6 + \cdots + a - 2,\ u^8 + 2u^7 + 2u^6 - u^5 - 4u^4 - 4u^3 + u^2 + 3u + 1 \rangle}$

(i) Arc colorings

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

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

$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

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

$$a_9 = \begin{pmatrix} 2u^7 + 2u^6 + u^5 - 5u^4 - 5u^3 - 3u^2 + 6u + 2 \\ 2u^7 + 3u^6 + 2u^5 - 4u^4 - 7u^3 - 5u^2 + 5u + 5 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 4u^7 + 5u^6 + 4u^5 - 8u^4 - 12u^3 - 9u^2 + 11u + 6 \\ u^7 + 2u^6 + 2u^5 - u^4 - 4u^3 - 4u^2 + 2u + 3 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -10u^7 - 13u^6 - 11u^5 + 17u^4 + 27u^3 + 20u^2 - 23u - 12 \\ -u^7 - 2u^6 - 2u^5 + u^4 + 4u^3 + 4u^2 - u - 4 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 6u^7 + 9u^6 + 7u^5 - 11u^4 - 20u^3 - 14u^2 + 15u + 13 \\ -5u^7 - 7u^6 - 6u^5 + 8u^4 + 15u^3 + 11u^2 - 11u - 8 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -7u^7 - 10u^6 - 8u^5 + 12u^4 + 22u^3 + 16u^2 - 16u - 12 \\ 3u^7 + 4u^6 + 3u^5 - 6u^4 - 9u^3 - 6u^2 + 8u + 5 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -10u^7 - 14u^6 - 11u^5 + 17u^4 + 31u^3 + 22u^2 - 23u - 17 \\ u^7 + 2u^6 + u^5 - 3u^4 - 4u^3 - 2u^2 + 4u + 2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^8+u^5+2u^4-14u^3+17u^2-7u+1$
c_2, c_6	$u^8+2u^7+2u^6-u^5-4u^4-4u^3+u^2+3u+1$
c_3, c_{12}	$u^8-u^7+6u^6-5u^5+12u^4-8u^3+9u^2-4u+1$
c_4	$(u^4+3u^3+u^2-2u+1)^2$
c_5	$u^8-2u^7+2u^6+u^5-4u^4+4u^3+u^2-3u+1$
c_7	$u^8+u^7+5u^6+8u^5+7u^4+11u^3+10u^2+1$
c_8, c_9, c_{10}	$u^8+u^7+6u^6+5u^5+12u^4+8u^3+9u^2+4u+1$
c_{11}	$u^8-2u^7+5u^6+3u^5+4u^4+27u^3-3u^2-16u+52$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^8+4y^6+33y^5+34y^4-114y^3+97y^2-15y+1$
c_2, c_5, c_6	$y^8+y^5+2y^4-14y^3+17y^2-7y+1$
c_3, c_8, c_9 c_{10}, c_{12}	$y^8+11y^7+50y^6+121y^5+166y^4+124y^3+41y^2+2y+1$
c_4	$(y^4-7y^3+15y^2-2y+1)^2$
c_7	$y^8+9y^7+23y^6+4y^5-25y^4+29y^3+114y^2+20y+1$
c_{11}	$y^8+6y^7+45y^6+133y^5-136y^4-137y^3+1289y^2-568y+2704$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.963269 + 0.149069I$ $a = -0.307661 - 1.178810I$ $b = 0.148192 - 0.911292I$	$1.43393 - 3.16396I$	$-4.10488 + 1.55249I$
$u = 0.963269 - 0.149069I$ $a = -0.307661 + 1.178810I$ $b = 0.148192 + 0.911292I$	$1.43393 + 3.16396I$	$-4.10488 - 1.55249I$
$u = -1.006590 + 0.790269I$ $a = 0.550701 + 0.903791I$ $b = 0.148192 + 0.911292I$	$1.43393 + 3.16396I$	$-4.10488 - 1.55249I$
$u = -1.006590 - 0.790269I$ $a = 0.550701 - 0.903791I$ $b = 0.148192 - 0.911292I$	$1.43393 - 3.16396I$	$-4.10488 + 1.55249I$
$u = -0.384833 + 1.326500I$ $a = 1.24719 - 2.12175I$ $b = 1.35181 - 0.72034I$	$8.43568 + 1.41510I$	$-4.39512 - 0.50684I$
$u = -0.384833 - 1.326500I$ $a = 1.24719 + 2.12175I$ $b = 1.35181 + 0.72034I$	$8.43568 - 1.41510I$	$-4.39512 + 0.50684I$
$u = -0.571852 + 0.099314I$ $a = -1.99023 + 0.84034I$ $b = 1.35181 + 0.72034I$	$8.43568 - 1.41510I$	$-4.39512 + 0.50684I$
$u = -0.571852 - 0.099314I$ $a = -1.99023 - 0.84034I$ $b = 1.35181 - 0.72034I$	$8.43568 + 1.41510I$	$-4.39512 - 0.50684I$

IV. $I^u_4 = \langle -3u^5 + u^3 - 11u^2 + 19b + 7u - 18,\ -9u^5 + 19u^4 + \cdots + 19a + 22,\ u^6 - 3u^5 + 6u^4 - 8u^3 + 12u^2 - 6u + 1\rangle$

(i) Arc colorings

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

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

$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

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

$$a_9 = \begin{pmatrix} \frac{9}{19}u^5 - u^4 + \cdots + \frac{74}{19}u - \frac{22}{19} \\ 0.157895u^5 - 0.0526316u^3 + \cdots - 0.368421u + 0.947368 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} \frac{9}{19}u^5 - 2u^4 + \cdots + \frac{55}{19}u - \frac{3}{19} \\ \frac{3}{19}u^5 - u^4 + \cdots - \frac{7}{19}u + \frac{18}{19} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} \frac{6}{19}u^5 - u^4 + \cdots + \frac{62}{19}u - \frac{21}{19} \\ \frac{3}{19}u^5 - u^4 + \cdots - \frac{7}{19}u + \frac{18}{19} \end{pmatrix}$$

$$a_4 = \begin{pmatrix} \frac{8}{19}u^5 - u^4 + \cdots + \frac{51}{19}u - \frac{9}{19} \\ \frac{11}{19}u^5 - u^4 + \cdots + \frac{6}{19}u + \frac{9}{19} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -\frac{6}{19}u^5 + u^4 + \cdots - \frac{81}{19}u + \frac{40}{19} \\ -0.105263u^5 + 0.368421u^3 + \cdots - 0.421053u - 0.631579 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.684211u^5 - 2u^4 + \cdots + 7.73684u - 2.89474 \\ -0.105263u^5 + 0.368421u^3 + \cdots + 0.578947u + 1.36842 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} \frac{7}{19}u^5 - u^4 + \cdots + \frac{123}{19}u - \frac{53}{19} \\ -1.57895u^5 + 3u^4 + \cdots - 1.31579u + 1.52632 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{2}{19}u^5 + \frac{7}{19}u^3 - \frac{20}{19}u^2 + \frac{11}{19}u - \frac{107}{19}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^6 - 3u^5 + 12u^4 - 46u^3 + 60u^2 + 12u + 1$
c_2, c_5, c_6	$u^6 + 3u^5 + 6u^4 + 8u^3 + 12u^2 + 6u + 1$
c_3, c_8, c_9 c_{10}, c_{12}	$u^6 + 9u^4 + 8u^3 + 27u^2 + 45u + 19$
c_4	$(u^3 - 3u - 1)^2$
c_7	$u^6 + 9u^5 + 48u^4 + 349u^3 + 1647u^2 + 2058u + 757$
c_{11}	$u^6 + 9u^4 - 9u^3 + 54u^2 + 81u + 27$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^6 + 15y^5 - 12y^4 - 602y^3 + 4728y^2 - 24y + 1$
c_2, c_5, c_6	$y^6 + 3y^5 + 12y^4 + 46y^3 + 60y^2 - 12y + 1$
c_3, c_8, c_9 c_{10}, c_{12}	$y^6 + 18y^5 + 135y^4 + 460y^3 + 351y^2 - 999y + 361$
c_4	$(y^3 - 6y^2 + 9y - 1)^2$
c_7	$y^6 + 15y^5 - 684y^4 + 781y^3 + 1348797y^2 - 1741806y + 573049$
c_{11}	$y^6 + 18y^5 + 189y^4 + 945y^3 + 4860y^2 - 3645y + 729$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.26604 + 1.50881I$ $a = -1.17365 + 0.98481I$ $b = -1.34730$	12.0628	$-2.12061 + 0.I$
$u = -0.26604 - 1.50881I$ $a = -1.17365 - 0.98481I$ $b = -1.34730$	12.0628	$-2.12061 + 0.I$
$u = 0.326352 + 0.118782I$ $a = -0.060307 + 0.342020I$ $b = 0.879385$	-1.09662	$-5.53209 + 0.I$
$u = 0.326352 - 0.118782I$ $a = -0.060307 - 0.342020I$ $b = 0.879385$	-1.09662	$-5.53209 + 0.I$
$u = 1.43969 + 1.20805I$ $a = -1.76604 - 0.64279I$ $b = -2.53209$	-14.2561	$-4.34730 + 0.I$
$u = 1.43969 - 1.20805I$ $a = -1.76604 + 0.64279I$ $b = -2.53209$	-14.2561	$-4.34730 + 0.I$

V. $I_5^u = \langle b,\ a+u+1,\ u^2+u+1 \rangle$

(i) Arc colorings

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

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

$$a_2 = \begin{pmatrix} 1 \\ u+1 \end{pmatrix}$$

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

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

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

$$a_8 = \begin{pmatrix} -2 \\ -1 \end{pmatrix}$$

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

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

$$a_{12} = \begin{pmatrix} u+1 \\ u+1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u \\ 1 \end{pmatrix}$$

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -3$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_5	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = -0.500000 - 0.866025I$ $b = 0$	3.28987	−3.00000
$u = -0.500000 - 0.866025I$ $a = -0.500000 + 0.866025I$ $b = 0$	3.28987	−3.00000

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^2-u+1)(u^4-3u^3+5u^2-3u+1)$ $\cdot(u^6-3u^5+12u^4-46u^3+60u^2+12u+1)$ $\cdot(u^8+u^5+2u^4-14u^3+17u^2-7u+1)$ $\cdot(u^9+12u^7-u^6+8u^5-18u^4+7u^3+5u^2+10u+1)$
c_2, c_6	$(u^2-u+1)(u^4+u^3-u^2-u+1)(u^6+3u^5+\cdots+6u+1)$ $\cdot(u^8+2u^7+2u^6-u^5-4u^4-4u^3+u^2+3u+1)$ $\cdot(u^9+2u^8+2u^7-u^6+2u^5+2u^4+u^3+3u^2+4u+1)$
c_3, c_{12}	$(u^2-u+1)(u^4+u^3+2u^2+2u+1)(u^6+9u^4+\cdots+45u+19)$ $\cdot(u^8-u^7+6u^6-5u^5+12u^4-8u^3+9u^2-4u+1)$ $\cdot(u^9+7u^7+5u^6+15u^5+13u^4+11u^3+7u^2+u+1)$
c_4	$((u-1)^2)(u^3-3u-1)^2(u^4-3u^3+2u^2+1)(u^4+3u^3+\cdots-2u+1)^2$ $\cdot(u^9+2u^8-7u^7-15u^6+13u^5+53u^4+71u^3+61u^2+29u+5)$
c_5	$(u^2-u+1)(u^4-u^3-u^2+u+1)(u^6+3u^5+\cdots+6u+1)$ $\cdot(u^8-2u^7+2u^6+u^5-4u^4+4u^3+u^2-3u+1)$ $\cdot(u^9+2u^8+2u^7-u^6+2u^5+2u^4+u^3+3u^2+4u+1)$
c_7	$(u-1)^2(u^2-u+1)^2$ $\cdot(u^6+9u^5+48u^4+349u^3+1647u^2+2058u+757)$ $\cdot(u^8+u^7+5u^6+8u^5+7u^4+11u^3+10u^2+1)$ $\cdot(u^9-7u^8+5u^7+42u^6+92u^5+125u^4+125u^3+88u^2+39u+9)$
c_8, c_9, c_{10}	$(u^2-u+1)(u^4-u^3+2u^2-2u+1)(u^6+9u^4+\cdots+45u+19)$ $\cdot(u^8+u^7+6u^6+5u^5+12u^4+8u^3+9u^2+4u+1)$ $\cdot(u^9+7u^7+5u^6+15u^5+13u^4+11u^3+7u^2+u+1)$
c_{11}	$u^2(u^4+2u^2+3u+1)(u^6+9u^4-9u^3+54u^2+81u+27)$ $\cdot(u^8-2u^7+5u^6+3u^5+4u^4+27u^3-3u^2-16u+52)$ $\cdot(u^9+u^8+14u^7+10u^6+39u^5-44u^4-45u^3+4u^2+20u+9)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^2+y+1)(y^4+y^3+9y^2+y+1)$ $\cdot(y^6+15y^5-12y^4-602y^3+4728y^2-24y+1)$ $\cdot(y^8+4y^6+33y^5+34y^4-114y^3+97y^2-15y+1)$ $\cdot(y^9+24y^8+\cdots+90y-1)$
c_2, c_5, c_6	$(y^2+y+1)(y^4-3y^3+5y^2-3y+1)$ $\cdot(y^6+3y^5+12y^4+46y^3+60y^2-12y+1)$ $\cdot(y^8+y^5+2y^4-14y^3+17y^2-7y+1)$ $\cdot(y^9+12y^7+y^6+8y^5+18y^4+7y^3-5y^2+10y-1)$
c_3, c_8, c_9 c_{10}, c_{12}	$(y^2+y+1)(y^4+3y^3+2y^2+1)$ $\cdot(y^6+18y^5+135y^4+460y^3+351y^2-999y+361)$ $\cdot(y^8+11y^7+50y^6+121y^5+166y^4+124y^3+41y^2+2y+1)$ $\cdot(y^9+14y^8+79y^7+207y^6+251y^5+105y^4-41y^3-53y^2-13y-1)$
c_4	$(y-1)^2(y^3-6y^2+9y-1)^2(y^4-7y^3+15y^2-2y+1)^2$ $\cdot(y^4-5y^3+6y^2+4y+1)(y^9-18y^8+\cdots+231y-25)$
c_7	$(y-1)^2(y^2+y+1)^2$ $\cdot(y^6+15y^5-684y^4+781y^3+1348797y^2-1741806y+573049)$ $\cdot(y^8+9y^7+23y^6+4y^5-25y^4+29y^3+114y^2+20y+1)$ $\cdot(y^9-39y^8+\cdots-63y-81)$
c_{11}	$y^2(y^4+4y^3+6y^2-5y+1)$ $\cdot(y^6+18y^5+189y^4+945y^3+4860y^2-3645y+729)$ $\cdot(y^8+6y^7+45y^6+133y^5-136y^4-137y^3+1289y^2-568y+2704)$ $\cdot(y^9+27y^8+\cdots+328y-81)$