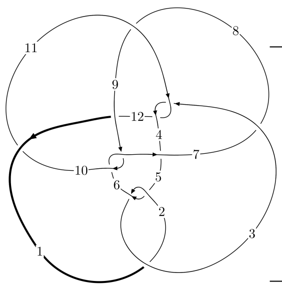
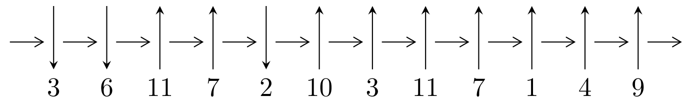
$12n_{0425}$ ($K12n_{0425}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I^u_1 = \langle & -3141u^{13} - 16485u^{12} + \cdots + 48031b - 35243,\ -17396u^{13} + 34122u^{12} + \cdots + 48031a - 53374, \\
& u^{14} - 2u^{13} + 2u^{12} + 2u^{11} - u^{10} + 5u^9 - u^8 - 3u^7 + 16u^6 + 14u^5 - 7u^4 - 4u^3 + 5u^2 - 1\rangle \\
I^u_2 = \langle & u^7 + u^6 + 2u^5 - u^3 - 3u^2 + b - u - 1,\ u^6 + u^5 + 2u^4 - u^2 + a - 2u,\ u^8 + 2u^7 + 3u^6 + u^5 - 2u^4 - 5u^3 - 3u \\
I^u_3 = \langle & -18446302691u^{17} + 75111115865u^{16} + \cdots + 37469236469b + 161494737225, \\
& 1420585009695u^{17} - 6247662256333u^{16} + \cdots + 412161601159a - 27133691702098, \\
& u^{18} - 5u^{17} + \cdots - 60u + 11\rangle \\
I^u_4 = \langle & -u^6 - 3u^5 - 6u^4 - 7u^3 - 5u^2 + b - 2u,\ u^6 + 3u^5 + 7u^4 + 10u^3 + 11u^2 + a + 8u + 3, \\
& u^8 + 4u^7 + 10u^6 + 16u^5 + 18u^4 + 14u^3 + 7u^2 + 2u + 1\rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 48 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. $\boldsymbol{I_1^u = \langle -3141u^{13} - 16485u^{12} + \cdots + 48031b - 35243,\ -17396u^{13} + 34122u^{12} + \cdots + 48031a - 53374,\ u^{14} - 2u^{13} + \cdots + 5u^2 - 1\rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.362183u^{13} - 0.710416u^{12} + \cdots - 0.735608u + 1.11124 \\ 0.0653953u^{13} + 0.343216u^{12} + \cdots + 0.546876u + 0.733755 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 0.427578u^{13} - 0.367200u^{12} + \cdots - 0.188732u + 1.84500 \\ 0.0653953u^{13} + 0.343216u^{12} + \cdots + 0.546876u + 0.733755 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1 \\ -1.57877u^{13} + 2.67779u^{12} + \cdots - 6.70952u - 2.45421 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u \\ -0.479753u^{13} + 0.602444u^{12} + \cdots - 1.45421u - 1.57877 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.747705u^{13} + 1.28783u^{12} + \cdots - 4.39699u - 0.909059 \\ -1.10989u^{13} + 1.99825u^{12} + \cdots - 3.66139u - 2.02030 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.552518u^{13} - 0.954071u^{12} + \cdots + 0.0120964u + 1.31881 \\ -1.43745u^{13} + 2.65352u^{12} + \cdots - 4.96161u - 2.37884 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.266224u^{13} - 0.584622u^{12} + \cdots - 0.520247u + 0.357061 \\ -0.967708u^{13} + 1.43022u^{12} + \cdots - 3.29920u - 2.00635 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.357061u^{13} - 0.447898u^{12} + \cdots + 1.57877u + 1.47975 \\ -1.88366u^{13} + 2.89045u^{12} + \cdots - 8.64535u - 3.20018 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{368903}{48031}u^{13} - \frac{551900}{48031}u^{12} + \cdots + \frac{897392}{48031}u + \frac{1052546}{48031}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{14} + 7u^{13} + \cdots + 128u + 4$
c_2, c_5	$u^{14} + 5u^{13} + \cdots - 4u + 2$
c_3, c_7, c_{11}	$u^{14} - 2u^{13} + \cdots + 3u + 1$
c_4	$u^{14} + 7u^{13} + \cdots - 27u - 1$
c_6, c_9, c_{10}	$u^{14} + 2u^{13} + \cdots + 5u^2 - 1$
c_8	$u^{14} + 11u^{13} + \cdots - 48u - 32$
c_{12}	$u^{14} - 11u^{13} + \cdots + 112u + 26$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{14} - 7y^{13} + \cdots - 11904y + 16$
c_2, c_5	$y^{14} - 7y^{13} + \cdots - 128y + 4$
c_3, c_7, c_{11}	$y^{14} - 22y^{13} + \cdots - 17y + 1$
c_4	$y^{14} - 69y^{13} + \cdots - 481y + 1$
c_6, c_9, c_{10}	$y^{14} + 10y^{12} + \cdots - 10y + 1$
c_8	$y^{14} - 35y^{13} + \cdots + 2304y + 1024$
c_{12}	$y^{14} - 47y^{13} + \cdots - 20136y + 676$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.955042 + 0.173183I$ $a = 0.56818 + 1.84710I$ $b = -0.847861 - 0.494590I$	$1.67693 - 2.03514I$	$12.04529 + 3.68045I$
$u = -0.955042 - 0.173183I$ $a = 0.56818 - 1.84710I$ $b = -0.847861 + 0.494590I$	$1.67693 + 2.03514I$	$12.04529 - 3.68045I$
$u = -0.776212 + 0.543476I$ $a = 0.165614 + 0.941776I$ $b = -0.818876 - 1.029970I$	$1.08798 - 3.87177I$	$9.94392 + 7.67559I$
$u = -0.776212 - 0.543476I$ $a = 0.165614 - 0.941776I$ $b = -0.818876 + 1.029970I$	$1.08798 + 3.87177I$	$9.94392 - 7.67559I$
$u = 0.391359 + 0.443026I$ $a = 0.16676 - 2.00716I$ $b = -0.958890 + 0.494800I$	$-1.62818 + 1.74525I$	$-0.95153 - 1.16784I$
$u = 0.391359 - 0.443026I$ $a = 0.16676 + 2.00716I$ $b = -0.958890 - 0.494800I$	$-1.62818 - 1.74525I$	$-0.95153 + 1.16784I$
$u = -0.13651 + 1.41680I$ $a = 0.560094 - 0.041919I$ $b = 0.775471 + 0.132880I$	$-4.18065 - 3.12026I$	$9.33417 + 9.86695I$
$u = -0.13651 - 1.41680I$ $a = 0.560094 + 0.041919I$ $b = 0.775471 - 0.132880I$	$-4.18065 + 3.12026I$	$9.33417 - 9.86695I$
$u = 0.503014$ $a = 0.312373$ $b = 2.20130$	7.91244	48.6950
$u = -0.459070$ $a = 0.839237$ $b = 0.191558$	0.869022	11.1750

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.24791 + 0.91352I$ $a = 0.223114 + 0.771809I$ $b = -0.654338 - 1.195730I$	$18.3099 + 5.1932I$	$9.79689 - 2.37682I$
$u = 1.24791 - 0.91352I$ $a = 0.223114 - 0.771809I$ $b = -0.654338 + 1.195730I$	$18.3099 - 5.1932I$	$9.79689 + 2.37682I$
$u = 1.20652 + 1.25211I$ $a = -0.259569 - 1.133580I$ $b = -1.19193 + 0.83821I$	$16.5318 + 12.4168I$	$7.89590 - 5.61800I$
$u = 1.20652 - 1.25211I$ $a = -0.259569 + 1.133580I$ $b = -1.19193 - 0.83821I$	$16.5318 - 12.4168I$	$7.89590 + 5.61800I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 10u^7 + 21u^6 + 30u^5 + 13u^4 - 15u^3 - 43u^2 - 27u + 1$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^8 - 6u^7 + 11u^6 - 16u^5 + 11u^4 - 15u^3 + 29u^2 - 20u + 4$
c_2	$u^8 + 4u^7 + 5u^6 - 7u^4 - 7u^3 - u^2 + 4u + 2$
c_3, c_7	$u^8 - 6u^6 + 6u^4 + u^3 - 6u^2 + u - 1$
c_4	$u^8 - 3u^7 - 13u^6 + 7u^5 + 23u^4 - 11u^3 - 12u^2 + 7u - 1$
c_5	$u^8 - 4u^7 + 5u^6 - 7u^4 + 7u^3 - u^2 - 4u + 2$
c_6, c_{10}	$u^8 + 2u^7 + 3u^6 + u^5 - 2u^4 - 5u^3 - 3u^2 + 1$
c_8	$u^8 + 4u^7 + u^6 - 4u^5 + 4u^4 + 7u^3 + 5u^2 + 3u + 1$
c_9	$u^8 - 2u^7 + 3u^6 - u^5 - 2u^4 + 5u^3 - 3u^2 + 1$
c_{11}	$u^8 - 6u^6 + 6u^4 - u^3 - 6u^2 - u - 1$
c_{12}	$u^8 + 8u^7 + 25u^6 + 43u^5 + 48u^4 + 37u^3 + 21u^2 + 8u + 2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^8 - 14y^7 - 49y^6 - 136y^5 + 47y^4 - 139y^3 + 329y^2 - 168y + 16$
c_2, c_5	$y^8 - 6y^7 + 11y^6 - 16y^5 + 11y^4 - 15y^3 + 29y^2 - 20y + 4$
c_3, c_7, c_{11}	$y^8 - 12y^7 + 48y^6 - 84y^5 + 106y^4 - 61y^3 + 22y^2 + 11y + 1$
c_4	$y^8 - 35y^7 + 257y^6 - 737y^5 + 1035y^4 - 745y^3 + 252y^2 - 25y + 1$
c_6, c_9, c_{10}	$y^8 + 2y^7 + y^6 + y^5 - 2y^4 - 7y^3 + 5y^2 - 6y + 1$
c_8	$y^8 - 14y^7 + 41y^6 - 54y^5 + 60y^4 + 17y^3 - 9y^2 + y + 1$
c_{12}	$y^8 - 14y^7 + 33y^6 + y^5 + 48y^4 + 59y^3 + 41y^2 + 20y + 4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.08029$ $a = -2.45704$ $b = 0.593006$	12.7188	15.1320
$u = -0.717708 + 0.491300I$ $a = -0.421822 + 0.787765I$ $b = 0.471737 - 0.986547I$	$2.94742 - 2.05228I$	$9.34541 + 5.26901I$
$u = -0.717708 - 0.491300I$ $a = -0.421822 - 0.787765I$ $b = 0.471737 + 0.986547I$	$2.94742 + 2.05228I$	$9.34541 - 5.26901I$
$u = -0.817233 + 0.903739I$ $a = 0.197428 - 1.362760I$ $b = 1.104120 + 0.718722I$	$1.10667 - 8.19546I$	$4.78583 + 8.26595I$
$u = -0.817233 - 0.903739I$ $a = 0.197428 + 1.362760I$ $b = 1.104120 - 0.718722I$	$1.10667 + 8.19546I$	$4.78583 - 8.26595I$
$u = -0.221999 + 1.360760I$ $a = -0.528351 - 0.011203I$ $b = -0.891831 + 0.040113I$	$-4.44049 - 2.73730I$	$-0.23426 - 3.71473I$
$u = -0.221999 - 1.360760I$ $a = -0.528351 + 0.011203I$ $b = -0.891831 - 0.040113I$	$-4.44049 + 2.73730I$	$-0.23426 + 3.71473I$
$u = 0.433591$ $a = 0.962525$ $b = 2.03893$	7.79317	-18.9260

III. $\boldsymbol{I_3^u = \langle -1.84 \times 10^{10}u^{17} + 7.51 \times 10^{10}u^{16} + \cdots + 3.75 \times 10^{10}b + 1.61 \times 10^{11},\ 1.42 \times 10^{12}u^{17} - 6.25 \times 10^{12}u^{16} + \cdots + 4.12 \times 10^{11}a - 2.71 \times 10^{13},\ u^{18} - 5u^{17} + \cdots - 60u + 11\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-3.44667u^{17} + 15.1583u^{16} + \cdots - 239.602u + 65.8327\\0.492305u^{17} - 2.00461u^{16} + \cdots + 24.0884u - 4.31006\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-2.95436u^{17} + 13.1537u^{16} + \cdots - 215.514u + 61.5226\\0.492305u^{17} - 2.00461u^{16} + \cdots + 24.0884u - 4.31006\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-2.51715u^{17} + 11.0972u^{16} + \cdots - 173.143u + 45.6450\\0.836349u^{17} - 3.77119u^{16} + \cdots + 61.6274u - 15.3746\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-0.342094u^{17} + 1.85154u^{16} + \cdots - 50.3800u + 20.0714\\-1.66048u^{17} + 7.46601u^{16} + \cdots - 116.611u + 29.2405\end{pmatrix}$$
$$a_5 = \begin{pmatrix}1.68324u^{17} - 7.59201u^{16} + \cdots + 129.820u - 38.4924\\-0.413536u^{17} + 1.54784u^{16} + \cdots - 12.4168u + 0.775334\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1.67814u^{17} - 7.28075u^{16} + \cdots + 111.300u - 30.2014\\-0.781187u^{17} + 3.02254u^{16} + \cdots - 29.6167u + 3.91836\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-u\\u^3 + u\end{pmatrix}$$
$$a_8 = \begin{pmatrix}6.14612u^{17} - 27.5654u^{16} + \cdots + 460.756u - 131.949\\0.540102u^{17} - 2.47677u^{16} + \cdots + 45.1613u - 14.0091\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-1.68081u^{17} + 7.32598u^{16} + \cdots - 111.516u + 29.2703\\-0.111180u^{17} + 0.634520u^{16} + \cdots - 15.4335u + 5.51612\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$$= \frac{76928705088}{37469236469}u^{17} - \frac{347641873578}{37469236469}u^{16} + \cdots + \frac{8593743395980}{5352748067}u - \frac{14828703335594}{37469236469}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^9+3u^8+9u^7+16u^6+24u^5+29u^4+25u^3+20u^2+9u+1)^2$
c_2, c_5	$(u^9-u^8-u^7+2u^6+2u^5-3u^4-u^3+4u^2-u-1)^2$
c_3, c_7, c_{11}	$u^{18}-u^{17}+\cdots+8u-1$
c_4	$u^{18}+u^{17}+\cdots-12208u-5581$
c_6, c_9, c_{10}	$u^{18}+5u^{17}+\cdots+60u+11$
c_8	$(u^9-7u^8+15u^7-11u^6+12u^5-12u^4-17u^3-3u^2-11u+1)^2$
c_{12}	$(u^9+5u^8+6u^7-u^6-4u^4-14u^3-u^2-9u+1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^9 + 9y^8 + 33y^7 + 52y^6 - 4y^5 - 125y^4 - 135y^3 - 8y^2 + 41y - 1)^2$
c_2, c_5	$(y^9 - 3y^8 + 9y^7 - 16y^6 + 24y^5 - 29y^4 + 25y^3 - 20y^2 + 9y - 1)^2$
c_3, c_7, c_{11}	$y^{18} - 37y^{17} + \cdots + 38y + 1$
c_4	$y^{18} - 37y^{17} + \cdots + 25404472y + 31147561$
c_6, c_9, c_{10}	$y^{18} - y^{17} + \cdots - 718y + 121$
c_8	$(y^9 - 19y^8 + \cdots + 127y - 1)^2$
c_{12}	$(y^9 - 13y^8 + \cdots + 83y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.964780 + 0.260012I$ $a = -0.442639 + 1.305680I$ $b = 1.051070 - 0.723457I$	$1.61768 + 6.30275I$	$6.85119 - 4.04429I$
$u = 0.964780 - 0.260012I$ $a = -0.442639 - 1.305680I$ $b = 1.051070 + 0.723457I$	$1.61768 - 6.30275I$	$6.85119 + 4.04429I$
$u = -0.053905 + 0.902264I$ $a = -0.522493 - 0.703476I$ $b = -1.08132$	-3.22594	$2.09565 + 0.I$
$u = -0.053905 - 0.902264I$ $a = -0.522493 + 0.703476I$ $b = -1.08132$	-3.22594	$2.09565 + 0.I$
$u = -0.596141 + 0.989164I$ $a = -0.084498 + 1.048500I$ $b = -0.395865$	-0.204218	$5.27771 + 0.I$
$u = -0.596141 - 0.989164I$ $a = -0.084498 - 1.048500I$ $b = -0.395865$	-0.204218	$5.27771 + 0.I$
$u = -0.960557 + 0.706873I$ $a = -0.308105 + 0.556474I$ $b = 0.688981 - 0.846969I$	$2.75992 - 0.39920I$	$8.67020 - 0.65321I$
$u = -0.960557 - 0.706873I$ $a = -0.308105 - 0.556474I$ $b = 0.688981 + 0.846969I$	$2.75992 + 0.39920I$	$8.67020 + 0.65321I$
$u = 0.693875 + 0.252032I$ $a = 0.20218 + 1.57341I$ $b = 0.688981 - 0.846969I$	$2.75992 - 0.39920I$	$8.67020 - 0.65321I$
$u = 0.693875 - 0.252032I$ $a = 0.20218 - 1.57341I$ $b = 0.688981 + 0.846969I$	$2.75992 + 0.39920I$	$8.67020 + 0.65321I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.859474 + 1.111270I$ $a = 0.432850 - 1.182810I$ $b = 1.051070 + 0.723457I$	$1.61768 - 6.30275I$	$6.85119 + 4.04429I$
$u = -0.859474 - 1.111270I$ $a = 0.432850 + 1.182810I$ $b = 1.051070 - 0.723457I$	$1.61768 + 6.30275I$	$6.85119 - 4.04429I$
$u = 1.45749$ $a = -1.39150$ $b = 0.812913$	11.9229	2.59310
$u = 0.496939$ $a = 6.25056$ $b = 0.812913$	11.9229	2.59310
$u = 0.96038 + 1.33439I$ $a = -0.758555 - 0.968584I$ $b = -0.907915 + 0.810184I$	$16.8725 + 3.0439I$	$8.49539 - 2.64288I$
$u = 0.96038 - 1.33439I$ $a = -0.758555 + 0.968584I$ $b = -0.907915 - 0.810184I$	$16.8725 - 3.0439I$	$8.49539 + 2.64288I$
$u = 1.37383 + 1.22001I$ $a = 0.279000 + 0.397209I$ $b = -0.907915 - 0.810184I$	$16.8725 - 3.0439I$	$8.49539 + 2.64288I$
$u = 1.37383 - 1.22001I$ $a = 0.279000 - 0.397209I$ $b = -0.907915 + 0.810184I$	$16.8725 + 3.0439I$	$8.49539 - 2.64288I$

IV. $\boldsymbol{I_4^u = \langle -u^6 - 3u^5 - 6u^4 - 7u^3 - 5u^2 + b - 2u,\ u^6 + 3u^5 + 7u^4 + 10u^3 + 11u^2 + a + 8u + 3,\ u^8 + 4u^7 + \cdots + 2u + 1\rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^6 - 3u^5 - 7u^4 - 10u^3 - 11u^2 - 8u - 3 \\ u^6 + 3u^5 + 6u^4 + 7u^3 + 5u^2 + 2u \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -u^4 - 3u^3 - 6u^2 - 6u - 3 \\ u^6 + 3u^5 + 6u^4 + 7u^3 + 5u^2 + 2u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^7 - 4u^6 - 10u^5 - 16u^4 - 18u^3 - 14u^2 - 7u - 1 \\ -u^2 - u - 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u^7 - 4u^6 - 10u^5 - 16u^4 - 18u^3 - 14u^2 - 6u \\ -u^3 - 2u^2 - u - 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^7 + 3u^6 + 6u^5 + 7u^4 + 5u^3 + u^2 - 2u - 2 \\ u^4 + 2u^3 + 3u^2 + 2u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^7 + 2u^6 + 3u^5 + u^4 - 2u^3 - 5u^2 - 5u - 3 \\ -u^7 - 4u^6 - 9u^5 - 11u^4 - 9u^3 - 3u^2 - 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^7 + 4u^6 + 10u^5 + 16u^4 + 17u^3 + 11u^2 + 2u - 1 \\ u^5 + 3u^4 + 5u^3 + 4u^2 + 3u + 1 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -u^7 - 4u^6 - 10u^5 - 16u^4 - 18u^3 - 14u^2 - 8u - 1 \\ u^3 - u^2 - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^4 - 8u^3 - 12u^2 - 8u + 4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^2 - u + 1)^4$
c_2, c_5, c_8	$(u^4 - u^2 + 1)^2$
c_3, c_7	$u^8 - 2u^6 - 2u^5 + 2u^4 + 2u^3 + 3u^2 - 4u + 1$
c_4	$(u^2 + 1)^4$
c_6, c_{10}	$u^8 + 4u^7 + 10u^6 + 16u^5 + 18u^4 + 14u^3 + 7u^2 + 2u + 1$
c_9	$u^8 - 4u^7 + 10u^6 - 16u^5 + 18u^4 - 14u^3 + 7u^2 - 2u + 1$
c_{11}	$u^8 - 2u^6 + 2u^5 + 2u^4 - 2u^3 + 3u^2 + 4u + 1$
c_{12}	$(u - 1)^8$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^2 + y + 1)^4$
c_2, c_5, c_8	$(y^2 - y + 1)^4$
c_3, c_7, c_{11}	$y^8 - 4y^7 + 8y^6 - 6y^5 + 2y^4 - 12y^3 + 29y^2 - 10y + 1$
c_4	$(y + 1)^8$
c_6, c_9, c_{10}	$y^8 + 4y^7 + 8y^6 + 6y^5 + 2y^4 + 12y^3 + 29y^2 + 10y + 1$
c_{12}	$(y - 1)^8$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.060940 + 0.445679I$ $a = 0.390879 + 1.003910I$ $b = -0.866025 - 0.500000I$	$-2.02988I$	$6.00000 + 3.46410I$
$u = -1.060940 - 0.445679I$ $a = 0.390879 - 1.003910I$ $b = -0.866025 + 0.500000I$	$2.02988I$	$6.00000 - 3.46410I$
$u = -0.305600 + 1.286010I$ $a = 1.049970 - 0.653467I$ $b = 0.866025 + 0.500000I$	$-2.02988I$	$6.00000 + 3.46410I$
$u = -0.305600 - 1.286010I$ $a = 1.049970 + 0.653467I$ $b = 0.866025 - 0.500000I$	$2.02988I$	$6.00000 - 3.46410I$
$u = -0.69440 + 1.28601I$ $a = -0.183947 + 0.114482I$ $b = 0.866025 - 0.500000I$	$2.02988I$	$6.00000 - 3.46410I$
$u = -0.69440 - 1.28601I$ $a = -0.183947 - 0.114482I$ $b = 0.866025 + 0.500000I$	$-2.02988I$	$6.00000 + 3.46410I$
$u = 0.060942 + 0.445679I$ $a = -1.25690 - 3.22814I$ $b = -0.866025 + 0.500000I$	$2.02988I$	$6.00000 - 3.46410I$
$u = 0.060942 - 0.445679I$ $a = -1.25690 + 3.22814I$ $b = -0.866025 - 0.500000I$	$-2.02988I$	$6.00000 + 3.46410I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2-u+1)^4)(u^8-6u^7+\cdots-20u+4)$ $\cdot(u^9+3u^8+9u^7+16u^6+24u^5+29u^4+25u^3+20u^2+9u+1)^2$ $\cdot(u^{14}+7u^{13}+\cdots+128u+4)$
c_2	$(u^4-u^2+1)^2(u^8+4u^7+5u^6-7u^4-7u^3-u^2+4u+2)$ $\cdot(u^9-u^8-u^7+2u^6+2u^5-3u^4-u^3+4u^2-u-1)^2$ $\cdot(u^{14}+5u^{13}+\cdots-4u+2)$
c_3, c_7	$(u^8-6u^6+6u^4+u^3-6u^2+u-1)$ $\cdot(u^8-2u^6+\cdots-4u+1)(u^{14}-2u^{13}+\cdots+3u+1)$ $\cdot(u^{18}-u^{17}+\cdots+8u-1)$
c_4	$(u^2+1)^4(u^8-3u^7-13u^6+7u^5+23u^4-11u^3-12u^2+7u-1)$ $\cdot(u^{14}+7u^{13}+\cdots-27u-1)(u^{18}+u^{17}+\cdots-12208u-5581)$
c_5	$(u^4-u^2+1)^2(u^8-4u^7+5u^6-7u^4+7u^3-u^2-4u+2)$ $\cdot(u^9-u^8-u^7+2u^6+2u^5-3u^4-u^3+4u^2-u-1)^2$ $\cdot(u^{14}+5u^{13}+\cdots-4u+2)$
c_6, c_{10}	$(u^8+2u^7+3u^6+u^5-2u^4-5u^3-3u^2+1)$ $\cdot(u^8+4u^7+10u^6+16u^5+18u^4+14u^3+7u^2+2u+1)$ $\cdot(u^{14}+2u^{13}+\cdots+5u^2-1)(u^{18}+5u^{17}+\cdots+60u+11)$
c_8	$(u^4-u^2+1)^2(u^8+4u^7+u^6-4u^5+4u^4+7u^3+5u^2+3u+1)$ $\cdot(u^9-7u^8+15u^7-11u^6+12u^5-12u^4-17u^3-3u^2-11u+1)^2$ $\cdot(u^{14}+11u^{13}+\cdots-48u-32)$
c_9	$(u^8-4u^7+10u^6-16u^5+18u^4-14u^3+7u^2-2u+1)$ $\cdot(u^8-2u^7+\cdots-3u^2+1)(u^{14}+2u^{13}+\cdots+5u^2-1)$ $\cdot(u^{18}+5u^{17}+\cdots+60u+11)$
c_{11}	$(u^8-6u^6+6u^4-u^3-6u^2-u-1)$ $\cdot(u^8-2u^6+\cdots+4u+1)(u^{14}-2u^{13}+\cdots+3u+1)$ $\cdot(u^{18}-u^{17}+\cdots+8u-1)$
c_{12}	$(u-1)^8(u^8+8u^7+25u^6+43u^5+48u^4+37u^3+21u^2+8u+2)$ $\cdot(u^9+5u^8+6u^7-u^6-4u^4-14u^3-u^2-9u+1)^2$ $\cdot(u^{14}-11u^{13}+\cdots+112u+26)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^2+y+1)^4$ $\cdot\,(y^8-14y^7-49y^6-136y^5+47y^4-139y^3+329y^2-168y+16)$ $\cdot\,(y^9+9y^8+33y^7+52y^6-4y^5-125y^4-135y^3-8y^2+41y-1)^2$ $\cdot\,(y^{14}-7y^{13}+\cdots-11904y+16)$
c_2, c_5	$((y^2-y+1)^4)(y^8-6y^7+\cdots-20y+4)$ $\cdot\,(y^9-3y^8+9y^7-16y^6+24y^5-29y^4+25y^3-20y^2+9y-1)^2$ $\cdot\,(y^{14}-7y^{13}+\cdots-128y+4)$
c_3, c_7, c_{11}	$(y^8-12y^7+48y^6-84y^5+106y^4-61y^3+22y^2+11y+1)$ $\cdot\,(y^8-4y^7+8y^6-6y^5+2y^4-12y^3+29y^2-10y+1)$ $\cdot\,(y^{14}-22y^{13}+\cdots-17y+1)(y^{18}-37y^{17}+\cdots+38y+1)$
c_4	$(y+1)^8$ $\cdot\,(y^8-35y^7+257y^6-737y^5+1035y^4-745y^3+252y^2-25y+1)$ $\cdot\,(y^{14}-69y^{13}+\cdots-481y+1)$ $\cdot\,(y^{18}-37y^{17}+\cdots+25404472y+31147561)$
c_6, c_9, c_{10}	$(y^8+2y^7+y^6+y^5-2y^4-7y^3+5y^2-6y+1)$ $\cdot\,(y^8+4y^7+8y^6+6y^5+2y^4+12y^3+29y^2+10y+1)$ $\cdot\,(y^{14}+10y^{12}+\cdots-10y+1)(y^{18}-y^{17}+\cdots-718y+121)$
c_8	$((y^2-y+1)^4)(y^8-14y^7+\cdots+y+1)$ $\cdot\,((y^9-19y^8+\cdots+127y-1)^2)(y^{14}-35y^{13}+\cdots+2304y+1024)$
c_{12}	$(y-1)^8(y^8-14y^7+33y^6+y^5+48y^4+59y^3+41y^2+20y+4)$ $\cdot\,((y^9-13y^8+\cdots+83y-1)^2)(y^{14}-47y^{13}+\cdots-20136y+676)$