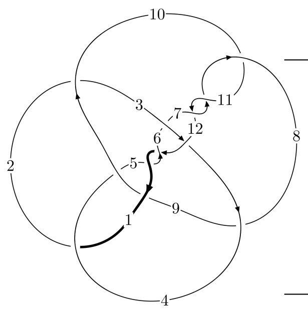
$12n_{0743}$ ($K12n_{0743}$)



A knot diagram[1]

Linearized knot diagam

$$\to\ \downarrow\ \to\ \uparrow\ \to\ \downarrow\ \to\ \uparrow\ \to\ \downarrow\ \to\ \downarrow\ \to\ \uparrow\ \to\ \uparrow\ \to\ \uparrow\ \to\ \uparrow\ \to\ \uparrow\ \to\ \downarrow\ \to$$

$$4 \quad 10 \quad 12 \quad 10 \quad 1 \quad 3 \quad 11 \quad 4 \quad 1 \quad 8 \quad 7 \quad 6$$

Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle -5u^{24} + 40u^{23} + \cdots + 2b + 42,\ 11u^{24} - 78u^{23} + \cdots + 4a + 44,\ u^{25} - 8u^{24} + \cdots - 42u + 4 \rangle \\
I_2^u &= \langle -424456u^7a^3 - 1015802u^7a^2 + \cdots - 1966550a - 824409,\ 5u^7a^2 - 3u^7 + \cdots + 6a + 5, \\
&\quad u^8 + u^7 + 5u^6 + 4u^5 + 7u^4 + 4u^3 + 2u^2 + 1 \rangle \\
I_3^u &= \langle -u^{12} - 2u^{11} - 8u^{10} - 13u^9 - 24u^8 - 30u^7 - 31u^6 - 26u^5 - 12u^4 - 3u^3 + 4u^2 + b + 2u, \\
&\quad -u^{12} - 3u^{11} - 10u^{10} - 21u^9 - 37u^8 - 54u^7 - 61u^6 - 57u^5 - 38u^4 - 15u^3 + u^2 + a + 6u + 2, \\
&\quad u^{15} + 3u^{14} + \cdots + u^2 + 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 72 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. $I^u_1 = \langle -5u^{24} + 40u^{23} + \cdots + 2b + 42,\ 11u^{24} - 78u^{23} + \cdots + 4a + 44,\ u^{25} - 8u^{24} + \cdots - 42u + 4\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -\frac{11}{4}u^{24} + \frac{39}{2}u^{23} + \cdots + \frac{153}{4}u - 11 \\ \frac{5}{2}u^{24} - 20u^{23} + \cdots + \frac{421}{2}u - 21 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -\frac{11}{4}u^{24} + \frac{39}{2}u^{23} + \cdots - \frac{183}{4}u - 1 \\ \frac{5}{2}u^{24} - 20u^{23} + \cdots + \frac{253}{2}u - 11 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} \frac{3}{2}u^{24} - \frac{25}{2}u^{23} + \cdots + \frac{297}{2}u - \frac{31}{2} \\ \frac{3}{2}u^{24} - 11u^{23} + \cdots - 132u^2 + \frac{33}{2}u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -\frac{15}{4}u^{24} + \frac{57}{2}u^{23} + \cdots - \frac{815}{4}u + 19 \\ \frac{3}{2}u^{24} - 13u^{23} + \cdots + \frac{477}{2}u - 27 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} \frac{11}{4}u^{24} - \frac{39}{2}u^{23} + \cdots + \frac{247}{4}u - 1 \\ -\frac{5}{2}u^{24} + 20u^{23} + \cdots - \frac{285}{2}u + 13 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -\frac{3}{4}u^{24} + \frac{9}{2}u^{23} + \cdots + \frac{401}{4}u - 17 \\ \frac{5}{2}u^{24} - 19u^{23} + \cdots + \frac{229}{2}u - 11 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} \frac{3}{2}u^{24} - \frac{23}{2}u^{23} + \cdots + \frac{163}{2}u - \frac{15}{2} \\ -\frac{1}{2}u^{24} + 4u^{23} + \cdots - \frac{113}{2}u + 6 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= u^{24} - 7u^{23} + 36u^{22} - 132u^{21} + 395u^{20} - 976u^{19} + 2048u^{18} - 3675u^{17} + 5648u^{16} - 7378u^{15} + 7999u^{14} - 6778u^{13} + 3633u^{12} + 552u^{11} - 4251u^{10} + 6027u^9 - 5445u^8 + 3234u^7 - 776u^6 - 810u^5 + 1221u^4 - 894u^3 + 414u^2 - 118u + 14$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{25} - 18u^{24} + \cdots + 200u - 192$
c_2, c_8	$u^{25} + u^{24} + \cdots + 49u - 85$
c_3, c_6	$u^{25} - 4u^{23} + \cdots + 7u - 1$
c_4, c_9	$u^{25} + 17u^{23} + \cdots + u - 1$
c_5, c_{12}	$u^{25} + 16u^{24} + \cdots - 2816u - 256$
c_7, c_{10}, c_{11}	$u^{25} + 8u^{24} + \cdots - 42u - 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{25} - 28y^{24} + \cdots + 395968y - 36864$
c_2, c_8	$y^{25} + 23y^{24} + \cdots - 26159y - 7225$
c_3, c_6	$y^{25} - 8y^{24} + \cdots + 71y - 1$
c_4, c_9	$y^{25} + 34y^{24} + \cdots - 11y - 1$
c_5, c_{12}	$y^{25} + 14y^{24} + \cdots + 393216y - 65536$
c_7, c_{10}, c_{11}	$y^{25} + 26y^{24} + \cdots - 164y - 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.921555 + 0.389569I$ $a = -0.228724 + 0.336449I$ $b = 0.714884 + 0.733561I$	$-3.72259 - 5.55262I$	$1.00846 + 5.11814I$
$u = 0.921555 - 0.389569I$ $a = -0.228724 - 0.336449I$ $b = 0.714884 - 0.733561I$	$-3.72259 + 5.55262I$	$1.00846 - 5.11814I$
$u = 0.754292 + 0.675553I$ $a = 0.935089 + 0.407093I$ $b = 1.02266 - 1.00894I$	$-4.63523 + 10.99550I$	$0.61931 - 7.61444I$
$u = 0.754292 - 0.675553I$ $a = 0.935089 - 0.407093I$ $b = 1.02266 + 1.00894I$	$-4.63523 - 10.99550I$	$0.61931 + 7.61444I$
$u = 0.911256 + 0.682747I$ $a = -0.409833 - 0.368341I$ $b = -0.863640 + 0.290917I$	$-8.28803 + 3.15505I$	$-4.81935 - 5.19613I$
$u = 0.911256 - 0.682747I$ $a = -0.409833 + 0.368341I$ $b = -0.863640 - 0.290917I$	$-8.28803 - 3.15505I$	$-4.81935 + 5.19613I$
$u = -0.781714$ $a = -0.294872$ $b = -0.129373$	1.14840	15.4840
$u = 0.160604 + 0.683864I$ $a = 0.447358 - 1.171790I$ $b = -0.556568 - 0.593706I$	$2.37371 - 1.53413I$	$1.38623 + 4.98201I$
$u = 0.160604 - 0.683864I$ $a = 0.447358 + 1.171790I$ $b = -0.556568 + 0.593706I$	$2.37371 + 1.53413I$	$1.38623 - 4.98201I$
$u = -0.03035 + 1.46200I$ $a = -0.958194 - 0.059340I$ $b = -0.676699 + 0.397676I$	$-4.72338 - 2.11817I$	$0.56869 + 3.89890I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.03035 - 1.46200I$ $a = -0.958194 + 0.059340I$ $b = -0.676699 - 0.397676I$	$-4.72338 + 2.11817I$	$0.56869 - 3.89890I$
$u = 0.05488 + 1.48295I$ $a = 1.56598 + 0.02201I$ $b = 1.097930 - 0.735677I$	$-7.25788 + 1.53536I$	$-4.26963 - 0.95697I$
$u = 0.05488 - 1.48295I$ $a = 1.56598 - 0.02201I$ $b = 1.097930 + 0.735677I$	$-7.25788 - 1.53536I$	$-4.26963 + 0.95697I$
$u = 0.09014 + 1.48837I$ $a = -1.94282 + 0.27279I$ $b = -1.22851 + 1.14146I$	$-2.73659 + 5.21328I$	$-0.241059 - 0.933200I$
$u = 0.09014 - 1.48837I$ $a = -1.94282 - 0.27279I$ $b = -1.22851 - 1.14146I$	$-2.73659 - 5.21328I$	$-0.241059 + 0.933200I$
$u = 0.365223 + 0.343863I$ $a = -0.89848 - 1.63604I$ $b = -0.883594 + 0.949370I$	$3.39737 + 3.68728I$	$-2.66049 - 0.54617I$
$u = 0.365223 - 0.343863I$ $a = -0.89848 + 1.63604I$ $b = -0.883594 - 0.949370I$	$3.39737 - 3.68728I$	$-2.66049 + 0.54617I$
$u = 0.24700 + 1.59114I$ $a = 1.88690 - 0.20760I$ $b = 1.32178 - 1.12604I$	$-12.1188 + 14.7263I$	$-1.91172 - 6.80862I$
$u = 0.24700 - 1.59114I$ $a = 1.88690 + 0.20760I$ $b = 1.32178 + 1.12604I$	$-12.1188 - 14.7263I$	$-1.91172 + 6.80862I$
$u = 0.203322 + 0.330620I$ $a = 0.46453 + 1.62148I$ $b = 0.687664 - 0.321221I$	$-1.185540 + 0.658151I$	$-5.01541 - 1.91955I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.203322 - 0.330620I$ $a = 0.46453 - 1.62148I$ $b = 0.687664 + 0.321221I$	$-1.185540 - 0.658151I$	$-5.01541 + 1.91955I$
$u = 0.27991 + 1.60858I$ $a = -1.43237 - 0.19401I$ $b = -1.200770 + 0.592773I$	$-15.8446 + 7.4948I$	$-4.78217 - 4.06320I$
$u = 0.27991 - 1.60858I$ $a = -1.43237 + 0.19401I$ $b = -1.200770 - 0.592773I$	$-15.8446 - 7.4948I$	$-4.78217 + 4.06320I$
$u = 0.43302 + 1.62881I$ $a = 0.467991 + 0.457927I$ $b = 0.629543 + 0.114371I$	$-9.98504 - 0.27176I$	$-10.12478 + 1.72289I$
$u = 0.43302 - 1.62881I$ $a = 0.467991 - 0.457927I$ $b = 0.629543 - 0.114371I$	$-9.98504 + 0.27176I$	$-10.12478 - 1.72289I$

II. $\boldsymbol{I_2^u = \langle -4.24\times 10^5 a^3u^7 - 1.02\times 10^6 a^2u^7 + \cdots - 1.97\times 10^6 a - 8.24\times 10^5,\ 5u^7a^2 - 3u^7 + \cdots + 6a + 5,\ u^8 + u^7 + 5u^6 + 4u^5 + 7u^4 + 4u^3 + 2u^2 + 1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_3 = \begin{pmatrix} a \\ 0.214472a^3u^7 + 0.513271a^2u^7 + \cdots + 0.993671a + 0.416563 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -0.165445a^3u^7 - 0.0257408a^2u^7 + \cdots + 1.01296a - 0.199907 \\ 0.0490264a^3u^7 + 0.487530a^2u^7 + \cdots + 1.00663a + 0.216656 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.145990a^3u^7 - 0.157999a^2u^7 + \cdots + 0.226482a - 0.0429312 \\ 0.320279a^3u^7 + 0.344935a^2u^7 + \cdots - 1.00696a - 0.581214 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.223080a^3u^7 - 0.106256a^2u^7 + \cdots - 0.939315a + 0.0492462 \\ 0.243189a^3u^7 + 0.396678a^2u^7 + \cdots - 2.17276a - 0.489037 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.285211a^3u^7 - 0.317493a^2u^7 + \cdots - 0.363491a - 0.0576562 \\ 0.181058a^3u^7 + 0.185441a^2u^7 + \cdots - 1.59693a - 0.595939 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -0.165445a^3u^7 - 0.0257408a^2u^7 + \cdots + 1.01296a - 0.199907 \\ 0.164961a^3u^7 + 0.644661a^2u^7 + \cdots + 0.984109a + 0.398794 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.310215a^3u^7 - 0.191868a^2u^7 + \cdots - 0.160858a - 0.210923 \\ 0.371570a^3u^7 + 0.332317a^2u^7 + \cdots - 1.85032a - 0.481154 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{51112}{282725}u^7a^3 - \frac{399104}{282725}u^7a^2 + \cdots - \frac{27488}{11309}a - \frac{1177318}{282725}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^8+7u^7+17u^6+14u^5-u^4+2u^3+6u^2-4u+1)^4$
c_2, c_8	$u^{32}-u^{31}+\cdots-18342u+11689$
c_3, c_6	$u^{32}+7u^{31}+\cdots-32u+7$
c_4, c_9	$u^{32}-u^{31}+\cdots+2638u+469$
c_5, c_{12}	$(u^2-u+1)^{16}$
c_7, c_{10}, c_{11}	$(u^8-u^7+5u^6-4u^5+7u^4-4u^3+2u^2+1)^4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^8 - 15y^7 + 91y^6 - 246y^5 + 207y^4 + 130y^3 + 50y^2 - 4y + 1)^4$
c_2, c_8	$y^{32} + 27y^{31} + \cdots + 2039149884y + 136632721$
c_3, c_6	$y^{32} + 3y^{31} + \cdots - 548y + 49$
c_4, c_9	$y^{32} + 35y^{31} + \cdots - 3846760y + 219961$
c_5, c_{12}	$(y^2 + y + 1)^{16}$
c_7, c_{10}, c_{11}	$(y^8 + 9y^7 + 31y^6 + 50y^5 + 39y^4 + 22y^3 + 18y^2 + 4y + 1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.647085 + 0.502738I$ $a = -0.608766 - 0.550255I$ $b = 0.182892 - 0.575506I$	$1.67479 - 0.15547I$	$1.58319 - 0.32355I$
$u = -0.647085 + 0.502738I$ $a = -0.804300 + 0.904540I$ $b = -0.766883 - 0.706358I$	$1.67479 - 4.21524I$	$1.58319 + 6.60465I$
$u = -0.647085 + 0.502738I$ $a = 0.575472 - 0.193692I$ $b = 0.785648 + 1.061200I$	$1.67479 - 4.21524I$	$1.58319 + 6.60465I$
$u = -0.647085 + 0.502738I$ $a = 0.1075680 - 0.0033399I$ $b = -0.499575 + 0.414336I$	$1.67479 - 0.15547I$	$1.58319 - 0.32355I$
$u = -0.647085 - 0.502738I$ $a = -0.608766 + 0.550255I$ $b = 0.182892 + 0.575506I$	$1.67479 + 0.15547I$	$1.58319 + 0.32355I$
$u = -0.647085 - 0.502738I$ $a = -0.804300 - 0.904540I$ $b = -0.766883 + 0.706358I$	$1.67479 + 4.21524I$	$1.58319 - 6.60465I$
$u = -0.647085 - 0.502738I$ $a = 0.575472 + 0.193692I$ $b = 0.785648 - 1.061200I$	$1.67479 + 4.21524I$	$1.58319 - 6.60465I$
$u = -0.647085 - 0.502738I$ $a = 0.1075680 + 0.0033399I$ $b = -0.499575 - 0.414336I$	$1.67479 + 0.15547I$	$1.58319 + 0.32355I$
$u = 0.283060 + 0.443755I$ $a = -0.741752 + 0.575430I$ $b = -0.28282 - 1.40078I$	$-4.93480 - 0.98388I$	$-2.00000 - 3.22135I$
$u = 0.283060 + 0.443755I$ $a = 0.843131 + 0.210182I$ $b = 1.37494 + 1.03565I$	$-4.93480 + 3.07589I$	$-2.00000 - 10.14955I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.283060 + 0.443755I$ $a = 3.53954 + 0.62247I$ $b = 1.006860 - 0.355732I$	$-4.93480 - 0.98388I$	$-2.00000 - 3.22135I$
$u = 0.283060 + 0.443755I$ $a = -3.27944 + 1.61382I$ $b = -0.215771 + 0.469647I$	$-4.93480 + 3.07589I$	$-2.00000 - 10.14955I$
$u = 0.283060 - 0.443755I$ $a = -0.741752 - 0.575430I$ $b = -0.28282 + 1.40078I$	$-4.93480 + 0.98388I$	$-2.00000 + 3.22135I$
$u = 0.283060 - 0.443755I$ $a = 0.843131 - 0.210182I$ $b = 1.37494 - 1.03565I$	$-4.93480 - 3.07589I$	$-2.00000 + 10.14955I$
$u = 0.283060 - 0.443755I$ $a = 3.53954 - 0.62247I$ $b = 1.006860 + 0.355732I$	$-4.93480 + 0.98388I$	$-2.00000 + 3.22135I$
$u = 0.283060 - 0.443755I$ $a = -3.27944 - 1.61382I$ $b = -0.215771 - 0.469647I$	$-4.93480 - 3.07589I$	$-2.00000 + 10.14955I$
$u = 0.06382 + 1.51723I$ $a = -0.59184 - 1.50907I$ $b = -0.55330 - 2.21455I$	$-11.54440 + 0.15547I$	$-5.58319 + 0.32355I$
$u = 0.06382 + 1.51723I$ $a = -1.44604 + 1.19889I$ $b = -0.332579 - 0.058640I$	$-11.54440 + 4.21524I$	$-5.58319 - 6.60465I$
$u = 0.06382 + 1.51723I$ $a = 2.02681 + 1.39192I$ $b = 1.97903 + 1.60911I$	$-11.54440 + 4.21524I$	$-5.58319 - 6.60465I$
$u = 0.06382 + 1.51723I$ $a = 2.54516 - 0.28930I$ $b = 1.072830 + 0.013443I$	$-11.54440 + 0.15547I$	$-5.58319 + 0.32355I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.06382 - 1.51723I$ $a = -0.59184 + 1.50907I$ $b = -0.55330 + 2.21455I$	$-11.54440 - 0.15547I$	$-5.58319 - 0.32355I$
$u = 0.06382 - 1.51723I$ $a = -1.44604 - 1.19889I$ $b = -0.332579 + 0.058640I$	$-11.54440 - 4.21524I$	$-5.58319 + 6.60465I$
$u = 0.06382 - 1.51723I$ $a = 2.02681 - 1.39192I$ $b = 1.97903 - 1.60911I$	$-11.54440 - 4.21524I$	$-5.58319 + 6.60465I$
$u = 0.06382 - 1.51723I$ $a = 2.54516 + 0.28930I$ $b = 1.072830 - 0.013443I$	$-11.54440 - 0.15547I$	$-5.58319 - 0.32355I$
$u = -0.19980 + 1.51366I$ $a = -1.337750 - 0.048574I$ $b = -1.080980 - 0.367558I$	$-4.93480 - 3.20880I$	$-2.00000 - 0.42152I$
$u = -0.19980 + 1.51366I$ $a = 0.577550 - 0.281035I$ $b = 0.431533 + 0.452389I$	$-4.93480 - 3.20880I$	$-2.00000 - 0.42152I$
$u = -0.19980 + 1.51366I$ $a = -1.71375 + 0.21126I$ $b = -0.977836 - 0.794944I$	$-4.93480 - 7.26857I$	$-2.00000 + 6.50668I$
$u = -0.19980 + 1.51366I$ $a = 1.80840 + 0.61189I$ $b = 1.37603 + 1.31497I$	$-4.93480 - 7.26857I$	$-2.00000 + 6.50668I$
$u = -0.19980 - 1.51366I$ $a = -1.337750 + 0.048574I$ $b = -1.080980 + 0.367558I$	$-4.93480 + 3.20880I$	$-2.00000 + 0.42152I$
$u = -0.19980 - 1.51366I$ $a = 0.577550 + 0.281035I$ $b = 0.431533 - 0.452389I$	$-4.93480 + 3.20880I$	$-2.00000 + 0.42152I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.19980 - 1.51366I$ $a = -1.71375 - 0.21126I$ $b = -0.977836 + 0.794944I$	$-4.93480 + 7.26857I$	$-2.00000 - 6.50668I$
$u = -0.19980 - 1.51366I$ $a = 1.80840 - 0.61189I$ $b = 1.37603 - 1.31497I$	$-4.93480 + 7.26857I$	$-2.00000 - 6.50668I$

III.

$$\boldsymbol{I_3^u = \langle -u^{12}-2u^{11}+\cdots+b+2u,\ -u^{12}-3u^{11}+\cdots+a+2,\ u^{15}+3u^{14}+\cdots+u^2+1\rangle}$$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_3 = \begin{pmatrix} u^{12} + 3u^{11} + \cdots - 6u - 2 \\ u^{12} + 2u^{11} + \cdots - 4u^2 - 2u \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} u^{13} + 3u^{12} + \cdots - 6u - 2 \\ u^{13} + 3u^{12} + \cdots - 6u^2 - 2u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^{12} - 3u^{11} + \cdots - 6u - 1 \\ -u^{12} - 2u^{11} + \cdots - 4u^2 - 2u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^{14} - 4u^{13} + \cdots + 6u + 1 \\ -u^{13} - 2u^{12} + \cdots + u + 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^{13} + 3u^{12} + \cdots - 6u - 2 \\ u^{13} + 3u^{12} + \cdots - 3u^2 - 2u \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} u^{14} + 3u^{13} + \cdots - 5u - 2 \\ u^{14} + 3u^{13} + \cdots - 6u^2 - 2u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^{14} - 3u^{13} + \cdots - 37u^2 - 9u \\ -u^9 - 3u^8 - 8u^7 - 15u^6 - 21u^5 - 24u^4 - 19u^3 - 10u^2 - u + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 3u^{14} + 9u^{13} + 39u^{12} + 85u^{11} + 192u^{10} + 312u^9 + 456u^8 + 544u^7 + 524u^6 + 425u^5 + 230u^4 + 94u^3 - u^2 - 5u + 4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{15} - 13u^{14} + \cdots + 135u - 13$
c_2, c_8	$u^{15} - u^{14} + \cdots + 8u - 5$
c_3, c_6	$u^{15} + u^{13} + \cdots + 2u + 1$
c_4, c_9	$u^{15} + 6u^{13} + \cdots - 5u^2 + 1$
c_5	$u^{15} + u^{14} + \cdots + 4u + 5$
c_7	$u^{15} + 3u^{14} + \cdots + u^2 + 1$
c_{10}, c_{11}	$u^{15} - 3u^{14} + \cdots - u^2 - 1$
c_{12}	$u^{15} - u^{14} + \cdots + 4u - 5$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{15} - 13y^{14} + \cdots + 1221y - 169$
c_2, c_8	$y^{15} + 13y^{14} + \cdots + 134y - 25$
c_3, c_6	$y^{15} + 2y^{14} + \cdots + 14y^2 - 1$
c_4, c_9	$y^{15} + 12y^{14} + \cdots + 10y - 1$
c_5, c_{12}	$y^{15} + 13y^{14} + \cdots - 174y - 25$
c_7, c_{10}, c_{11}	$y^{15} + 17y^{14} + \cdots - 2y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.979786$ $a=\ \ 0.00878589$ $b=-0.425852$	0.893453	-18.0630
$u=-0.538899+0.815631I$ $a=-0.323491-0.663687I$ $b=\ \ 0.463057-0.615642I$	$2.80421+0.34444I$	$5.47559-1.58720I$
$u=-0.538899-0.815631I$ $a=-0.323491+0.663687I$ $b=\ \ 0.463057+0.615642I$	$2.80421-0.34444I$	$5.47559+1.58720I$
$u=-0.540426+0.399319I$ $a=\ \ 0.715731-0.927770I$ $b=\ \ 0.827811+0.993604I$	$3.92352-4.05135I$	$8.84525+7.48159I$
$u=-0.540426-0.399319I$ $a=\ \ 0.715731+0.927770I$ $b=\ \ 0.827811-0.993604I$	$3.92352+4.05135I$	$8.84525-7.48159I$
$u=\ \ 0.04766+1.49071I$ $a=-1.79550-0.47780I$ $b=-1.01433-1.13326I$	$-10.87770+3.02849I$	$-1.19692-0.76371I$
$u=\ \ 0.04766-1.49071I$ $a=-1.79550+0.47780I$ $b=-1.01433+1.13326I$	$-10.87770-3.02849I$	$-1.19692+0.76371I$
$u=\ \ 0.22132+1.48142I$ $a=\ \ 0.568013+0.587498I$ $b=\ \ 0.143716+0.621121I$	$-9.06968-0.10898I$	$-0.251815+0.208478I$
$u=\ \ 0.22132-1.48142I$ $a=\ \ 0.568013-0.587498I$ $b=\ \ 0.143716-0.621121I$	$-9.06968+0.10898I$	$-0.251815-0.208478I$
$u=-0.25430+1.48057I$ $a=-1.036910-0.006003I$ $b=-0.752315-0.563007I$	$-4.55807-4.26480I$	$1.35309+7.23493I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.25430-1.48057I$ $a=-1.036910+0.006003I$ $b=-0.752315+0.563007I$	$-4.55807+4.26480I$	$1.35309-7.23493I$
$u=-0.15895+1.50654I$ $a=\ \ 1.85054+0.31350I$ $b=\ \ 1.16909+1.16141I$	$-2.43732-6.50952I$	$1.77219+6.05339I$
$u=-0.15895-1.50654I$ $a=\ \ 1.85054-0.31350I$ $b=\ \ 1.16909-1.16141I$	$-2.43732+6.50952I$	$1.77219-6.05339I$
$u=\ \ 0.213490+0.214314I$ $a=-3.98278-1.24606I$ $b=-0.624103-0.812395I$	$-4.90567+2.21151I$	$-1.46603-0.60006I$
$u=\ \ 0.213490-0.214314I$ $a=-3.98278+1.24606I$ $b=-0.624103+0.812395I$	$-4.90567-2.21151I$	$-1.46603+0.60006I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^8+7u^7+17u^6+14u^5-u^4+2u^3+6u^2-4u+1)^4$ $\cdot(u^{15}-13u^{14}+\cdots+135u-13)(u^{25}-18u^{24}+\cdots+200u-192)$
c_2, c_8	$(u^{15}-u^{14}+\cdots+8u-5)(u^{25}+u^{24}+\cdots+49u-85)$ $\cdot(u^{32}-u^{31}+\cdots-18342u+11689)$
c_3, c_6	$(u^{15}+u^{13}+\cdots+2u+1)(u^{25}-4u^{23}+\cdots+7u-1)$ $\cdot(u^{32}+7u^{31}+\cdots-32u+7)$
c_4, c_9	$(u^{15}+6u^{13}+\cdots-5u^2+1)(u^{25}+17u^{23}+\cdots+u-1)$ $\cdot(u^{32}-u^{31}+\cdots+2638u+469)$
c_5	$((u^2-u+1)^{16})(u^{15}+u^{14}+\cdots+4u+5)$ $\cdot(u^{25}+16u^{24}+\cdots-2816u-256)$
c_7	$((u^8-u^7+\cdots+2u^2+1)^4)(u^{15}+3u^{14}+\cdots+u^2+1)$ $\cdot(u^{25}+8u^{24}+\cdots-42u-4)$
c_{10}, c_{11}	$((u^8-u^7+\cdots+2u^2+1)^4)(u^{15}-3u^{14}+\cdots-u^2-1)$ $\cdot(u^{25}+8u^{24}+\cdots-42u-4)$
c_{12}	$((u^2-u+1)^{16})(u^{15}-u^{14}+\cdots+4u-5)$ $\cdot(u^{25}+16u^{24}+\cdots-2816u-256)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^8 - 15y^7 + 91y^6 - 246y^5 + 207y^4 + 130y^3 + 50y^2 - 4y + 1)^4$ $\cdot (y^{15} - 13y^{14} + \cdots + 1221y - 169)$ $\cdot (y^{25} - 28y^{24} + \cdots + 395968y - 36864)$
c_2, c_8	$(y^{15} + 13y^{14} + \cdots + 134y - 25)(y^{25} + 23y^{24} + \cdots - 26159y - 7225)$ $\cdot (y^{32} + 27y^{31} + \cdots + 2039149884y + 136632721)$
c_3, c_6	$(y^{15} + 2y^{14} + \cdots + 14y^2 - 1)(y^{25} - 8y^{24} + \cdots + 71y - 1)$ $\cdot (y^{32} + 3y^{31} + \cdots - 548y + 49)$
c_4, c_9	$(y^{15} + 12y^{14} + \cdots + 10y - 1)(y^{25} + 34y^{24} + \cdots - 11y - 1)$ $\cdot (y^{32} + 35y^{31} + \cdots - 3846760y + 219961)$
c_5, c_{12}	$((y^2 + y + 1)^{16})(y^{15} + 13y^{14} + \cdots - 174y - 25)$ $\cdot (y^{25} + 14y^{24} + \cdots + 393216y - 65536)$
c_7, c_{10}, c_{11}	$(y^8 + 9y^7 + 31y^6 + 50y^5 + 39y^4 + 22y^3 + 18y^2 + 4y + 1)^4$ $\cdot (y^{15} + 17y^{14} + \cdots - 2y - 1)(y^{25} + 26y^{24} + \cdots - 164y - 16)$