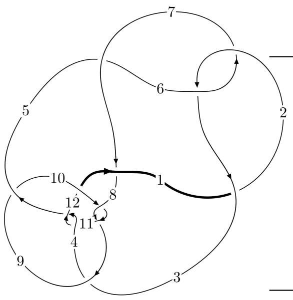
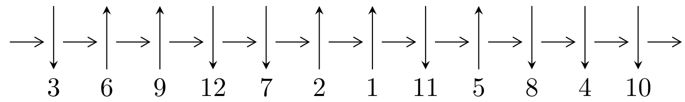
$12a_{0416}$ ($K12a_{0416}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I^u_1 = \langle 6.41786 \times 10^{58} u^{106} + 1.11346 \times 10^{59} u^{105} + \cdots + 3.68055 \times 10^{58} b + 3.69355 \times 10^{58},$$
$$5.68621 \times 10^{58} u^{106} + 8.00830 \times 10^{58} u^{105} + \cdots + 3.68055 \times 10^{58} a + 2.33644 \times 10^{58},\ u^{107} + 2u^{106} + \cdots + 5u^{2}$$
$$I^u_2 = \langle 3u^3 - 10u^2 + 16b + 5u - 1,\ u^3 + 2u^2 + 16a - 9u + 5,\ u^4 - u^3 + u^2 + 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 111 representations.

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[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. $\boldsymbol{I_1^u = \langle 6.42 \times 10^{58} u^{106} + 1.11 \times 10^{59} u^{105} + \cdots + 3.68 \times 10^{58} b + 3.69 \times 10^{58},\ 5.69 \times 10^{58} u^{106} + 8.01 \times 10^{58} u^{105} + \cdots + 3.68 \times 10^{58} a + 2.34 \times 10^{58},\ u^{107} + 2u^{106} + \cdots + 5u^2 + 1 \rangle}$

(i) Arc colorings

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

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

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

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

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

$$a_8 = \begin{pmatrix} u^7 + 2u^5 + 2u^3 + 2u \\ u^7 + u^5 + 2u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -1.54494u^{106} - 2.17584u^{105} + \cdots + 4.67915u - 0.634808 \\ -1.74372u^{106} - 3.02525u^{105} + \cdots - 0.345092u - 1.00353 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -1.61452u^{106} - 2.12033u^{105} + \cdots + 2.40127u - 0.833938 \\ -1.79319u^{106} - 3.10408u^{105} + \cdots - 1.51075u - 1.20808 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -1.30918u^{106} - 1.99248u^{105} + \cdots + 4.75193u - 0.619919 \\ -1.49000u^{106} - 2.55809u^{105} + \cdots - 0.284829u - 0.785527 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1.91247u^{106} + 1.68905u^{105} + \cdots + 0.287353u - 2.38447 \\ 1.66556u^{106} + 3.26726u^{105} + \cdots + 3.40325u + 0.816457 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.193027u^{106} + 0.449266u^{105} + \cdots - 2.00140u + 0.00824800 \\ 0.232615u^{106} + 0.0280210u^{105} + \cdots + 4.32238u - 1.20722 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.124020u^{106} - 0.719172u^{105} + \cdots - 1.22907u - 7.39183$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{107} + 36u^{106} + \cdots - 10u - 1$
c_2, c_6	$u^{107} - 2u^{106} + \cdots - 5u^2 - 1$
c_3	$16(16u^{107} - 75u^{106} + \cdots - 2.85939 \times 10^8 u - 5.57740 \times 10^7)$
c_4, c_{11}	$u^{107} + 2u^{106} + \cdots + 4u + 1$
c_7	$u^{107} + 10u^{106} + \cdots - 55360u - 60751$
c_8, c_{10}	$u^{107} - 5u^{106} + \cdots + 3671u + 256$
c_9	$u^{107} - 3u^{106} + \cdots - 14208u - 4096$
c_{12}	$16(16u^{107} + 83u^{106} + \cdots + 1.25403 \times 10^8 u - 9972353)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{107} + 72y^{106} + \cdots - 22y - 1$
c_2, c_6	$y^{107} + 36y^{106} + \cdots - 10y - 1$
c_3	$256(256y^{107} + 25319y^{106} + \cdots - 7.95186 \times 10^{16}y - 3.11074 \times 10^{15})$
c_4, c_{11}	$y^{107} - 72y^{106} + \cdots - 10y - 1$
c_7	$y^{107} + 36y^{106} + \cdots - 86065371038y - 3690684001$
c_8, c_{10}	$y^{107} - 85y^{106} + \cdots + 5667729y - 65536$
c_9	$y^{107} + 27y^{106} + \cdots - 1042857984y - 16777216$
c_{12}	256 $\cdot (256y^{107} - 3401y^{106} + \cdots + 3072980132794765y - 99447824356609)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.572555 + 0.816228I$ $a = 2.52809 + 0.77404I$ $b = 0.51685 + 1.60831I$	$-2.67149 + 4.54950I$	0
$u = 0.572555 - 0.816228I$ $a = 2.52809 - 0.77404I$ $b = 0.51685 - 1.60831I$	$-2.67149 - 4.54950I$	0
$u = -0.739110 + 0.684442I$ $a = 1.64740 + 0.61961I$ $b = 1.54687 + 0.42061I$	$-0.333003 + 0.042241I$	0
$u = -0.739110 - 0.684442I$ $a = 1.64740 - 0.61961I$ $b = 1.54687 - 0.42061I$	$-0.333003 - 0.042241I$	0
$u = 0.693461 + 0.733009I$ $a = 0.96918 + 4.82361I$ $b = 0.47980 + 4.66509I$	$-1.47357 - 0.02935I$	0
$u = 0.693461 - 0.733009I$ $a = 0.96918 - 4.82361I$ $b = 0.47980 - 4.66509I$	$-1.47357 + 0.02935I$	0
$u = -0.647407 + 0.776662I$ $a = -1.38461 + 0.99050I$ $b = -0.48414 + 1.42730I$	$0.84772 - 2.11192I$	0
$u = -0.647407 - 0.776662I$ $a = -1.38461 - 0.99050I$ $b = -0.48414 - 1.42730I$	$0.84772 + 2.11192I$	0
$u = 0.046668 + 1.012190I$ $a = 1.11018 + 1.35436I$ $b = -1.68594 - 1.42232I$	$-5.79533 - 0.00929I$	0
$u = 0.046668 - 1.012190I$ $a = 1.11018 - 1.35436I$ $b = -1.68594 + 1.42232I$	$-5.79533 + 0.00929I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.779058 + 0.650419I$ $a = 2.55013 - 1.30493I$ $b = 1.56781 - 1.66329I$	$-0.45641 + 6.27660I$	0
$u = -0.779058 - 0.650419I$ $a = 2.55013 + 1.30493I$ $b = 1.56781 + 1.66329I$	$-0.45641 - 6.27660I$	0
$u = -0.718616 + 0.656188I$ $a = 1.50113 - 0.25187I$ $b = 1.54019 - 1.12578I$	$-0.67697 + 1.53545I$	0
$u = -0.718616 - 0.656188I$ $a = 1.50113 + 0.25187I$ $b = 1.54019 + 1.12578I$	$-0.67697 - 1.53545I$	0
$u = 0.777566 + 0.672502I$ $a = -1.70061 - 0.94033I$ $b = -1.06308 - 1.09985I$	$3.07553 - 2.64129I$	0
$u = 0.777566 - 0.672502I$ $a = -1.70061 + 0.94033I$ $b = -1.06308 + 1.09985I$	$3.07553 + 2.64129I$	0
$u = -0.078882 + 1.030440I$ $a = -0.621536 + 0.191873I$ $b = 1.48564 + 0.21337I$	$-2.81526 - 2.54077I$	0
$u = -0.078882 - 1.030440I$ $a = -0.621536 - 0.191873I$ $b = 1.48564 - 0.21337I$	$-2.81526 + 2.54077I$	0
$u = 0.018006 + 1.038180I$ $a = 1.04825 - 1.03206I$ $b = -1.51635 + 0.37279I$	$-5.96646 + 1.12046I$	0
$u = 0.018006 - 1.038180I$ $a = 1.04825 + 1.03206I$ $b = -1.51635 - 0.37279I$	$-5.96646 - 1.12046I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.727533 + 0.620282I$ $a = -2.21540 + 1.31033I$ $b = -1.97976 - 0.19879I$	$-5.08482 - 3.05325I$	0
$u = 0.727533 - 0.620282I$ $a = -2.21540 - 1.31033I$ $b = -1.97976 + 0.19879I$	$-5.08482 + 3.05325I$	0
$u = 0.837675 + 0.627096I$ $a = 1.61326 + 0.70242I$ $b = 1.42239 + 1.01685I$	$-0.72153 - 6.99583I$	0
$u = 0.837675 - 0.627096I$ $a = 1.61326 - 0.70242I$ $b = 1.42239 - 1.01685I$	$-0.72153 + 6.99583I$	0
$u = -0.833095 + 0.636825I$ $a = -2.29893 + 0.83993I$ $b = -1.98652 + 1.23353I$	$-5.55745 + 12.65750I$	0
$u = -0.833095 - 0.636825I$ $a = -2.29893 - 0.83993I$ $b = -1.98652 - 1.23353I$	$-5.55745 - 12.65750I$	0
$u = 0.663407 + 0.676201I$ $a = 1.72189 + 0.62515I$ $b = 0.962894 - 0.088589I$	$-1.161400 + 0.572745I$	0
$u = 0.663407 - 0.676201I$ $a = 1.72189 - 0.62515I$ $b = 0.962894 + 0.088589I$	$-1.161400 - 0.572745I$	0
$u = 0.072508 + 1.059040I$ $a = 0.718322 - 0.057892I$ $b = -2.23899 + 0.56383I$	$-6.38996 + 5.89641I$	0
$u = 0.072508 - 1.059040I$ $a = 0.718322 + 0.057892I$ $b = -2.23899 - 0.56383I$	$-6.38996 - 5.89641I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.021482 + 1.065870I$ $a = -0.498349 - 0.295555I$ $b = 1.57487 - 1.20386I$	$-10.53900 - 2.34670I$	0
$u = -0.021482 - 1.065870I$ $a = -0.498349 + 0.295555I$ $b = 1.57487 + 1.20386I$	$-10.53900 + 2.34670I$	0
$u = -0.861913 + 0.640246I$ $a = -1.127330 - 0.215348I$ $b = -1.160100 + 0.147222I$	$-4.62472 + 0.42113I$	0
$u = -0.861913 - 0.640246I$ $a = -1.127330 + 0.215348I$ $b = -1.160100 - 0.147222I$	$-4.62472 - 0.42113I$	0
$u = -0.733935 + 0.841377I$ $a = -0.207227 - 0.928291I$ $b = -0.919580 + 0.275183I$	$2.46950 - 5.13290I$	0
$u = -0.733935 - 0.841377I$ $a = -0.207227 + 0.928291I$ $b = -0.919580 - 0.275183I$	$2.46950 + 5.13290I$	0
$u = 0.111769 + 1.113810I$ $a = -0.968189 - 0.007849I$ $b = 2.09870 - 0.48022I$	$-12.1009 + 12.0094I$	0
$u = 0.111769 - 1.113810I$ $a = -0.968189 + 0.007849I$ $b = 2.09870 + 0.48022I$	$-12.1009 - 12.0094I$	0
$u = 0.765238 + 0.818174I$ $a = -0.212152 - 0.487781I$ $b = 0.491573 + 0.001552I$	$5.25937 + 0.90397I$	0
$u = 0.765238 - 0.818174I$ $a = -0.212152 + 0.487781I$ $b = 0.491573 - 0.001552I$	$5.25937 - 0.90397I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.634185 + 0.597497I$ $a = -1.20096 + 2.39832I$ $b = 0.044086 + 0.934957I$	$-5.60148 - 1.35298I$	0
$u = -0.634185 - 0.597497I$ $a = -1.20096 - 2.39832I$ $b = 0.044086 - 0.934957I$	$-5.60148 + 1.35298I$	0
$u = -0.109524 + 1.125450I$ $a = 0.705092 + 0.077937I$ $b = -1.49776 - 0.36174I$	$-7.29613 - 6.22971I$	0
$u = -0.109524 - 1.125450I$ $a = 0.705092 - 0.077937I$ $b = -1.49776 + 0.36174I$	$-7.29613 + 6.22971I$	0
$u = 0.132569 + 1.127410I$ $a = -0.452270 - 0.144598I$ $b = 1.151400 + 0.385658I$	$-11.45990 - 0.25981I$	0
$u = 0.132569 - 1.127410I$ $a = -0.452270 + 0.144598I$ $b = 1.151400 - 0.385658I$	$-11.45990 + 0.25981I$	0
$u = -0.721484 + 0.881806I$ $a = 0.287036 + 0.095689I$ $b = 1.006650 - 0.068646I$	$2.34405 - 0.40468I$	0
$u = -0.721484 - 0.881806I$ $a = 0.287036 - 0.095689I$ $b = 1.006650 + 0.068646I$	$2.34405 + 0.40468I$	0
$u = -0.636751 + 0.946553I$ $a = -0.38190 + 1.89505I$ $b = 1.13597 + 1.16685I$	$0.30477 - 2.89231I$	0
$u = -0.636751 - 0.946553I$ $a = -0.38190 - 1.89505I$ $b = 1.13597 - 1.16685I$	$0.30477 + 2.89231I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.605466 + 0.969047I$ $a = -0.47718 + 2.60038I$ $b = -1.75712 + 1.09425I$	$-3.29947 + 0.02397I$	0
$u = 0.605466 - 0.969047I$ $a = -0.47718 - 2.60038I$ $b = -1.75712 - 1.09425I$	$-3.29947 - 0.02397I$	0
$u = 0.501653 + 1.045680I$ $a = -0.76284 - 1.21835I$ $b = 0.416918 - 0.654919I$	$-9.20052 + 7.31020I$	0
$u = 0.501653 - 1.045680I$ $a = -0.76284 + 1.21835I$ $b = 0.416918 + 0.654919I$	$-9.20052 - 7.31020I$	0
$u = 0.531187 + 1.038580I$ $a = 0.38097 - 2.08084I$ $b = 1.352130 - 0.228748I$	$-9.54319 - 5.13852I$	0
$u = 0.531187 - 1.038580I$ $a = 0.38097 + 2.08084I$ $b = 1.352130 + 0.228748I$	$-9.54319 + 5.13852I$	0
$u = -0.245463 + 0.792676I$ $a = 0.199411 + 0.599935I$ $b = 0.271663 + 0.310043I$	$-0.56851 - 1.64515I$	$0. + 5.38816I$
$u = -0.245463 - 0.792676I$ $a = 0.199411 - 0.599935I$ $b = 0.271663 - 0.310043I$	$-0.56851 + 1.64515I$	$0. - 5.38816I$
$u = 0.665165 + 0.963024I$ $a = 3.68761 + 3.95714I$ $b = -1.50055 + 3.53640I$	$-2.17929 + 5.27880I$	0
$u = 0.665165 - 0.963024I$ $a = 3.68761 - 3.95714I$ $b = -1.50055 - 3.53640I$	$-2.17929 - 5.27880I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.745883 + 0.914563I$ $a = -0.0171571 - 0.0566864I$ $b = -0.494211 - 0.276217I$	$4.96743 + 4.80385I$	0
$u = 0.745883 - 0.914563I$ $a = -0.0171571 + 0.0566864I$ $b = -0.494211 + 0.276217I$	$4.96743 - 4.80385I$	0
$u = -0.811697 + 0.857361I$ $a = 0.450118 - 0.099056I$ $b = -0.312448 - 0.472158I$	$-0.73668 + 3.73977I$	0
$u = -0.811697 - 0.857361I$ $a = 0.450118 + 0.099056I$ $b = -0.312448 + 0.472158I$	$-0.73668 - 3.73977I$	0
$u = -0.529166 + 1.057900I$ $a = -0.137429 - 1.371400I$ $b = -0.821551 - 0.155925I$	$-4.70260 - 0.83335I$	0
$u = -0.529166 - 1.057900I$ $a = -0.137429 + 1.371400I$ $b = -0.821551 + 0.155925I$	$-4.70260 + 0.83335I$	0
$u = 0.656100 + 0.987672I$ $a = -1.02169 + 2.13604I$ $b = -1.127310 + 0.026416I$	$-2.10121 + 4.59471I$	0
$u = 0.656100 - 0.987672I$ $a = -1.02169 - 2.13604I$ $b = -1.127310 - 0.026416I$	$-2.10121 - 4.59471I$	0
$u = -0.641946 + 1.002990I$ $a = -1.20790 + 2.08709I$ $b = 0.15928 + 1.79219I$	$-6.75012 - 3.71244I$	0
$u = -0.641946 - 1.002990I$ $a = -1.20790 - 2.08709I$ $b = 0.15928 - 1.79219I$	$-6.75012 + 3.71244I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.749094+0.305561I$ $a=\ \ 1.051380-0.015805I$ $b=\ \ 0.884161+0.341399I$	$-2.47323-3.82700I$	$-4.04906+6.12784I$
$u=-0.749094-0.305561I$ $a=\ \ 1.051380+0.015805I$ $b=\ \ 0.884161-0.341399I$	$-2.47323+3.82700I$	$-4.04906-6.12784I$
$u=-0.794258+0.900063I$ $a=\ \ 0.0218861+0.0446674I$ $b=\ \ 0.161813-0.644801I$	$-0.87138-9.73384I$	0
$u=-0.794258-0.900063I$ $a=\ \ 0.0218861-0.0446674I$ $b=\ \ 0.161813+0.644801I$	$-0.87138+9.73384I$	0
$u=-0.672273+1.000660I$ $a=\ \ 0.36256-2.06486I$ $b=-1.85620-0.99758I$	$-1.70112-6.88767I$	0
$u=-0.672273-1.000660I$ $a=\ \ 0.36256+2.06486I$ $b=-1.85620+0.99758I$	$-1.70112+6.88767I$	0
$u=-0.688074+0.993783I$ $a=-1.68115-1.97202I$ $b=-1.87014+0.44496I$	$-1.26073-5.50150I$	0
$u=-0.688074-0.993783I$ $a=-1.68115+1.97202I$ $b=-1.87014-0.44496I$	$-1.26073+5.50150I$	0
$u=\ \ 0.667865+1.014470I$ $a=\ \ 1.59065-1.79707I$ $b=\ \ 2.56053+0.11805I$	$-6.24275+8.40853I$	0
$u=\ \ 0.667865-1.014470I$ $a=\ \ 1.59065+1.79707I$ $b=\ \ 2.56053-0.11805I$	$-6.24275-8.40853I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.746220 + 0.243908I$ $a = -0.548011 - 0.781846I$ $b = -0.682427 - 0.253394I$	$-6.82390 - 2.87754I$	$-7.55606 + 2.65618I$
$u = 0.746220 - 0.243908I$ $a = -0.548011 + 0.781846I$ $b = -0.682427 + 0.253394I$	$-6.82390 + 2.87754I$	$-7.55606 - 2.65618I$
$u = 0.717094 + 0.295055I$ $a = -1.73531 - 0.02894I$ $b = -1.35567 + 0.43051I$	$-7.41312 + 9.67363I$	$-4.73264 - 6.38997I$
$u = 0.717094 - 0.295055I$ $a = -1.73531 + 0.02894I$ $b = -1.35567 - 0.43051I$	$-7.41312 - 9.67363I$	$-4.73264 + 6.38997I$
$u = 0.699336 + 1.008630I$ $a = -0.14409 - 2.25681I$ $b = 1.39931 - 1.21172I$	$2.06203 + 8.23607I$	0
$u = 0.699336 - 1.008630I$ $a = -0.14409 + 2.25681I$ $b = 1.39931 + 1.21172I$	$2.06203 - 8.23607I$	0
$u = -0.693869 + 1.018100I$ $a = 0.30703 - 3.14528I$ $b = -2.01636 - 1.87103I$	$-1.55940 - 11.85470I$	0
$u = -0.693869 - 1.018100I$ $a = 0.30703 + 3.14528I$ $b = -2.01636 + 1.87103I$	$-1.55940 + 11.85470I$	0
$u = 0.865077 + 0.912693I$ $a = -0.147695 - 0.056476I$ $b = 0.017267 - 0.336869I$	$5.02105 + 3.20233I$	0
$u = 0.865077 - 0.912693I$ $a = -0.147695 + 0.056476I$ $b = 0.017267 + 0.336869I$	$5.02105 - 3.20233I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.710551+1.042030I$ $a=\ 0.03854+2.97997I$ $b=\ 2.27288+1.28431I$	$-6.7863-18.4344I$	0
$u=-0.710551-1.042030I$ $a=\ 0.03854-2.97997I$ $b=\ 2.27288-1.28431I$	$-6.7863+18.4344I$	0
$u=\ 0.708638+1.046960I$ $a=\ 0.13873+2.21107I$ $b=-1.68135+1.06324I$	$-1.99428+12.77590I$	0
$u=\ 0.708638-1.046960I$ $a=\ 0.13873-2.21107I$ $b=-1.68135-1.06324I$	$-1.99428-12.77590I$	0
$u=-0.720384+1.052700I$ $a=\ 0.540882+1.306510I$ $b=\ 1.362950+0.189864I$	$-5.89103-6.31209I$	0
$u=-0.720384-1.052700I$ $a=\ 0.540882-1.306510I$ $b=\ 1.362950-0.189864I$	$-5.89103+6.31209I$	0
$u=-0.219769+0.626637I$ $a=-1.28173+2.73269I$ $b=\ 0.397565-0.307830I$	$-5.57963-1.60313I$	$-10.66319+3.91153I$
$u=-0.219769-0.626637I$ $a=-1.28173-2.73269I$ $b=\ 0.397565+0.307830I$	$-5.57963+1.60313I$	$-10.66319-3.91153I$
$u=\ 0.530510+0.326469I$ $a=\ 2.34754+0.32620I$ $b=\ 0.902410-0.116640I$	$-2.07804+4.29773I$	$-3.00401-7.13446I$
$u=\ 0.530510-0.326469I$ $a=\ 2.34754-0.32620I$ $b=\ 0.902410+0.116640I$	$-2.07804-4.29773I$	$-3.00401+7.13446I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.492999 + 0.207407I$ $a = -1.344610 + 0.074414I$ $b = -0.509915 - 0.140971I$	$1.044660 - 0.934483I$	$4.99330 + 2.84480I$
$u = -0.492999 - 0.207407I$ $a = -1.344610 - 0.074414I$ $b = -0.509915 + 0.140971I$	$1.044660 + 0.934483I$	$4.99330 - 2.84480I$
$u = 0.405448 + 0.294968I$ $a = 0.58034 + 1.41016I$ $b = 0.634644 + 0.871857I$	$-1.95599 - 1.13377I$	$-2.53809 - 1.17932I$
$u = 0.405448 - 0.294968I$ $a = 0.58034 - 1.41016I$ $b = 0.634644 - 0.871857I$	$-1.95599 + 1.13377I$	$-2.53809 + 1.17932I$
$u = 0.190818 + 0.343308I$ $a = 0.80570 + 1.44261I$ $b = 0.599634 - 0.623946I$	$-1.77412 + 0.60929I$	$-5.34675 + 2.38641I$
$u = 0.190818 - 0.343308I$ $a = 0.80570 - 1.44261I$ $b = 0.599634 + 0.623946I$	$-1.77412 - 0.60929I$	$-5.34675 - 2.38641I$
$u = -0.340862$ $a = -1.81662$ $b = -2.49020$	-3.83963	12.7780

II.

$$\boldsymbol{I^u_2 = \langle 3u^3 - 10u^2 + 16b + 5u - 1,\ u^3 + 2u^2 + 16a - 9u + 5,\ u^4 - u^3 + u^2 + 1\rangle}$$

(i) Arc colorings

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

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

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

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

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

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

$$a_{10} = \begin{pmatrix} -\frac{1}{16}u^3 - \frac{1}{8}u^2 + \frac{9}{16}u - \frac{5}{16} \\ -\frac{3}{16}u^3 + \frac{5}{8}u^2 - \frac{5}{16}u + \frac{1}{16} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.0625000u^3 + 1.87500u^2 + 0.562500u + 0.687500 \\ -\frac{3}{16}u^3 + \frac{13}{8}u^2 - \frac{5}{16}u + \frac{1}{16} \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^3 \\ u^3 - u^2 - 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -\frac{1}{16}u^3 - \frac{1}{8}u^2 + \frac{9}{16}u - \frac{5}{16} \\ -\frac{3}{16}u^3 + \frac{5}{8}u^2 - \frac{5}{16}u + \frac{1}{16} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.136719u^3 + 0.976563u^2 + 0.292969u + 0.628906 \\ -0.160156u^3 + 1.42969u^2 - 0.371094u + 0.136719 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.269531u^3 + 0.210938u^2 - 0.136719u + 0.839844 \\ -0.0585938u^3 + 0.132813u^2 - 0.160156u + 0.269531 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{2223}{256}u^3 + \frac{625}{128}u^2 + \frac{2679}{256}u + \frac{805}{256}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_{11}	$u^4 - u^3 + 3u^2 - 2u + 1$
c_2	$u^4 - u^3 + u^2 + 1$
c_3	$16(16u^4 + 5u^3 + 8u^2 + u + 1)$
c_4	$u^4 + u^3 + 3u^2 + 2u + 1$
c_6	$u^4 + u^3 + u^2 + 1$
c_7	$u^4 - 5u^3 + 7u^2 - 2u + 1$
c_8	$(u - 1)^4$
c_9	u^4
c_{10}	$(u + 1)^4$
c_{12}	$16(16u^4 + 35u^3 + 28u^2 + 9u + 1)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_{11}	$y^4 + 5y^3 + 7y^2 + 2y + 1$
c_2, c_6	$y^4 + y^3 + 3y^2 + 2y + 1$
c_3	$256(256y^4 + 231y^3 + 86y^2 + 15y + 1)$
c_7	$y^4 - 11y^3 + 31y^2 + 10y + 1$
c_8, c_{10}	$(y-1)^4$
c_9	y^4
c_{12}	$256(256y^4 - 329y^3 + 186y^2 - 25y + 1)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.351808 + 0.720342I$ $a = -0.492508 + 0.475192I$ $b = -0.169032 - 0.521951I$	$-1.85594 - 1.41510I$	$-6.84387 + 5.98661I$
$u = -0.351808 - 0.720342I$ $a = -0.492508 - 0.475192I$ $b = -0.169032 + 0.521951I$	$-1.85594 + 1.41510I$	$-6.84387 - 5.98661I$
$u = 0.851808 + 0.911292I$ $a = 0.273758 + 0.241862I$ $b = 0.012782 + 0.455494I$	$5.14581 + 3.16396I$	$24.6075 + 6.4636I$
$u = 0.851808 - 0.911292I$ $a = 0.273758 - 0.241862I$ $b = 0.012782 - 0.455494I$	$5.14581 - 3.16396I$	$24.6075 - 6.4636I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_5	$(u^4 - u^3 + 3u^2 - 2u + 1)(u^{107} + 36u^{106} + \cdots - 10u - 1)$
c_2	$(u^4 - u^3 + u^2 + 1)(u^{107} - 2u^{106} + \cdots - 5u^2 - 1)$
c_3	$256(16u^4 + 5u^3 + 8u^2 + u + 1)$ $\cdot (16u^{107} - 75u^{106} + \cdots - 285938817u - 55773989)$
c_4	$(u^4 + u^3 + 3u^2 + 2u + 1)(u^{107} + 2u^{106} + \cdots + 4u + 1)$
c_6	$(u^4 + u^3 + u^2 + 1)(u^{107} - 2u^{106} + \cdots - 5u^2 - 1)$
c_7	$(u^4 - 5u^3 + 7u^2 - 2u + 1)(u^{107} + 10u^{106} + \cdots - 55360u - 60751)$
c_8	$((u-1)^4)(u^{107} - 5u^{106} + \cdots + 3671u + 256)$
c_9	$u^4(u^{107} - 3u^{106} + \cdots - 14208u - 4096)$
c_{10}	$((u+1)^4)(u^{107} - 5u^{106} + \cdots + 3671u + 256)$
c_{11}	$(u^4 - u^3 + 3u^2 - 2u + 1)(u^{107} + 2u^{106} + \cdots + 4u + 1)$
c_{12}	$256(16u^4 + 35u^3 + 28u^2 + 9u + 1)$ $\cdot (16u^{107} + 83u^{106} + \cdots + 125402807u - 9972353)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$(y^4+5y^3+7y^2+2y+1)(y^{107}+72y^{106}+\cdots-22y-1)$
c_2, c_6	$(y^4+y^3+3y^2+2y+1)(y^{107}+36y^{106}+\cdots-10y-1)$
c_3	$65536(256y^4+231y^3+86y^2+15y+1)$ $\cdot(256y^{107}+2.53\times10^4y^{106}+\cdots-7.95\times10^{16}y-3.11\times10^{15})$
c_4, c_{11}	$(y^4+5y^3+7y^2+2y+1)(y^{107}-72y^{106}+\cdots-10y-1)$
c_7	$(y^4-11y^3+31y^2+10y+1)$ $\cdot(y^{107}+36y^{106}+\cdots-86065371038y-3690684001)$
c_8, c_{10}	$((y-1)^4)(y^{107}-85y^{106}+\cdots+5667729y-65536)$
c_9	$y^4(y^{107}+27y^{106}+\cdots-1.04286\times10^9y-1.67772\times10^7)$
c_{12}	$65536(256y^4-329y^3+186y^2-25y+1)$ $\cdot(256y^{107}-3401y^{106}+\cdots+3072980132794765y-99447824356609)$