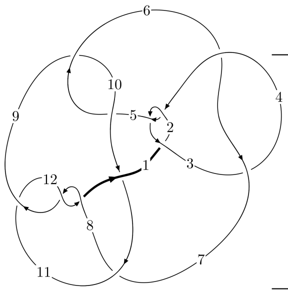
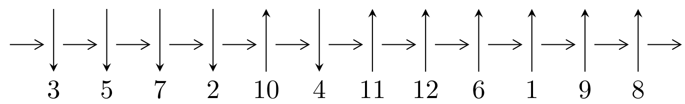
$12a_{0051}$ ($K12a_{0051}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 5.08396 \times 10^{34} u^{109} + 2.87987 \times 10^{35} u^{108} + \cdots + 2.07043 \times 10^{34} b + 1.00700 \times 10^{35},$$
$$- 2.40150 \times 10^{34} u^{109} - 7.91502 \times 10^{34} u^{108} + \cdots + 2.07043 \times 10^{34} a - 1.21324 \times 10^{35},$$
$$u^{110} + 5u^{109} + \cdots - 7u + 1\rangle$$
$$I_2^u = \langle au - u^2 + b + a,\ -u^2 a + a^2 + 1,\ u^3 - u^2 + 2u - 1\rangle$$
$$I_3^u = \langle -u^2 + b - u - 2,\ 2u^2 + a + u + 4,\ u^3 + 2u - 1\rangle$$
$$I_4^u = \langle -u^2 + b,\ -u^3 + a - u,\ u^4 + u^3 + 2u^2 + 2u + 1\rangle$$
$$I_5^u = \langle u^2 + b + u,\ -u^2 + a - 2,\ u^3 - u^2 + 2u - 1\rangle$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 126 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. $I_1^u = \langle 5.08 \times 10^{34}u^{109} + 2.88 \times 10^{35}u^{108} + \cdots + 2.07 \times 10^{34}b + 1.01 \times 10^{35},\ -2.40 \times 10^{34}u^{109} - 7.92 \times 10^{34}u^{108} + \cdots + 2.07 \times 10^{34}a - 1.21 \times 10^{35},\ u^{110} + 5u^{109} + \cdots - 7u + 1\rangle$

(i) Arc colorings

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1.15991u^{109} + 3.82290u^{108} + \cdots + 17.5984u + 5.85986 \\ -2.45551u^{109} - 13.9096u^{108} + \cdots + 31.6055u - 4.86375 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^3 - 2u \\ u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1.25426u^{109} + 2.47074u^{108} + \cdots + 28.5308u + 4.84333 \\ -4.21354u^{109} - 19.7876u^{108} + \cdots + 21.4988u - 3.81138 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -1.32122u^{109} - 5.24754u^{108} + \cdots - 10.3151u - 3.64345 \\ 0.442881u^{109} + 4.21484u^{108} + \cdots - 18.3658u + 2.99673 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -3.93346u^{109} - 15.5438u^{108} + \cdots + 29.5005u - 0.0441834 \\ 4.97771u^{109} + 20.9442u^{108} + \cdots - 6.60421u + 0.827017 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^6 - 3u^4 - 2u^2 + 1 \\ u^8 + 4u^6 + 4u^4 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -1.46652u^{109} - 8.11160u^{108} + \cdots + 30.3922u + 0.400062 \\ 0.0103310u^{109} + 0.286370u^{108} + \cdots - 2.69149u + 0.0323288 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 1.61410u^{109} + 7.48255u^{108} + \cdots - 53.0640u - 4.23776$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{110} + 53u^{109} + \cdots + 874u + 1$
c_2, c_4	$u^{110} - 11u^{109} + \cdots + 20u + 1$
c_3, c_6	$u^{110} - 4u^{109} + \cdots + 1344u - 128$
c_5, c_9	$u^{110} - 2u^{109} + \cdots - 1024u - 512$
c_7	$u^{110} - 5u^{109} + \cdots - 3176u + 292$
c_8, c_{11}, c_{12}	$u^{110} + 5u^{109} + \cdots - 7u + 1$
c_{10}	$u^{110} + 23u^{109} + \cdots - 3335609u + 61891$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{110} + 19y^{109} + \cdots - 806974y + 1$
c_2, c_4	$y^{110} - 53y^{109} + \cdots - 874y + 1$
c_3, c_6	$y^{110} + 54y^{109} + \cdots - 192512y + 16384$
c_5, c_9	$y^{110} + 56y^{109} + \cdots + 2228224y + 262144$
c_7	$y^{110} + 9y^{109} + \cdots - 11413240y + 85264$
c_8, c_{11}, c_{12}	$y^{110} + 101y^{109} + \cdots - 147y + 1$
c_{10}	$y^{110} + 41y^{109} + \cdots - 17639818908843y + 3830495881$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.087769 + 1.071150I$ $a = -1.248980 - 0.465454I$ $b = -1.37873 - 0.37865I$	$2.25688 + 0.90789I$	0
$u = -0.087769 - 1.071150I$ $a = -1.248980 + 0.465454I$ $b = -1.37873 + 0.37865I$	$2.25688 - 0.90789I$	0
$u = 0.267272 + 1.065890I$ $a = -1.50466 - 0.67505I$ $b = -0.984660 + 0.847043I$	$1.22660 + 4.08841I$	0
$u = 0.267272 - 1.065890I$ $a = -1.50466 + 0.67505I$ $b = -0.984660 - 0.847043I$	$1.22660 - 4.08841I$	0
$u = -0.467803 + 0.703618I$ $a = 2.29074 - 0.39775I$ $b = -0.223957 + 0.915152I$	$-2.03455 + 9.47276I$	0
$u = -0.467803 - 0.703618I$ $a = 2.29074 + 0.39775I$ $b = -0.223957 - 0.915152I$	$-2.03455 - 9.47276I$	0
$u = 0.326859 + 1.111260I$ $a = 1.47565 + 0.59737I$ $b = 0.842871 - 0.962044I$	$-0.76167 + 9.32773I$	0
$u = 0.326859 - 1.111260I$ $a = 1.47565 - 0.59737I$ $b = 0.842871 + 0.962044I$	$-0.76167 - 9.32773I$	0
$u = 0.044918 + 1.159940I$ $a = 0.485785 + 0.353856I$ $b = 0.012116 - 1.098570I$	$-2.74728 + 0.22494I$	0
$u = 0.044918 - 1.159940I$ $a = 0.485785 - 0.353856I$ $b = 0.012116 + 1.098570I$	$-2.74728 - 0.22494I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.213857 + 1.147760I$ $a = -0.609333 - 0.547444I$ $b = -0.276527 + 1.333880I$	$-3.24169 + 3.96546I$	0
$u = \quad 0.213857 - 1.147760I$ $a = -0.609333 + 0.547444I$ $b = -0.276527 - 1.333880I$	$-3.24169 - 3.96546I$	0
$u = -0.122184 + 1.171470I$ $a = \quad 0.937221 + 0.413575I$ $b = \quad 1.70265 + 0.66436I$	$1.13228 - 4.77677I$	0
$u = -0.122184 - 1.171470I$ $a = \quad 0.937221 - 0.413575I$ $b = \quad 1.70265 - 0.66436I$	$1.13228 + 4.77677I$	0
$u = -0.751985 + 0.316865I$ $a = -0.19275 - 2.67863I$ $b = \quad 0.28939 + 2.30634I$	$-0.69158 - 13.75370I$	$0. + 9.91597I$
$u = -0.751985 - 0.316865I$ $a = -0.19275 + 2.67863I$ $b = \quad 0.28939 - 2.30634I$	$-0.69158 + 13.75370I$	$0. - 9.91597I$
$u = -0.682778 + 0.437855I$ $a = \quad 0.140125 + 0.021845I$ $b = \quad 0.306524 - 0.099329I$	$-4.92429 - 1.07894I$	0
$u = -0.682778 - 0.437855I$ $a = \quad 0.140125 - 0.021845I$ $b = \quad 0.306524 + 0.099329I$	$-4.92429 + 1.07894I$	0
$u = -0.608747 + 0.529637I$ $a = -0.156738 + 0.093345I$ $b = -0.147370 + 0.361143I$	$-5.26321 - 3.26086I$	$0. + 8.42000I$
$u = -0.608747 - 0.529637I$ $a = -0.156738 - 0.093345I$ $b = -0.147370 - 0.361143I$	$-5.26321 + 3.26086I$	$0. - 8.42000I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.133764 + 1.201670I$ $a = 1.70456 + 1.05818I$ $b = 2.18770 - 1.16206I$	$-4.25280 + 2.01271I$	0
$u = 0.133764 - 1.201670I$ $a = 1.70456 - 1.05818I$ $b = 2.18770 + 1.16206I$	$-4.25280 - 2.01271I$	0
$u = -0.393997 + 0.682907I$ $a = -2.30080 + 0.11323I$ $b = 0.155381 - 0.647926I$	$0.47353 + 4.02638I$	$2.00000 - 1.65162I$
$u = -0.393997 - 0.682907I$ $a = -2.30080 - 0.11323I$ $b = 0.155381 + 0.647926I$	$0.47353 - 4.02638I$	$2.00000 + 1.65162I$
$u = -0.728838 + 0.296790I$ $a = 0.43006 + 2.61474I$ $b = -0.35716 - 2.24164I$	$1.88370 - 8.04851I$	$4.66389 + 6.64940I$
$u = -0.728838 - 0.296790I$ $a = 0.43006 - 2.61474I$ $b = -0.35716 + 2.24164I$	$1.88370 + 8.04851I$	$4.66389 - 6.64940I$
$u = 0.777005 + 0.085415I$ $a = -0.01227 + 2.08995I$ $b = -0.29493 - 1.78626I$	$2.37677 - 5.29652I$	$3.30695 + 5.27195I$
$u = 0.777005 - 0.085415I$ $a = -0.01227 - 2.08995I$ $b = -0.29493 + 1.78626I$	$2.37677 + 5.29652I$	$3.30695 - 5.27195I$
$u = -0.702649 + 0.316627I$ $a = 0.203452 + 0.089662I$ $b = 0.504761 + 0.070122I$	$-2.93391 - 7.17237I$	$0. + 7.42213I$
$u = -0.702649 - 0.316627I$ $a = 0.203452 - 0.089662I$ $b = 0.504761 - 0.070122I$	$-2.93391 + 7.17237I$	$0. - 7.42213I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.676292 + 0.325580I$ $a = -0.92125 - 3.03516I$ $b = 0.62862 + 2.30011I$	$-3.81916 - 4.42307I$	$0.33207 + 6.45804I$
$u = -0.676292 - 0.325580I$ $a = -0.92125 + 3.03516I$ $b = 0.62862 - 2.30011I$	$-3.81916 + 4.42307I$	$0.33207 - 6.45804I$
$u = 0.737560 + 0.128821I$ $a = -0.23433 - 2.21989I$ $b = 0.34707 + 1.87285I$	$4.05943 - 0.32957I$	$7.05242 + 0.19707I$
$u = 0.737560 - 0.128821I$ $a = -0.23433 + 2.21989I$ $b = 0.34707 - 1.87285I$	$4.05943 + 0.32957I$	$7.05242 - 0.19707I$
$u = 0.666718 + 0.321526I$ $a = 1.00379 + 1.71314I$ $b = -0.57519 - 1.79009I$	$1.83773 + 7.20528I$	$3.32675 - 7.67477I$
$u = 0.666718 - 0.321526I$ $a = 1.00379 - 1.71314I$ $b = -0.57519 + 1.79009I$	$1.83773 - 7.20528I$	$3.32675 + 7.67477I$
$u = -0.422080 + 0.598409I$ $a = -0.305176 + 0.223190I$ $b = -0.003864 + 0.654541I$	$-4.06310 + 3.25446I$	$-2.82924 - 1.68811I$
$u = -0.422080 - 0.598409I$ $a = -0.305176 - 0.223190I$ $b = -0.003864 - 0.654541I$	$-4.06310 - 3.25446I$	$-2.82924 + 1.68811I$
$u = 0.673412 + 0.257531I$ $a = -0.90832 - 1.97279I$ $b = 0.55569 + 1.85787I$	$3.75181 + 2.12756I$	$7.14555 - 2.70279I$
$u = 0.673412 - 0.257531I$ $a = -0.90832 + 1.97279I$ $b = 0.55569 - 1.85787I$	$3.75181 - 2.12756I$	$7.14555 + 2.70279I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.633760+0.307440I$ $a=-0.191099-0.147798I$ $b=-0.453297-0.191626I$	$-1.35364-2.39156I$	$1.35494+3.44541I$
$u=-0.633760-0.307440I$ $a=-0.191099+0.147798I$ $b=-0.453297+0.191626I$	$-1.35364+2.39156I$	$1.35494-3.44541I$
$u=-0.442645+0.534598I$ $a=2.95117+0.09459I$ $b=-0.765044+0.351218I$	$-4.73490+0.63177I$	$-2.64133-0.41353I$
$u=-0.442645-0.534598I$ $a=2.95117-0.09459I$ $b=-0.765044-0.351218I$	$-4.73490-0.63177I$	$-2.64133+0.41353I$
$u=0.238477+1.301950I$ $a=1.94233-0.22816I$ $b=-0.30674-2.02821I$	$-4.24078+2.59768I$	0
$u=0.238477-1.301950I$ $a=1.94233+0.22816I$ $b=-0.30674+2.02821I$	$-4.24078-2.59768I$	0
$u=0.668764+0.067218I$ $a=-1.01044-2.15829I$ $b=0.17342+1.51996I$	$-0.004153-0.660121I$	$-0.81116+3.72545I$
$u=0.668764-0.067218I$ $a=-1.01044+2.15829I$ $b=0.17342-1.51996I$	$-0.004153+0.660121I$	$-0.81116-3.72545I$
$u=0.327530+1.290810I$ $a=-0.880564-0.599152I$ $b=-0.39051+2.00378I$	$-1.90814-1.31421I$	0
$u=0.327530-1.290810I$ $a=-0.880564+0.599152I$ $b=-0.39051-2.00378I$	$-1.90814+1.31421I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.431721 + 0.498945I$ $a = 1.38512 + 1.26258I$ $b = 0.329753 - 0.717428I$	$0.96271 - 3.52397I$	$1.82648 + 1.71517I$
$u = 0.431721 - 0.498945I$ $a = 1.38512 - 1.26258I$ $b = 0.329753 + 0.717428I$	$0.96271 + 3.52397I$	$1.82648 - 1.71517I$
$u = -0.625020 + 0.195335I$ $a = 1.02317 + 1.71908I$ $b = -0.30780 - 1.78368I$	$4.65417 - 3.79918I$	$5.60561 + 9.12001I$
$u = -0.625020 - 0.195335I$ $a = 1.02317 - 1.71908I$ $b = -0.30780 + 1.78368I$	$4.65417 + 3.79918I$	$5.60561 - 9.12001I$
$u = 0.158715 + 1.337860I$ $a = 0.527912 - 0.390102I$ $b = -0.670480 - 0.244495I$	$-3.43387 + 2.25266I$	0
$u = 0.158715 - 1.337860I$ $a = 0.527912 + 0.390102I$ $b = -0.670480 + 0.244495I$	$-3.43387 - 2.25266I$	0
$u = 0.300858 + 1.330050I$ $a = 1.015650 + 0.572458I$ $b = 0.43639 - 2.22756I$	$-0.51775 + 3.42145I$	0
$u = 0.300858 - 1.330050I$ $a = 1.015650 - 0.572458I$ $b = 0.43639 + 2.22756I$	$-0.51775 - 3.42145I$	0
$u = 0.590275 + 0.237552I$ $a = 1.14216 + 1.56879I$ $b = 0.028965 - 0.993228I$	$-0.45742 + 2.08316I$	$1.71834 - 4.71563I$
$u = 0.590275 - 0.237552I$ $a = 1.14216 - 1.56879I$ $b = 0.028965 + 0.993228I$	$-0.45742 - 2.08316I$	$1.71834 + 4.71563I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.448708 + 0.424163I$ $a = 0.087098 - 0.355565I$ $b = -0.189088 - 0.505206I$	$-2.04918 - 1.01718I$	$-0.77645 + 4.39237I$
$u = -0.448708 - 0.424163I$ $a = 0.087098 + 0.355565I$ $b = -0.189088 + 0.505206I$	$-2.04918 + 1.01718I$	$-0.77645 - 4.39237I$
$u = -0.213217 + 1.374140I$ $a = -0.077328 + 0.925196I$ $b = -1.84754 - 2.39610I$	$-0.811385 - 0.560255I$	0
$u = -0.213217 - 1.374140I$ $a = -0.077328 - 0.925196I$ $b = -1.84754 + 2.39610I$	$-0.811385 + 0.560255I$	0
$u = 0.232900 + 0.562056I$ $a = -1.68860 - 1.12075I$ $b = -0.368435 + 0.504187I$	$2.28204 + 1.25980I$	$3.87420 - 3.95142I$
$u = 0.232900 - 0.562056I$ $a = -1.68860 + 1.12075I$ $b = -0.368435 - 0.504187I$	$2.28204 - 1.25980I$	$3.87420 + 3.95142I$
$u = 0.096418 + 1.393080I$ $a = 0.667863 + 0.044755I$ $b = -0.504387 - 0.413403I$	$-3.56329 + 2.49031I$	0
$u = 0.096418 - 1.393080I$ $a = 0.667863 - 0.044755I$ $b = -0.504387 + 0.413403I$	$-3.56329 - 2.49031I$	0
$u = 0.205762 + 1.386790I$ $a = -1.46276 - 0.03865I$ $b = 0.01850 + 3.00217I$	$-6.10565 + 2.87492I$	0
$u = 0.205762 - 1.386790I$ $a = -1.46276 + 0.03865I$ $b = 0.01850 - 3.00217I$	$-6.10565 - 2.87492I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.239877 + 1.381360I$ $a = 0.363803 - 1.007460I$ $b = 1.83084 + 2.64228I$	$-0.37974 - 6.94098I$	0
$u = -0.239877 - 1.381360I$ $a = 0.363803 + 1.007460I$ $b = 1.83084 - 2.64228I$	$-0.37974 + 6.94098I$	0
$u = 0.23220 + 1.39528I$ $a = -1.080520 + 0.161583I$ $b = 0.376710 + 0.711456I$	$-5.68295 + 5.10949I$	0
$u = 0.23220 - 1.39528I$ $a = -1.080520 - 0.161583I$ $b = 0.376710 - 0.711456I$	$-5.68295 - 5.10949I$	0
$u = -0.557111 + 0.152288I$ $a = -1.16889 - 1.17714I$ $b = 0.13263 + 1.54331I$	$4.09579 + 2.24249I$	$2.09249 + 6.49191I$
$u = -0.557111 - 0.152288I$ $a = -1.16889 + 1.17714I$ $b = 0.13263 - 1.54331I$	$4.09579 - 2.24249I$	$2.09249 - 6.49191I$
$u = 0.26322 + 1.40067I$ $a = 1.150470 + 0.262478I$ $b = 0.12209 - 2.54689I$	$-1.53483 + 5.53884I$	0
$u = 0.26322 - 1.40067I$ $a = 1.150470 - 0.262478I$ $b = 0.12209 + 2.54689I$	$-1.53483 - 5.53884I$	0
$u = -0.24822 + 1.42034I$ $a = 0.125478 + 0.107540I$ $b = 0.746609 - 0.398952I$	$-6.88313 - 5.63183I$	0
$u = -0.24822 - 1.42034I$ $a = 0.125478 - 0.107540I$ $b = 0.746609 + 0.398952I$	$-6.88313 + 5.63183I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.17484+1.43130I$ $a=\ 0.024046+0.220816I$ $b=\ 0.936174+0.364235I$	$-7.94217-3.35665I$	0
$u=-0.17484-1.43130I$ $a=\ 0.024046-0.220816I$ $b=\ 0.936174-0.364235I$	$-7.94217+3.35665I$	0
$u=-0.10527+1.44541I$ $a=\ 0.853980+0.625681I$ $b=-1.59490-0.51909I$	$-6.16042+2.51482I$	0
$u=-0.10527-1.44541I$ $a=\ 0.853980-0.625681I$ $b=-1.59490+0.51909I$	$-6.16042-2.51482I$	0
$u=\ 0.16355+1.44140I$ $a=-0.879236+0.029819I$ $b=\ 0.413235+0.411153I$	$-5.14995-1.32551I$	0
$u=\ 0.16355-1.44140I$ $a=-0.879236-0.029819I$ $b=\ 0.413235-0.411153I$	$-5.14995+1.32551I$	0
$u=\ 0.25844+1.42833I$ $a=-1.084660-0.164757I$ $b=\ 0.01462+2.51096I$	$-3.76654+10.58860I$	0
$u=\ 0.25844-1.42833I$ $a=-1.084660+0.164757I$ $b=\ 0.01462-2.51096I$	$-3.76654-10.58860I$	0
$u=-0.28605+1.42369I$ $a=\ 1.02941-1.09734I$ $b=\ 1.18408+3.15876I$	$-3.61534-11.73800I$	0
$u=-0.28605-1.42369I$ $a=\ 1.02941+1.09734I$ $b=\ 1.18408-3.15876I$	$-3.61534+11.73800I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.26157+1.42986I$ $a=-0.95968+1.43576I$ $b=-1.58657-3.53860I$	$-9.44015-7.84845I$	0
$u=-0.26157-1.42986I$ $a=-0.95968-1.43576I$ $b=-1.58657+3.53860I$	$-9.44015+7.84845I$	0
$u=-0.15325+1.44673I$ $a=-0.921050-0.964047I$ $b=\ \ 2.34445+0.68813I$	$-10.99480-1.49755I$	0
$u=-0.15325-1.44673I$ $a=-0.921050+0.964047I$ $b=\ \ 2.34445-0.68813I$	$-10.99480+1.49755I$	0
$u=-0.27283+1.42929I$ $a=-0.147225-0.080722I$ $b=-0.629275+0.574116I$	$-8.52249-10.72670I$	0
$u=-0.27283-1.42929I$ $a=-0.147225+0.080722I$ $b=-0.629275-0.574116I$	$-8.52249+10.72670I$	0
$u=-0.13438+1.44948I$ $a=\ \ 0.060062-0.292373I$ $b=-0.956495-0.748806I$	$-10.49970+1.35653I$	0
$u=-0.13438-1.44948I$ $a=\ \ 0.060062+0.292373I$ $b=-0.956495+0.748806I$	$-10.49970-1.35653I$	0
$u=-0.29452+1.43525I$ $a=-1.15670+1.04114I$ $b=-0.94490-3.18553I$	$-6.2981-17.5562I$	0
$u=-0.29452-1.43525I$ $a=-1.15670-1.04114I$ $b=-0.94490+3.18553I$	$-6.2981+17.5562I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.10198+1.47999I$ $a=-1.002820-0.545658I$ $b=1.56485+0.12099I$	$-9.06430+7.73555I$	0
$u=-0.10198-1.47999I$ $a=-1.002820+0.545658I$ $b=1.56485-0.12099I$	$-9.06430-7.73555I$	0
$u=0.485114+0.170668I$ $a=2.51389+2.67178I$ $b=-1.16833-2.03899I$	$-1.032640+0.255032I$	$3.20255-10.10229I$
$u=0.485114-0.170668I$ $a=2.51389-2.67178I$ $b=-1.16833+2.03899I$	$-1.032640-0.255032I$	$3.20255+10.10229I$
$u=-0.24423+1.47467I$ $a=-0.0983331-0.0071465I$ $b=-0.188904+0.429077I$	$-11.10450-4.45040I$	0
$u=-0.24423-1.47467I$ $a=-0.0983331+0.0071465I$ $b=-0.188904-0.429077I$	$-11.10450+4.45040I$	0
$u=-0.19551+1.48517I$ $a=0.081909-0.126058I$ $b=-0.394609-0.545514I$	$-11.79450-6.13180I$	0
$u=-0.19551-1.48517I$ $a=0.081909+0.126058I$ $b=-0.394609+0.545514I$	$-11.79450+6.13180I$	0
$u=0.480020$ $a=-1.07071$ $b=0.420132$	0.824866	12.3370
$u=0.0855909$ $a=7.24591$ $b=-0.772916$	-1.21018	-9.52400

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

(i) Arc colorings

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ u^2 - u + 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2 + 1 \\ -u^2 + u - 1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} a \\ -au + u^2 - a \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^2 - 1 \\ u^2 - u + 1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^2a + au - a + u \\ -au \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^2a + au - a + u \\ -2u^2 + 2u - 2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ au - u^2 - a + 2u - 2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ au - u^2 - a + 2u - 2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2u^2a + 6au + 6u^2 - 9a - 5u + 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.215080 + 1.307140I$ $a = -0.500000 - 0.424452I$ $b = -1.60964 + 1.73159I$	$5.65624I$	$-0.00556 - 4.66003I$
$u = 0.215080 + 1.307140I$ $a = -1.16236 + 0.98673I$ $b = 1.039800 + 0.882689I$	$-4.13758 + 2.82812I$	$-6.5820 - 15.2977I$
$u = 0.215080 - 1.307140I$ $a = -0.500000 + 0.424452I$ $b = -1.60964 - 1.73159I$	$-5.65624I$	$-0.00556 + 4.66003I$
$u = 0.215080 - 1.307140I$ $a = -1.16236 - 0.98673I$ $b = 1.039800 - 0.882689I$	$-4.13758 - 2.82812I$	$-6.5820 + 15.2977I$
$u = 0.569840$ $a = 0.162359 + 0.986732I$ $b = 0.06984 - 1.54901I$	$4.13758 + 2.82812I$	$4.08755 - 6.14773I$
$u = 0.569840$ $a = 0.162359 - 0.986732I$ $b = 0.06984 + 1.54901I$	$4.13758 - 2.82812I$	$4.08755 + 6.14773I$

III. $\boldsymbol{I_3^u = \langle -u^2 + b - u - 2,\ 2u^2 + a + u + 4,\ u^3 + 2u - 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 11u^2 + 9u + 22$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.22670 + 1.46771I$ $a = 0.432268 - 0.136798I$ $b = -0.329484 + 0.802255I$	$-11.08570 - 5.13794I$	$-3.17092 + 5.88938I$
$u = -0.22670 - 1.46771I$ $a = 0.432268 + 0.136798I$ $b = -0.329484 - 0.802255I$	$-11.08570 + 5.13794I$	$-3.17092 - 5.88938I$
$u = 0.453398$ $a = -4.86454$ $b = 2.65897$	-0.857735	28.3420

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

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_1 = \begin{pmatrix} u^2 + 1 \\ u^3 + 2u + 1 \end{pmatrix}$$

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

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

$$a_3 = \begin{pmatrix} u^3 + u \\ u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^3 + u^2 + u + 1 \\ u^3 + u^2 + 2u + 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^3 - 2u \\ u^3 + u \end{pmatrix}$$

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 7u^3 + 3u^2 + 7u + 2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.621744 + 0.440597I$ $a = -0.500000 + 0.866025I$ $b = 0.192440 - 0.547877I$	$-4.93480 - 2.02988I$	$-0.92268 + 4.41855I$
$u = -0.621744 - 0.440597I$ $a = -0.500000 - 0.866025I$ $b = 0.192440 + 0.547877I$	$-4.93480 + 2.02988I$	$-0.92268 - 4.41855I$
$u = 0.121744 + 1.306620I$ $a = -0.500000 - 0.866025I$ $b = -1.69244 + 0.31815I$	$-4.93480 + 2.02988I$	$-6.57732 - 5.10773I$
$u = 0.121744 - 1.306620I$ $a = -0.500000 + 0.866025I$ $b = -1.69244 - 0.31815I$	$-4.93480 - 2.02988I$	$-6.57732 + 5.10773I$

V. $I_5^u = \langle u^2 + b + u,\ -u^2 + a - 2,\ u^3 - u^2 + 2u - 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_5	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.215080 + 1.307140I$ $a = 0.337641 + 0.562280I$ $b = 1.44728 - 1.86942I$	0	$3.29468 + 1.67231I$
$u = 0.215080 - 1.307140I$ $a = 0.337641 - 0.562280I$ $b = 1.44728 + 1.86942I$	0	$3.29468 - 1.67231I$
$u = 0.569840$ $a = 2.32472$ $b = -0.894558$	0	-3.58940

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^7)(u^3-u^2+2u-1)^3(u^{110}+53u^{109}+\cdots+874u+1)$
c_2	$((u-1)^7)(u^3+u^2-1)^3(u^{110}-11u^{109}+\cdots+20u+1)$
c_3	$u^7(u^3-u^2+2u-1)^3(u^{110}-4u^{109}+\cdots+1344u-128)$
c_4	$((u+1)^7)(u^3-u^2+1)^3(u^{110}-11u^{109}+\cdots+20u+1)$
c_5	$u^9(u^3+2u+1)(u^4-u^3+\cdots-2u+1)(u^{110}-2u^{109}+\cdots-1024u-512)$
c_6	$u^7(u^3+u^2+2u+1)^3(u^{110}-4u^{109}+\cdots+1344u-128)$
c_7	$(u^2-u+1)^2(u^3-u^2+1)^3(u^3+3u^2+5u+2)$ $\cdot(u^{110}-5u^{109}+\cdots-3176u+292)$
c_8	$(u^3+2u+1)(u^3+u^2+2u+1)^3(u^4-u^3+2u^2-2u+1)$ $\cdot(u^{110}+5u^{109}+\cdots-7u+1)$
c_9	$u^9(u^3+2u-1)(u^4+u^3+\cdots+2u+1)(u^{110}-2u^{109}+\cdots-1024u-512)$
c_{10}	$(u^3+2u+1)(u^3-u^2+1)^3(u^4-u^3+2u^2-2u+1)$ $\cdot(u^{110}+23u^{109}+\cdots-3335609u+61891)$
c_{11}, c_{12}	$(u^3+2u-1)(u^3-u^2+2u-1)^3(u^4+u^3+2u^2+2u+1)$ $\cdot(u^{110}+5u^{109}+\cdots-7u+1)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^7)(y^3+3y^2+2y-1)^3(y^{110}+19y^{109}+\cdots-806974y+1)$
c_2, c_4	$((y-1)^7)(y^3-y^2+2y-1)^3(y^{110}-53y^{109}+\cdots-874y+1)$
c_3, c_6	$y^7(y^3+3y^2+2y-1)^3(y^{110}+54y^{109}+\cdots-192512y+16384)$
c_5, c_9	$y^9(y^3+4y^2+4y-1)(y^4+3y^3+2y^2+1)$ $\cdot(y^{110}+56y^{109}+\cdots+2228224y+262144)$
c_7	$(y^2+y+1)^2(y^3-y^2+2y-1)^3(y^3+y^2+13y-4)$ $\cdot(y^{110}+9y^{109}+\cdots-11413240y+85264)$
c_8, c_{11}, c_{12}	$(y^3+3y^2+2y-1)^3(y^3+4y^2+4y-1)(y^4+3y^3+2y^2+1)$ $\cdot(y^{110}+101y^{109}+\cdots-147y+1)$
c_{10}	$(y^3-y^2+2y-1)^3(y^3+4y^2+4y-1)(y^4+3y^3+2y^2+1)$ $\cdot(y^{110}+41y^{109}+\cdots-17639818908843y+3830495881)$