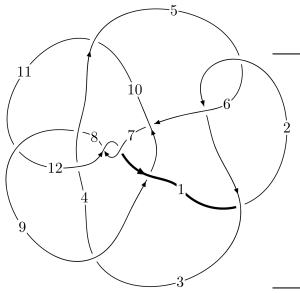
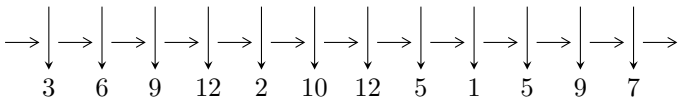
$12n_{0453}$ $(K12n_{0453})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle b-u,\ -5.24830\times 10^{36}u^{34} + 3.76703\times 10^{36}u^{33} + \cdots + 1.56072\times 10^{36}a - 5.62245\times 10^{36},$$
$$u^{35} - u^{34} + \cdots + 3u - 1\rangle$$
$$I_2^u = \langle 2.26126\times 10^{120}u^{43} - 6.93064\times 10^{119}u^{42} + \cdots + 1.57860\times 10^{123}b - 2.38102\times 10^{124},$$
$$-6.59277\times 10^{123}u^{43} + 5.75046\times 10^{123}u^{42} + \cdots + 1.55634\times 10^{127}a + 1.14048\times 10^{128},$$
$$u^{44} - u^{43} + \cdots - 34132u + 9859\rangle$$
$$I_3^u = \langle b+u,\ -541775388218u^{21} + 737506675481u^{20} + \cdots + 532384024235a - 996909356925,$$
$$u^{22} - u^{21} + \cdots - 13u^3 - 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 101 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. $\boldsymbol{I_1^u = \langle b-u,\ -5.25\times 10^{36}u^{34}+3.77\times 10^{36}u^{33}+\cdots+1.56\times 10^{36}a-5.62\times 10^{36},\ u^{35}-u^{34}+\cdots+3u-1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}0\\u\end{pmatrix}$$

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

$$a_9 = \begin{pmatrix}3.36274u^{34}-2.41365u^{33}+\cdots-1.77064u+3.60247\\u\end{pmatrix}$$

$$a_3 = \begin{pmatrix}-1.50962u^{34}+0.0976335u^{33}+\cdots+5.85679u-2.87425\\-0.390812u^{34}+0.123541u^{33}+\cdots+1.97017u-0.973088\end{pmatrix}$$

$$a_8 = \begin{pmatrix}3.36274u^{34}-2.41365u^{33}+\cdots-0.770637u+3.60247\\u\end{pmatrix}$$

$$a_7 = \begin{pmatrix}3.36274u^{34}-2.41365u^{33}+\cdots-0.770637u+3.60247\\-0.973088u^{34}+0.582276u^{33}+\cdots+0.484542u-0.949096\end{pmatrix}$$

$$a_1 = \begin{pmatrix}-2.45768u^{34}+1.11553u^{33}+\cdots+6.33799u-4.06168\\0.000350385u^{34}-0.0450612u^{33}+\cdots-1.08421u+0.393051\end{pmatrix}$$

$$a_2 = \begin{pmatrix}0.302246u^{34}+0.208870u^{33}+\cdots-6.15873u+2.00069\\-1.63367u^{34}+0.497640u^{33}+\cdots+4.44370u-2.88225\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}0.511505u^{34}+0.0490164u^{33}+\cdots-7.36890u+2.16349\\0.973088u^{34}-0.582276u^{33}+\cdots+1.51546u+0.949096\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}1.48459u^{34}-0.533259u^{33}+\cdots-5.85345u+3.11258\\0.973088u^{34}-0.582276u^{33}+\cdots+1.51546u+0.949096\end{pmatrix}$$

$$a_6 = \begin{pmatrix}0.778426u^{34}+0.0389110u^{33}+\cdots-3.48404u+2.16125\\-2.31610u^{34}+0.760393u^{33}+\cdots+7.17608u-4.33272\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.563437u^{34}+0.739161u^{33}+\cdots-7.54274u-12.9075$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{35} + 18u^{34} + \cdots + 268u + 16$
c_2, c_5	$u^{35} + 8u^{34} + \cdots + 42u + 4$
c_3, c_{10}	$u^{35} - 3u^{33} + \cdots - 2u + 5$
c_4, c_8	$u^{35} + u^{34} + \cdots + 3u + 1$
c_6, c_9	$u^{35} - u^{34} + \cdots - 2u + 1$
c_7, c_{12}	$u^{35} + 24u^{34} + \cdots + 39936u + 2048$
c_{11}	$u^{35} - 23u^{34} + \cdots - 230u + 1300$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{35} + 2y^{34} + \cdots + 40048y - 256$
c_2, c_5	$y^{35} - 18y^{34} + \cdots + 268y - 16$
c_3, c_{10}	$y^{35} - 6y^{34} + \cdots + 434y - 25$
c_4, c_8	$y^{35} - 47y^{34} + \cdots + 13y - 1$
c_6, c_9	$y^{35} + 3y^{34} + \cdots - 2y - 1$
c_7, c_{12}	$y^{35} + 16y^{34} + \cdots + 47185920y - 4194304$
c_{11}	$y^{35} - 23y^{34} + \cdots + 9249100y - 1690000$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.955967 + 0.450664I$ $a = -0.277341 + 1.028180I$ $b = 0.955967 + 0.450664I$	$0.32153 + 2.91618I$	$-4.71539 - 0.02368I$
$u = 0.955967 - 0.450664I$ $a = -0.277341 - 1.028180I$ $b = 0.955967 - 0.450664I$	$0.32153 - 2.91618I$	$-4.71539 + 0.02368I$
$u = -0.603532 + 0.339224I$ $a = -0.087049 - 1.096610I$ $b = -0.603532 + 0.339224I$	$-1.37493 - 3.82893I$	$-14.7554 + 5.1588I$
$u = -0.603532 - 0.339224I$ $a = -0.087049 + 1.096610I$ $b = -0.603532 - 0.339224I$	$-1.37493 + 3.82893I$	$-14.7554 - 5.1588I$
$u = 0.505207 + 0.466803I$ $a = -1.53217 - 2.19035I$ $b = 0.505207 + 0.466803I$	$3.54205 + 7.35026I$	$-11.99203 - 4.50938I$
$u = 0.505207 - 0.466803I$ $a = -1.53217 + 2.19035I$ $b = 0.505207 - 0.466803I$	$3.54205 - 7.35026I$	$-11.99203 + 4.50938I$
$u = -0.639207 + 0.204758I$ $a = -0.14927 + 1.74146I$ $b = -0.639207 + 0.204758I$	$3.60027 + 1.54452I$	$-7.64624 - 4.60913I$
$u = -0.639207 - 0.204758I$ $a = -0.14927 - 1.74146I$ $b = -0.639207 - 0.204758I$	$3.60027 - 1.54452I$	$-7.64624 + 4.60913I$
$u = 0.373896 + 0.520116I$ $a = 1.270260 + 0.311437I$ $b = 0.373896 + 0.520116I$	$0.95580 - 4.75953I$	$-9.19791 + 7.90177I$
$u = 0.373896 - 0.520116I$ $a = 1.270260 - 0.311437I$ $b = 0.373896 - 0.520116I$	$0.95580 + 4.75953I$	$-9.19791 - 7.90177I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.558191+0.285053I$ $a=\ \ 1.18752-2.42194I$ $b=-0.558191+0.285053I$	$4.88354-2.69019I$	$-10.47730+0.12447I$
$u=-0.558191-0.285053I$ $a=\ \ 1.18752+2.42194I$ $b=-0.558191-0.285053I$	$4.88354+2.69019I$	$-10.47730-0.12447I$
$u=\ \ 0.605489+0.009295I$ $a=\ \ 0.206739+0.573796I$ $b=\ \ 0.605489+0.009295I$	$-0.426536+0.312778I$	$-12.16336+0.78895I$
$u=\ \ 0.605489-0.009295I$ $a=\ \ 0.206739-0.573796I$ $b=\ \ 0.605489-0.009295I$	$-0.426536-0.312778I$	$-12.16336-0.78895I$
$u=-0.177738+0.486118I$ $a=-0.17737-1.74965I$ $b=-0.177738+0.486118I$	$-2.39864+1.51734I$	$-15.0669-4.1108I$
$u=-0.177738-0.486118I$ $a=-0.17737+1.74965I$ $b=-0.177738-0.486118I$	$-2.39864-1.51734I$	$-15.0669+4.1108I$
$u=\ \ 0.057585+0.464773I$ $a=-2.70671-1.34166I$ $b=\ \ 0.057585+0.464773I$	$1.72575+1.86389I$	$-7.37932+5.72849I$
$u=\ \ 0.057585-0.464773I$ $a=-2.70671+1.34166I$ $b=\ \ 0.057585-0.464773I$	$1.72575-1.86389I$	$-7.37932-5.72849I$
$u=\ \ 1.54010+0.38619I$ $a=-0.729617+0.149966I$ $b=\ \ 1.54010+0.38619I$	$-1.11453-0.96016I$	0
$u=\ \ 1.54010-0.38619I$ $a=-0.729617-0.149966I$ $b=\ \ 1.54010-0.38619I$	$-1.11453+0.96016I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.58422+0.48939I$ $a=\ \ 0.844245+0.075878I$ $b=-1.58422+0.48939I$	$-0.30923+6.97118I$	0
$u=-1.58422-0.48939I$ $a=\ \ 0.844245-0.075878I$ $b=-1.58422-0.48939I$	$-0.30923-6.97118I$	0
$u=\ \ 0.339571$ $a=\ \ 0.730904$ $b=\ \ 0.339571$	-0.605268	-16.1480
$u=\ \ 1.72430+0.03737I$ $a=-0.913428-0.274991I$ $b=\ \ 1.72430+0.03737I$	$-5.06642-3.71082I$	0
$u=\ \ 1.72430-0.03737I$ $a=-0.913428+0.274991I$ $b=\ \ 1.72430-0.03737I$	$-5.06642+3.71082I$	0
$u=-1.75744+0.08760I$ $a=\ \ 0.995064-0.291635I$ $b=-1.75744+0.08760I$	$-7.51086+9.54692I$	0
$u=-1.75744-0.08760I$ $a=\ \ 0.995064+0.291635I$ $b=-1.75744-0.08760I$	$-7.51086-9.54692I$	0
$u=\ \ 1.70176+0.47815I$ $a=-1.051060+0.162856I$ $b=\ \ 1.70176+0.47815I$	$-7.79536-8.25620I$	0
$u=\ \ 1.70176-0.47815I$ $a=-1.051060-0.162856I$ $b=\ \ 1.70176-0.47815I$	$-7.79536+8.25620I$	0
$u=-1.71391+0.54641I$ $a=\ \ 1.082860+0.037259I$ $b=-1.71391+0.54641I$	$-1.90251+11.15310I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.71391-0.54641I$ $a=\ \ 1.082860-0.037259I$ $b=-1.71391-0.54641I$	$-1.90251-11.15310I$	0
$u=\ \ 1.74961+0.55030I$ $a=-1.143750+0.033525I$ $b=\ \ 1.74961+0.55030I$	$-4.1343-16.7869I$	0
$u=\ \ 1.74961-0.55030I$ $a=-1.143750-0.033525I$ $b=\ \ 1.74961-0.55030I$	$-4.1343+16.7869I$	0
$u=-1.84947+0.03525I$ $a=\ \ 0.815630+0.068482I$ $b=-1.84947+0.03525I$	$-11.47940-0.02354I$	0
$u=-1.84947-0.03525I$ $a=\ \ 0.815630-0.068482I$ $b=-1.84947-0.03525I$	$-11.47940+0.02354I$	0

II. $I_2^u = \langle 2.26 \times 10^{120} u^{43} - 6.93 \times 10^{119} u^{42} + \cdots + 1.58 \times 10^{123} b - 2.38 \times 10^{124},\ -6.59 \times 10^{123} u^{43} + 5.75 \times 10^{123} u^{42} + \cdots + 1.56 \times 10^{127} a + 1.14 \times 10^{128},\ u^{44} - u^{43} + \cdots - 34132u + 9859 \rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} 0.000423608u^{43} - 0.000369486u^{42} + \cdots + 1.13379u - 7.32800 \\ -0.00143245u^{43} + 0.000439038u^{42} + \cdots - 35.5630u + 15.0831 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.000366681u^{43} + 6.86484 \times 10^{-6} u^{42} + \cdots + 0.722864u + 4.29414 \\ -0.000979566u^{43} + 0.000158000u^{42} + \cdots - 38.9308u + 18.6302 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.00100884u^{43} + 0.0000695518u^{42} + \cdots - 34.4292u + 7.75514 \\ -0.00143245u^{43} + 0.000439038u^{42} + \cdots - 35.5630u + 15.0831 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.00100884u^{43} + 0.0000695518u^{42} + \cdots - 34.4292u + 7.75514 \\ -0.000519378u^{43} + 0.000227604u^{42} + \cdots - 13.4493u + 5.82268 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.00111027u^{43} + 0.000170982u^{42} + \cdots - 24.7199u + 11.2172 \\ 0.0000227599u^{43} + 0.0000793547u^{42} + \cdots + 7.51625u + 0.662428 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.00106771u^{43} + 0.000531820u^{42} + \cdots - 15.1776u + 15.0692 \\ -0.00135172u^{43} + 0.000249506u^{42} + \cdots - 22.2369u + 10.6788 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.00104245u^{43} + 0.000171126u^{42} + \cdots - 18.5615u + 10.9112 \\ 0.00126241u^{43} - 0.0000513188u^{42} + \cdots + 29.6839u - 12.2055 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.000219960u^{43} + 0.000119807u^{42} + \cdots + 11.1224u - 1.29427 \\ 0.00126241u^{43} - 0.0000513188u^{42} + \cdots + 29.6839u - 12.2055 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.000928242u^{43} - 0.000395266u^{42} + \cdots + 6.92574u - 13.5888 \\ 0.00136897u^{43} - 0.000507756u^{42} + \cdots + 27.5784u - 15.4736 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.00924417u^{43} - 0.00117823u^{42} + \cdots + 253.150u - 126.267$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{11}+5u^{10}+\cdots+2u+1)^4$
c_2, c_5	$(u^{11}-u^{10}-2u^9+3u^8+2u^7-4u^6+3u^4-u^3-u^2+1)^4$
c_3, c_{10}	$u^{44}-u^{43}+\cdots+910u+19909$
c_4, c_8	$u^{44}+u^{43}+\cdots+34132u+9859$
c_6, c_9	$u^{44}+9u^{43}+\cdots+332u+43$
c_7, c_{12}	$(u^2-u+1)^{22}$
c_{11}	$(u^{11}+9u^{10}+\cdots+10u-1)^4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{11}+3y^{10}+\cdots-10y-1)^4$
c_2, c_5	$(y^{11}-5y^{10}+\cdots+2y-1)^4$
c_3, c_{10}	$y^{44}-21y^{43}+\cdots-17790568y+396368281$
c_4, c_8	$y^{44}-45y^{43}+\cdots-3052479256y+97199881$
c_6, c_9	$y^{44}+11y^{43}+\cdots+25828y+1849$
c_7, c_{12}	$(y^2+y+1)^{22}$
c_{11}	$(y^{11}-21y^{10}+\cdots+66y-1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.146600+1.027860I$ $a=\ 0.0175660+0.1231610I$ $b=\ 0.876184+0.235814I$	$-1.55223+2.02988I$	$-15.8143-3.4641I$
$u=-0.146600-1.027860I$ $a=\ 0.0175660-0.1231610I$ $b=\ 0.876184-0.235814I$	$-1.55223-2.02988I$	$-15.8143+3.4641I$
$u=\ 0.876184+0.235814I$ $a=-0.137463+0.036996I$ $b=-0.146600+1.027860I$	$-1.55223+2.02988I$	$-15.8143-3.4641I$
$u=\ 0.876184-0.235814I$ $a=-0.137463-0.036996I$ $b=-0.146600-1.027860I$	$-1.55223-2.02988I$	$-15.8143+3.4641I$
$u=\ 0.834580+0.096635I$ $a=-0.552333+0.589324I$ $b=-0.15741-1.54482I$	$2.33004-9.05208I$	$-12.4995+8.3503I$
$u=\ 0.834580-0.096635I$ $a=-0.552333-0.589324I$ $b=-0.15741+1.54482I$	$2.33004+9.05208I$	$-12.4995-8.3503I$
$u=\ 1.177290+0.201858I$ $a=\ 1.38770-0.77626I$ $b=-1.92280+0.13240I$	$-5.31149+2.72042I$	$-15.3589-3.3128I$
$u=\ 1.177290-0.201858I$ $a=\ 1.38770+0.77626I$ $b=-1.92280-0.13240I$	$-5.31149-2.72042I$	$-15.3589+3.3128I$
$u=-0.757902+0.040013I$ $a=\ 0.692319+0.354490I$ $b=\ 0.02572-1.45924I$	$4.10386+3.67581I$	$-9.95012-3.70891I$
$u=-0.757902-0.040013I$ $a=\ 0.692319-0.354490I$ $b=\ 0.02572+1.45924I$	$4.10386-3.67581I$	$-9.95012+3.70891I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.204130+0.383857I$ $a=-1.143760-0.610482I$ $b=\ \ 1.72881+0.07778I$	$-3.64484+1.57512I$	$-10.80492-2.09453I$
$u=-1.204130-0.383857I$ $a=-1.143760+0.610482I$ $b=\ \ 1.72881-0.07778I$	$-3.64484-1.57512I$	$-10.80492+2.09453I$
$u=-0.390583+1.224810I$ $a=-0.051222+0.456318I$ $b=-0.472418+0.118896I$	$4.10386-0.38395I$	$-9.95012+3.21929I$
$u=-0.390583-1.224810I$ $a=-0.051222-0.456318I$ $b=-0.472418-0.118896I$	$4.10386+0.38395I$	$-9.95012-3.21929I$
$u=\ \ 0.625013+1.170720I$ $a=\ \ 0.107660+0.499867I$ $b=\ \ 0.290566+0.139821I$	$2.33004-4.99231I$	$-12.49946+1.42209I$
$u=\ \ 0.625013-1.170720I$ $a=\ \ 0.107660-0.499867I$ $b=\ \ 0.290566-0.139821I$	$2.33004+4.99231I$	$-12.49946-1.42209I$
$u=\ \ 1.401580+0.160493I$ $a=\ \ 1.54394-0.34544I$ $b=-1.96590-0.22413I$	$-6.57107-3.30529I$	$-19.4794+4.2651I$
$u=\ \ 1.401580-0.160493I$ $a=\ \ 1.54394+0.34544I$ $b=-1.96590+0.22413I$	$-6.57107+3.30529I$	$-19.4794-4.2651I$
$u=\ \ 0.02572+1.45924I$ $a=\ \ 0.158572+0.372092I$ $b=-0.757902-0.040013I$	$4.10386-3.67581I$	$-9.95012+3.70891I$
$u=\ \ 0.02572-1.45924I$ $a=\ \ 0.158572-0.372092I$ $b=-0.757902+0.040013I$	$4.10386+3.67581I$	$-9.95012-3.70891I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.49934+0.09123I$ $a=-1.215360+0.348743I$ $b=\ 1.58262-0.90400I$	$-5.31149+6.78019I$	$-12.0000-10.2410I$
$u=-1.49934-0.09123I$ $a=-1.215360-0.348743I$ $b=\ 1.58262+0.90400I$	$-5.31149-6.78019I$	$-12.0000+10.2410I$
$u=-0.472418+0.118896I$ $a=\ 0.952038+0.749677I$ $b=-0.390583+1.224810I$	$4.10386-0.38395I$	$-9.95012+3.21929I$
$u=-0.472418-0.118896I$ $a=\ 0.952038-0.749677I$ $b=-0.390583-1.224810I$	$4.10386+0.38395I$	$-9.95012-3.21929I$
$u=-1.51036+0.12279I$ $a=-1.47245+0.03680I$ $b=\ 1.84763-0.57968I$	$-6.57107+0.75447I$	$-12.00000+0.I$
$u=-1.51036-0.12279I$ $a=-1.47245-0.03680I$ $b=\ 1.84763+0.57968I$	$-6.57107-0.75447I$	$-12.00000+0.I$
$u=\ 1.53293+0.03815I$ $a=\ 1.055460+0.166867I$ $b=-1.39548-0.72335I$	$-3.64484-2.48465I$	0
$u=\ 1.53293-0.03815I$ $a=\ 1.055460-0.166867I$ $b=-1.39548+0.72335I$	$-3.64484+2.48465I$	0
$u=-0.15741+1.54482I$ $a=-0.247102+0.360437I$ $b=\ 0.834580-0.096635I$	$2.33004+9.05208I$	0
$u=-0.15741-1.54482I$ $a=-0.247102-0.360437I$ $b=\ 0.834580+0.096635I$	$2.33004-9.05208I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.39548+0.72335I$ $a=-0.996952-0.304617I$ $b=\ \ 1.53293-0.03815I$	$-3.64484+2.48465I$	0
$u=-1.39548-0.72335I$ $a=-0.996952+0.304617I$ $b=\ \ 1.53293+0.03815I$	$-3.64484-2.48465I$	0
$u=\ \ 0.290566+0.139821I$ $a=-0.85770+1.92172I$ $b=\ \ 0.625013+1.170720I$	$2.33004-4.99231I$	$-12.49946+1.42209I$
$u=\ \ 0.290566-0.139821I$ $a=-0.85770-1.92172I$ $b=\ \ 0.625013-1.170720I$	$2.33004+4.99231I$	$-12.49946-1.42209I$
$u=\ \ 1.72881+0.07778I$ $a=\ \ 0.937991+0.129053I$ $b=-1.204130+0.383857I$	$-3.64484+1.57512I$	0
$u=\ \ 1.72881-0.07778I$ $a=\ \ 0.937991-0.129053I$ $b=-1.204130-0.383857I$	$-3.64484-1.57512I$	0
$u=\ \ 1.58262+0.90400I$ $a=\ \ 1.025460-0.185291I$ $b=-1.49934-0.09123I$	$-5.31149-6.78019I$	0
$u=\ \ 1.58262-0.90400I$ $a=\ \ 1.025460+0.185291I$ $b=-1.49934+0.09123I$	$-5.31149+6.78019I$	0
$u=-1.92280+0.13240I$ $a=-0.949343+0.264236I$ $b=\ \ 1.177290+0.201858I$	$-5.31149+2.72042I$	0
$u=-1.92280-0.13240I$ $a=-0.949343-0.264236I$ $b=\ \ 1.177290-0.201858I$	$-5.31149-2.72042I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.84763 + 0.57968I$ $a = 1.130110 - 0.226634I$ $b = -1.51036 - 0.12279I$	$-6.57107 - 0.75447I$	0
$u = 1.84763 - 0.57968I$ $a = 1.130110 + 0.226634I$ $b = -1.51036 + 0.12279I$	$-6.57107 + 0.75447I$	0
$u = -1.96590 + 0.22413I$ $a = -1.100930 - 0.245753I$ $b = 1.401580 - 0.160493I$	$-6.57107 + 3.30529I$	0
$u = -1.96590 - 0.22413I$ $a = -1.100930 + 0.245753I$ $b = 1.401580 + 0.160493I$	$-6.57107 - 3.30529I$	0

III. $I_3^u = \langle b+u,\ -5.42\times 10^{11}u^{21}+7.38\times 10^{11}u^{20}+\cdots+5.32\times 10^{11}a-9.97\times 10^{11},\ u^{22}-u^{21}+\cdots-13u^3-1\rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_9 = \begin{pmatrix}1.01764u^{21}-1.38529u^{20}+\cdots+4.76849u+1.87254\\-u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-0.0255060u^{21}-0.569625u^{20}+\cdots+3.04415u+3.41674\\0.0203918u^{21}+0.140321u^{20}+\cdots-0.367651u-0.341643\end{pmatrix}$$
$$a_8 = \begin{pmatrix}1.01764u^{21}-1.38529u^{20}+\cdots+3.76849u+1.87254\\-u\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1.01764u^{21}-1.38529u^{20}+\cdots+3.76849u+1.87254\\0.341643u^{21}-0.362035u^{20}+\cdots-2.01764u+0.367651\end{pmatrix}$$
$$a_1 = \begin{pmatrix}0.715811u^{21}-0.332883u^{20}+\cdots-4.20735u+0.436308\\-0.409581u^{21}+0.405462u^{20}+\cdots+1.30183u-0.750579\end{pmatrix}$$
$$a_2 = \begin{pmatrix}0.323078u^{21}+0.207966u^{20}+\cdots-2.39576u+1.94745\\-0.154747u^{21}+0.0396708u^{20}+\cdots+0.632801u-0.675730\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-1.39910u^{21}+1.05695u^{20}+\cdots+6.24263u-1.17161\\0.341643u^{21}-0.362035u^{20}+\cdots-0.0176402u+0.367651\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-1.05745u^{21}+0.694918u^{20}+\cdots+6.22499u-0.803959\\0.341643u^{21}-0.362035u^{20}+\cdots-0.0176402u+0.367651\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-1.83352u^{21}+1.54719u^{20}+\cdots+6.31772u-1.17672\\0.0666835u^{21}-0.0438075u^{20}+\cdots-0.525767u+0.674367\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$$= -\frac{7686198297006}{2661920121175}u^{21}+\frac{1900522941334}{2661920121175}u^{20}+\cdots+\frac{41695789261051}{2661920121175}u-\frac{29133516690588}{2661920121175}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{22} - 13u^{21} + \cdots - 70u + 9$
c_2	$u^{22} + 3u^{21} + \cdots - 4u - 3$
c_3, c_{10}	$u^{22} - 7u^{20} + \cdots - 21u + 5$
c_4, c_8	$u^{22} - u^{21} + \cdots - 13u^3 - 1$
c_5	$u^{22} - 3u^{21} + \cdots + 4u - 3$
c_6, c_9	$u^{22} - u^{21} + \cdots - 7u + 1$
c_7	$u^{22} + u^{21} + \cdots - u - 5$
c_{11}	$u^{22} + 18u^{21} + \cdots + 42u + 7$
c_{12}	$u^{22} - u^{21} + \cdots + u - 5$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{22} - y^{21} + \cdots + 374y + 81$
c_2, c_5	$y^{22} - 13y^{21} + \cdots - 70y + 9$
c_3, c_{10}	$y^{22} - 14y^{21} + \cdots - 1081y + 25$
c_4, c_8	$y^{22} - 19y^{21} + \cdots + 16y^2 + 1$
c_6, c_9	$y^{22} + 7y^{21} + \cdots - 33y + 1$
c_7, c_{12}	$y^{22} + 15y^{21} + \cdots + 159y + 25$
c_{11}	$y^{22} - 22y^{21} + \cdots + 4536y + 49$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.462364+0.864470I$ $a=\ \ 0.141220-0.066021I$ $b=\ \ 0.462364-0.864470I$	$3.13797+5.67407I$	$-4.97107-7.09540I$
$u=-0.462364-0.864470I$ $a=\ \ 0.141220+0.066021I$ $b=\ \ 0.462364+0.864470I$	$3.13797-5.67407I$	$-4.97107+7.09540I$
$u=\ \ 0.400384+0.812221I$ $a=-0.480146-0.219236I$ $b=-0.400384-0.812221I$	$5.18891-0.00823I$	$-1.60029+0.02294I$
$u=\ \ 0.400384-0.812221I$ $a=-0.480146+0.219236I$ $b=-0.400384+0.812221I$	$5.18891+0.00823I$	$-1.60029-0.02294I$
$u=-0.688652+0.496345I$ $a=\ \ 0.053910-1.209490I$ $b=\ \ 0.688652-0.496345I$	$-0.09221-3.34290I$	$-14.2348+8.5592I$
$u=-0.688652-0.496345I$ $a=\ \ 0.053910+1.209490I$ $b=\ \ 0.688652+0.496345I$	$-0.09221+3.34290I$	$-14.2348-8.5592I$
$u=\ \ 0.120422+0.762961I$ $a=\ \ 1.68075+0.72584I$ $b=-0.120422-0.762961I$	$4.48540-8.38571I$	$-7.24473+7.59410I$
$u=\ \ 0.120422-0.762961I$ $a=\ \ 1.68075-0.72584I$ $b=-0.120422+0.762961I$	$4.48540+8.38571I$	$-7.24473-7.59410I$
$u=\ \ 0.024400+0.736221I$ $a=-1.57859+0.33368I$ $b=-0.024400-0.736221I$	$6.06599+3.18341I$	$-3.75646-2.30234I$
$u=\ \ 0.024400-0.736221I$ $a=-1.57859-0.33368I$ $b=-0.024400+0.736221I$	$6.06599-3.18341I$	$-3.75646+2.30234I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.46656+0.25570I$ $a=-1.094500-0.034003I$ $b=\ \ 1.46656-0.25570I$	$-3.72903+0.96569I$	$-10.94638+1.02718I$
$u=-1.46656-0.25570I$ $a=-1.094500+0.034003I$ $b=\ \ 1.46656+0.25570I$	$-3.72903-0.96569I$	$-10.94638-1.02718I$
$u=\ \ 1.52896+0.38298I$ $a=\ \ 1.221380+0.007638I$ $b=-1.52896-0.38298I$	$-4.94288-5.39591I$	$-12.40328+4.41457I$
$u=\ \ 1.52896-0.38298I$ $a=\ \ 1.221380-0.007638I$ $b=-1.52896+0.38298I$	$-4.94288+5.39591I$	$-12.40328-4.41457I$
$u=-0.411408$ $a=-1.51545$ $b=\ \ 0.411408$	-2.45749	-16.5320
$u=\ \ 0.280393+0.291523I$ $a=\ \ 2.88851+2.16258I$ $b=-0.280393-0.291523I$	$1.47540-2.33440I$	$-14.8004+7.0340I$
$u=\ \ 0.280393-0.291523I$ $a=\ \ 2.88851-2.16258I$ $b=-0.280393+0.291523I$	$1.47540+2.33440I$	$-14.8004-7.0340I$
$u=-1.63485+0.24302I$ $a=-1.279140-0.301141I$ $b=\ \ 1.63485-0.24302I$	$-5.42396+3.27804I$	$-10.07598-4.81247I$
$u=-1.63485-0.24302I$ $a=-1.279140+0.301141I$ $b=\ \ 1.63485+0.24302I$	$-5.42396-3.27804I$	$-10.07598+4.81247I$
$u=\ \ 1.65513+0.30479I$ $a=\ \ 1.342160-0.171780I$ $b=-1.65513-0.30479I$	$-5.86273-0.02756I$	$-11.53859-3.91620I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 1.65513 - 0.30479I$ $a = \quad 1.342160 + 0.171780I$ $b = -1.65513 + 0.30479I$	$-5.86273 + 0.02756I$	$-11.53859 + 3.91620I$
$u = \quad 1.89690$ $a = \quad 0.724335$ $b = -1.89690$	-11.3077	19.6760

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^{11}+5u^{10}+\cdots+2u+1)^4)(u^{22}-13u^{21}+\cdots-70u+9)$ $\cdot(u^{35}+18u^{34}+\cdots+268u+16)$
c_2	$(u^{11}-u^{10}-2u^9+3u^8+2u^7-4u^6+3u^4-u^3-u^2+1)^4$ $\cdot(u^{22}+3u^{21}+\cdots-4u-3)(u^{35}+8u^{34}+\cdots+42u+4)$
c_3, c_{10}	$(u^{22}-7u^{20}+\cdots-21u+5)(u^{35}-3u^{33}+\cdots-2u+5)$ $\cdot(u^{44}-u^{43}+\cdots+910u+19909)$
c_4, c_8	$(u^{22}-u^{21}+\cdots-13u^3-1)(u^{35}+u^{34}+\cdots+3u+1)$ $\cdot(u^{44}+u^{43}+\cdots+34132u+9859)$
c_5	$(u^{11}-u^{10}-2u^9+3u^8+2u^7-4u^6+3u^4-u^3-u^2+1)^4$ $\cdot(u^{22}-3u^{21}+\cdots+4u-3)(u^{35}+8u^{34}+\cdots+42u+4)$
c_6, c_9	$(u^{22}-u^{21}+\cdots-7u+1)(u^{35}-u^{34}+\cdots-2u+1)$ $\cdot(u^{44}+9u^{43}+\cdots+332u+43)$
c_7	$((u^2-u+1)^{22})(u^{22}+u^{21}+\cdots-u-5)$ $\cdot(u^{35}+24u^{34}+\cdots+39936u+2048)$
c_{11}	$((u^{11}+9u^{10}+\cdots+10u-1)^4)(u^{22}+18u^{21}+\cdots+42u+7)$ $\cdot(u^{35}-23u^{34}+\cdots-230u+1300)$
c_{12}	$((u^2-u+1)^{22})(u^{22}-u^{21}+\cdots+u-5)$ $\cdot(u^{35}+24u^{34}+\cdots+39936u+2048)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^{11}+3y^{10}+\cdots-10y-1)^4)(y^{22}-y^{21}+\cdots+374y+81)$ $\cdot(y^{35}+2y^{34}+\cdots+40048y-256)$
c_2, c_5	$((y^{11}-5y^{10}+\cdots+2y-1)^4)(y^{22}-13y^{21}+\cdots-70y+9)$ $\cdot(y^{35}-18y^{34}+\cdots+268y-16)$
c_3, c_{10}	$(y^{22}-14y^{21}+\cdots-1081y+25)(y^{35}-6y^{34}+\cdots+434y-25)$ $\cdot(y^{44}-21y^{43}+\cdots-17790568y+396368281)$
c_4, c_8	$(y^{22}-19y^{21}+\cdots+16y^2+1)(y^{35}-47y^{34}+\cdots+13y-1)$ $\cdot(y^{44}-45y^{43}+\cdots-3052479256y+97199881)$
c_6, c_9	$(y^{22}+7y^{21}+\cdots-33y+1)(y^{35}+3y^{34}+\cdots-2y-1)$ $\cdot(y^{44}+11y^{43}+\cdots+25828y+1849)$
c_7, c_{12}	$((y^2+y+1)^{22})(y^{22}+15y^{21}+\cdots+159y+25)$ $\cdot(y^{35}+16y^{34}+\cdots+47185920y-4194304)$
c_{11}	$((y^{11}-21y^{10}+\cdots+66y-1)^4)(y^{22}-22y^{21}+\cdots+4536y+49)$ $\cdot(y^{35}-23y^{34}+\cdots+9249100y-1690000)$