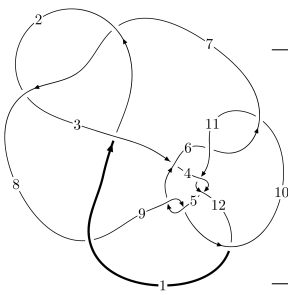
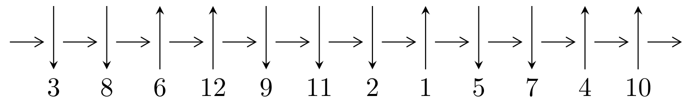
$12a_{0706}$ $(K12a_{0706})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -8.77122\times10^{31}u^{42} + 1.28986\times10^{32}u^{41} + \cdots + 6.23372\times10^{32}b - 4.00675\times10^{32},$$
$$4.66471\times10^{32}u^{42} - 7.74777\times10^{32}u^{41} + \cdots + 2.49349\times10^{33}a + 4.88238\times10^{33},\ u^{43} - 3u^{42} + \cdots - 28u +$$
$$I_2^u = \langle -338u^{34}a + 751u^{34} + \cdots + 2112a - 1193,\ 90u^{34}a - 8u^{34} + \cdots + 5a + 274,\ u^{35} + u^{34} + \cdots + 2u + 1\rangle$$
$$I_3^u = \langle b+1,\ -u^3 - 4u^2 + 4a + 6,\ u^4 - 2u^2 + 2\rangle$$

$$I_1^v = \langle a,\ b-1,\ 2v-1\rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 118 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. $\boldsymbol{I_1^u = \langle -8.77\times 10^{31}u^{42} + 1.29\times 10^{32}u^{41} + \cdots + 6.23\times 10^{32}b - 4.01\times 10^{32},\ 4.66\times 10^{32}u^{42} - 7.75\times 10^{32}u^{41} + \cdots + 2.49\times 10^{33}a + 4.88\times 10^{33},\ u^{43} - 3u^{42} + \cdots - 28u + 8\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^6 - u^4 + 1 \\ u^8 - 2u^6 + 2u^4 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.187076u^{42} + 0.310720u^{41} + \cdots - 1.10826u - 1.95805 \\ 0.140706u^{42} - 0.206917u^{41} + \cdots + 0.489729u + 0.642754 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.0109355u^{42} + 0.0220436u^{41} + \cdots - 0.0604385u + 0.806906 \\ -0.00913229u^{42} - 0.0157531u^{41} + \cdots - 0.674511u + 0.907667 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.0216414u^{42} - 0.0230274u^{41} + \cdots + 0.532942u - 0.0730053 \\ 0.0852608u^{42} - 0.239690u^{41} + \cdots + 2.60820u - 0.0463949 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.0643673u^{42} + 0.170970u^{41} + \cdots - 2.78169u + 2.70928 \\ -0.0198900u^{42} - 0.0117962u^{41} + \cdots - 0.613345u + 0.548201 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.0463696u^{42} + 0.103803u^{41} + \cdots - 0.618528u - 1.31530 \\ 0.140706u^{42} - 0.206917u^{41} + \cdots + 0.489729u + 0.642754 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.157589u^{42} + 0.303639u^{41} + \cdots - 3.64692u + 0.181125 \\ 0.0870361u^{42} - 0.136522u^{41} + \cdots + 1.11816u + 0.638551 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.255497u^{42} - 0.304541u^{41} + \cdots + 16.6870u + 2.47466$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{43} + 21u^{42} + \cdots + 272u + 64$
c_2, c_7	$u^{43} - 3u^{42} + \cdots - 28u + 8$
c_3, c_{12}	$128(128u^{43} + 576u^{42} + \cdots + u + 1)$
c_4, c_{11}	$u^{43} - 18u^{41} + \cdots + 889u + 416$
c_5, c_6, c_9 c_{10}	$u^{43} - u^{42} + \cdots - 24u + 5$
c_8	$u^{43} - 9u^{42} + \cdots + 2332u + 2968$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{43} + 3y^{42} + \cdots - 36608y - 4096$
c_2, c_7	$y^{43} - 21y^{42} + \cdots + 272y - 64$
c_3, c_{12}	$16384(16384y^{43} - 274432y^{42} + \cdots + 75y - 1)$
c_4, c_{11}	$y^{43} - 36y^{42} + \cdots + 989169y - 173056$
c_5, c_6, c_9 c_{10}	$y^{43} + 19y^{42} + \cdots + 126y - 25$
c_8	$y^{43} + 15y^{42} + \cdots + 81561488y - 8809024$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.364395 + 0.877924I$ $a = 0.04638 - 1.82403I$ $b = 0.391782 + 1.198260I$	$4.01698 - 7.46652I$	$3.11751 + 6.34023I$
$u = -0.364395 - 0.877924I$ $a = 0.04638 + 1.82403I$ $b = 0.391782 - 1.198260I$	$4.01698 + 7.46652I$	$3.11751 - 6.34023I$
$u = 0.756742 + 0.762090I$ $a = 0.61467 - 2.10710I$ $b = 0.38983 + 1.39078I$	$12.3032 - 10.3019I$	$6.09134 + 7.29034I$
$u = 0.756742 - 0.762090I$ $a = 0.61467 + 2.10710I$ $b = 0.38983 - 1.39078I$	$12.3032 + 10.3019I$	$6.09134 - 7.29034I$
$u = 0.309821 + 0.864620I$ $a = 0.23217 + 1.87818I$ $b = 0.54746 - 1.38673I$	$9.6780 + 13.4175I$	$4.66358 - 6.56976I$
$u = 0.309821 - 0.864620I$ $a = 0.23217 - 1.87818I$ $b = 0.54746 + 1.38673I$	$9.6780 - 13.4175I$	$4.66358 + 6.56976I$
$u = 0.263698 + 1.077760I$ $a = 0.063581 + 1.403550I$ $b = -0.030867 - 1.141810I$	$7.30362 - 1.07498I$	$16.0017 + 3.6754I$
$u = 0.263698 - 1.077760I$ $a = 0.063581 - 1.403550I$ $b = -0.030867 + 1.141810I$	$7.30362 + 1.07498I$	$16.0017 - 3.6754I$
$u = -1.045620 + 0.374301I$ $a = 1.32312 + 1.26742I$ $b = 1.240050 - 0.457624I$	$-2.30003 + 1.95260I$	$-1.79739 + 0.90426I$
$u = -1.045620 - 0.374301I$ $a = 1.32312 - 1.26742I$ $b = 1.240050 + 0.457624I$	$-2.30003 - 1.95260I$	$-1.79739 - 0.90426I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.044540 + 0.384315I$ $a = 0.304099 + 0.657915I$ $b = -0.100329 - 0.404925I$	$-0.22935 - 3.67460I$	$-0.89632 + 6.35112I$
$u = 1.044540 - 0.384315I$ $a = 0.304099 - 0.657915I$ $b = -0.100329 + 0.404925I$	$-0.22935 + 3.67460I$	$-0.89632 - 6.35112I$
$u = -0.846910 + 0.182966I$ $a = 0.062155 + 0.638512I$ $b = -0.715260 - 0.471235I$	$-0.998880 + 0.351600I$	$-6.01917 - 1.74255I$
$u = -0.846910 - 0.182966I$ $a = 0.062155 - 0.638512I$ $b = -0.715260 + 0.471235I$	$-0.998880 - 0.351600I$	$-6.01917 + 1.74255I$
$u = 0.867602 + 0.745647I$ $a = 0.99486 - 1.48397I$ $b = -0.307161 + 1.363000I$	$11.98760 + 4.69062I$	$6.27466 - 2.28196I$
$u = 0.867602 - 0.745647I$ $a = 0.99486 + 1.48397I$ $b = -0.307161 - 1.363000I$	$11.98760 - 4.69062I$	$6.27466 + 2.28196I$
$u = 1.079400 + 0.517359I$ $a = -0.01844 - 1.52789I$ $b = 1.49377 - 0.29947I$	$-1.25135 - 4.90293I$	$2.46086 + 7.07158I$
$u = 1.079400 - 0.517359I$ $a = -0.01844 + 1.52789I$ $b = 1.49377 + 0.29947I$	$-1.25135 + 4.90293I$	$2.46086 - 7.07158I$
$u = -0.790225 + 0.907782I$ $a = 0.45900 + 1.60463I$ $b = 0.082408 - 1.150310I$	$6.23041 + 3.24342I$	$11.79096 - 7.78462I$
$u = -0.790225 - 0.907782I$ $a = 0.45900 - 1.60463I$ $b = 0.082408 + 1.150310I$	$6.23041 - 3.24342I$	$11.79096 + 7.78462I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.136540 + 0.399301I$ $a = 1.014030 - 0.675093I$ $b = 0.799216 + 0.538229I$	$-4.92648 - 4.54280I$	$-9.30891 + 6.68648I$
$u = 1.136540 - 0.399301I$ $a = 1.014030 + 0.675093I$ $b = 0.799216 - 0.538229I$	$-4.92648 + 4.54280I$	$-9.30891 - 6.68648I$
$u = 1.217380 + 0.123691I$ $a = -0.278389 - 0.273065I$ $b = -0.417369 + 1.014720I$	$-1.53276 + 4.52647I$	$-3.84680 - 6.77592I$
$u = 1.217380 - 0.123691I$ $a = -0.278389 + 0.273065I$ $b = -0.417369 - 1.014720I$	$-1.53276 - 4.52647I$	$-3.84680 + 6.77592I$
$u = -1.127830 + 0.474826I$ $a = 0.096382 + 0.762504I$ $b = 0.864085 + 0.359880I$	$-4.41300 + 3.28480I$	$-9.46585 - 1.64947I$
$u = -1.127830 - 0.474826I$ $a = 0.096382 - 0.762504I$ $b = 0.864085 - 0.359880I$	$-4.41300 - 3.28480I$	$-9.46585 + 1.64947I$
$u = -1.238660 + 0.218673I$ $a = -0.381217 - 0.075299I$ $b = -0.53587 - 1.30966I$	$4.54892 - 10.07780I$	$-0.39399 + 5.36382I$
$u = -1.238660 - 0.218673I$ $a = -0.381217 + 0.075299I$ $b = -0.53587 + 1.30966I$	$4.54892 + 10.07780I$	$-0.39399 - 5.36382I$
$u = -1.153790 + 0.610907I$ $a = -1.48361 - 1.48093I$ $b = -0.458133 + 1.229980I$	$1.62850 + 12.94670I$	$0. - 9.56767I$
$u = -1.153790 - 0.610907I$ $a = -1.48361 + 1.48093I$ $b = -0.458133 - 1.229980I$	$1.62850 - 12.94670I$	$0. + 9.56767I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.694049$ $a=-0.0645283$ $b=-0.550881$	-1.02637	-10.0280
$u=\ \ 1.167800+0.591087I$ $a=-1.86194+1.44933I$ $b=-0.58874-1.39305I$	$7.1025-18.7791I$	$1.67063+10.13873I$
$u=\ \ 1.167800-0.591087I$ $a=-1.86194-1.44933I$ $b=-0.58874+1.39305I$	$7.1025+18.7791I$	$1.67063-10.13873I$
$u=\ \ 0.370173+0.562820I$ $a=\ \ 0.890218+0.191663I$ $b=-1.40761-0.15779I$	$0.787413+0.515759I$	$8.15856-2.76240I$
$u=\ \ 0.370173-0.562820I$ $a=\ \ 0.890218-0.191663I$ $b=-1.40761+0.15779I$	$0.787413-0.515759I$	$8.15856+2.76240I$
$u=-0.085379+0.627851I$ $a=\ \ 0.241341-0.446824I$ $b=-0.728213+0.394310I$	$-1.60222+0.88694I$	$-6.18860-3.12820I$
$u=-0.085379-0.627851I$ $a=\ \ 0.241341+0.446824I$ $b=-0.728213-0.394310I$	$-1.60222-0.88694I$	$-6.18860+3.12820I$
$u=\ \ 1.208770+0.701017I$ $a=-0.901694+1.038270I$ $b=-0.114387-1.123360I$	$4.48482-5.24026I$	$9.16270+10.48846I$
$u=\ \ 1.208770-0.701017I$ $a=-0.901694-1.038270I$ $b=-0.114387+1.123360I$	$4.48482+5.24026I$	$9.16270-10.48846I$
$u=-1.342780+0.405991I$ $a=\ \ 0.590693+0.381161I$ $b=\ \ 0.193810-1.053580I$	$2.11212+6.10939I$	$0.-12.47941I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.342780 - 0.405991I$ $a = 0.590693 - 0.381161I$ $b = 0.193810 + 1.053580I$	$2.11212 - 6.10939I$	$0. + 12.47941I$
$u = 0.420151 + 0.385137I$ $a = -1.47515 + 0.40144I$ $b = 0.176966 - 0.117588I$	$1.51091 + 0.21948I$	$6.61608 - 0.74738I$
$u = 0.420151 - 0.385137I$ $a = -1.47515 - 0.40144I$ $b = 0.176966 + 0.117588I$	$1.51091 - 0.21948I$	$6.61608 + 0.74738I$

II. $I_2^u = \langle -338u^{34}a + 751u^{34} + \cdots + 2112a - 1193,\ 90u^{34}a - 8u^{34} + \cdots + 5a + 274,\ u^{35} + u^{34} + \cdots + 2u + 1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^6 - u^4 + 1 \\ u^8 - 2u^6 + 2u^4 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} a \\ 0.0725789au^{34} - 0.161263u^{34} + \cdots - 0.453511a + 0.256174 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.161263au^{34} + 1.98020u^{34} + \cdots + 0.256174a - 0.298776 \\ 0.120464au^{34} + 0.0725789u^{34} + \cdots + 0.0283444a + 0.546489 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -2.63629au^{34} - 1.29937u^{34} + \cdots - 0.973245a - 4.98809 \\ 0.000858922au^{34} - 2.41374u^{34} + \cdots - 0.0586214a - 0.862057 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.161263au^{34} + 1.98020u^{34} + \cdots + 0.256174a - 1.29878 \\ 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.0725789au^{34} - 0.161263u^{34} + \cdots + 0.546489a + 0.256174 \\ 0.0725789au^{34} - 0.161263u^{34} + \cdots - 0.453511a + 0.256174 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -2.41374au^{34} - 0.700116u^{34} + \cdots - 0.862057a - 2.24709 \\ 0.439768au^{34} - 2.63629u^{34} + \cdots - 0.0141722a - 0.973245 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= 4u^{33} - 32u^{31} - 4u^{30} + 132u^{29} + 28u^{28} - 348u^{27} - 100u^{26} + 644u^{25} + 224u^{24} - 868u^{23} - 344u^{22} + 880u^{21} + 376u^{20} - 700u^{19} - 312u^{18} + 488u^{17} + 228u^{16} - 336u^{15} - 180u^{14} + 232u^{13} + 140u^{12} - 136u^{11} - 88u^{10} + 72u^9 + 44u^8 - 32u^7 - 24u^6 + 16u^5 + 16u^4 - 4u^3 - 8u^2 + 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{35} + 17u^{34} + \cdots + 2u + 1)^2$
c_2, c_7	$(u^{35} + u^{34} + \cdots + 2u + 1)^2$
c_3, c_{12}	$25(25u^{70} - 165u^{69} + \cdots + 4.75915 \times 10^8 u + 3.82582 \times 10^7)$
c_4, c_{11}	$(u^{35} - u^{34} + \cdots + u^2 - 1)^2$
c_5, c_6, c_9 c_{10}	$u^{70} + 3u^{69} + \cdots + 8u + 1$
c_8	$(u^{35} + 3u^{34} + \cdots + 58u + 7)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{35} + 3y^{34} + \cdots - 14y - 1)^2$
c_2, c_7	$(y^{35} - 17y^{34} + \cdots + 2y - 1)^2$
c_3, c_{12}	$625(625y^{70} - 23125y^{69} + \cdots - 1.79208 \times 10^{16}y + 1.46369 \times 10^{15})$
c_4, c_{11}	$(y^{35} - 29y^{34} + \cdots + 2y - 1)^2$
c_5, c_6, c_9 c_{10}	$y^{70} + 47y^{69} + \cdots + 16y + 1$
c_8	$(y^{35} + 11y^{34} + \cdots + 1446y - 49)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.890522 + 0.542191I$ $a = 0.420148 - 1.134650I$ $b = -0.887010 - 0.496104I$	$6.32924 - 0.83862I$	$3.46140 - 0.32367I$
$u = -0.890522 + 0.542191I$ $a = -1.81892 - 1.34506I$ $b = 0.17214 + 1.46425I$	$6.32924 - 0.83862I$	$3.46140 - 0.32367I$
$u = -0.890522 - 0.542191I$ $a = 0.420148 + 1.134650I$ $b = -0.887010 + 0.496104I$	$6.32924 + 0.83862I$	$3.46140 + 0.32367I$
$u = -0.890522 - 0.542191I$ $a = -1.81892 + 1.34506I$ $b = 0.17214 - 1.46425I$	$6.32924 + 0.83862I$	$3.46140 + 0.32367I$
$u = 0.996188 + 0.423828I$ $a = -0.787246 + 0.845478I$ $b = -0.352524 + 0.767455I$	$1.75221 - 1.71623I$	$-3.26691 - 0.12597I$
$u = 0.996188 + 0.423828I$ $a = -1.23437 + 1.84232I$ $b = -0.064633 - 1.226040I$	$1.75221 - 1.71623I$	$-3.26691 - 0.12597I$
$u = 0.996188 - 0.423828I$ $a = -0.787246 - 0.845478I$ $b = -0.352524 - 0.767455I$	$1.75221 + 1.71623I$	$-3.26691 + 0.12597I$
$u = 0.996188 - 0.423828I$ $a = -1.23437 - 1.84232I$ $b = -0.064633 + 1.226040I$	$1.75221 + 1.71623I$	$-3.26691 + 0.12597I$
$u = -0.665614 + 0.623440I$ $a = -0.439114 + 0.434345I$ $b = 1.033840 - 0.288357I$	$6.99216 + 5.45820I$	$4.60996 - 5.96309I$
$u = -0.665614 + 0.623440I$ $a = -0.40352 - 2.35368I$ $b = -0.34875 + 1.47367I$	$6.99216 + 5.45820I$	$4.60996 - 5.96309I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.665614-0.623440I$		
$a=-0.439114-0.434345I$	$6.99216-5.45820I$	$4.60996+5.96309I$
$b=1.033840+0.288357I$		
$u=-0.665614-0.623440I$		
$a=-0.40352+2.35368I$	$6.99216-5.45820I$	$4.60996+5.96309I$
$b=-0.34875-1.47367I$		
$u=-0.903342$		
$a=-1.89131+1.48396I$	5.63430	0.141130
$b=-0.344219+1.164240I$		
$u=-0.903342$		
$a=-1.89131-1.48396I$	5.63430	0.141130
$b=-0.344219-1.164240I$		
$u=0.688085+0.531421I$		
$a=0.212009+0.451127I$	$2.50904-2.01862I$	$-1.09133+4.63726I$
$b=0.336278+0.239728I$		
$u=0.688085+0.531421I$		
$a=-0.88597+2.22330I$	$2.50904-2.01862I$	$-1.09133+4.63726I$
$b=-0.108999-1.142220I$		
$u=0.688085-0.531421I$		
$a=0.212009-0.451127I$	$2.50904+2.01862I$	$-1.09133-4.63726I$
$b=0.336278-0.239728I$		
$u=0.688085-0.531421I$		
$a=-0.88597-2.22330I$	$2.50904+2.01862I$	$-1.09133-4.63726I$
$b=-0.108999+1.142220I$		
$u=-1.059800+0.502369I$		
$a=0.26147+1.61880I$	$2.48084+4.67146I$	$-0.51273-7.37463I$
$b=-0.234288-1.162630I$		
$u=-1.059800+0.502369I$		
$a=-2.79747-1.54656I$	$2.48084+4.67146I$	$-0.51273-7.37463I$
$b=-0.319958+1.048700I$		

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.059800-0.502369I$ $a=0.26147-1.61880I$ $b=-0.234288+1.162630I$	$2.48084-4.67146I$	$-0.51273+7.37463I$
$u=-1.059800-0.502369I$ $a=-2.79747+1.54656I$ $b=-0.319958-1.048700I$	$2.48084-4.67146I$	$-0.51273+7.37463I$
$u=1.146120+0.254789I$ $a=-1.037470+0.622193I$ $b=-1.044800-0.117101I$	$0.76959+4.45397I$	$-3.15239-2.81525I$
$u=1.146120+0.254789I$ $a=0.169760-0.407579I$ $b=0.59055-1.28795I$	$0.76959+4.45397I$	$-3.15239-2.81525I$
$u=1.146120-0.254789I$ $a=-1.037470-0.622193I$ $b=-1.044800+0.117101I$	$0.76959-4.45397I$	$-3.15239+2.81525I$
$u=1.146120-0.254789I$ $a=0.169760+0.407579I$ $b=0.59055+1.28795I$	$0.76959-4.45397I$	$-3.15239+2.81525I$
$u=-0.308085+0.766136I$ $a=-0.588916-0.042005I$ $b=1.177980+0.012281I$	$5.25576-7.38977I$	$3.01566+5.00078I$
$u=-0.308085+0.766136I$ $a=-0.10013+1.93999I$ $b=-0.58139-1.43466I$	$5.25576-7.38977I$	$3.01566+5.00078I$
$u=-0.308085-0.766136I$ $a=-0.588916+0.042005I$ $b=1.177980-0.012281I$	$5.25576+7.38977I$	$3.01566-5.00078I$
$u=-0.308085-0.766136I$ $a=-0.10013-1.93999I$ $b=-0.58139+1.43466I$	$5.25576+7.38977I$	$3.01566-5.00078I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.142990 + 0.287310I$ $a = -0.674948 - 0.484137I$ $b = -0.687825 + 0.345199I$	$-3.52386 - 0.30557I$	$-7.68573 + 0.05854I$
$u = -1.142990 + 0.287310I$ $a = 0.277824 + 0.046595I$ $b = 0.500699 + 0.963199I$	$-3.52386 - 0.30557I$	$-7.68573 + 0.05854I$
$u = -1.142990 - 0.287310I$ $a = -0.674948 + 0.484137I$ $b = -0.687825 - 0.345199I$	$-3.52386 + 0.30557I$	$-7.68573 - 0.05854I$
$u = -1.142990 - 0.287310I$ $a = 0.277824 - 0.046595I$ $b = 0.500699 - 0.963199I$	$-3.52386 + 0.30557I$	$-7.68573 - 0.05854I$
$u = 0.460984 + 0.678579I$ $a = -0.07948 + 1.72676I$ $b = 0.69761 - 1.36017I$	$10.08710 + 1.04155I$	$7.85373 - 0.57295I$
$u = 0.460984 + 0.678579I$ $a = 0.11349 - 2.12206I$ $b = 0.50150 + 1.51702I$	$10.08710 + 1.04155I$	$7.85373 - 0.57295I$
$u = 0.460984 - 0.678579I$ $a = -0.07948 - 1.72676I$ $b = 0.69761 + 1.36017I$	$10.08710 - 1.04155I$	$7.85373 + 0.57295I$
$u = 0.460984 - 0.678579I$ $a = 0.11349 + 2.12206I$ $b = 0.50150 - 1.51702I$	$10.08710 - 1.04155I$	$7.85373 + 0.57295I$
$u = 1.141570 + 0.325389I$ $a = 0.336135 + 0.693863I$ $b = 0.278779 - 0.228359I$	$-0.03490 - 3.85709I$	$-4.01107 + 3.91391I$
$u = 1.141570 + 0.325389I$ $a = -0.0437808 + 0.0663890I$ $b = -0.186633 - 0.896468I$	$-0.03490 - 3.85709I$	$-4.01107 + 3.91391I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.141570 - 0.325389I$ $a = 0.336135 - 0.693863I$ $b = 0.278779 + 0.228359I$	$-0.03490 + 3.85709I$	$-4.01107 - 3.91391I$
$u = 1.141570 - 0.325389I$ $a = -0.0437808 - 0.0663890I$ $b = -0.186633 + 0.896468I$	$-0.03490 + 3.85709I$	$-4.01107 - 3.91391I$
$u = 1.053770 + 0.564883I$ $a = 1.44332 - 0.58846I$ $b = -0.41775 + 1.60635I$	$8.34984 - 5.85664I$	$4.52563 + 5.76903I$
$u = 1.053770 + 0.564883I$ $a = -1.89148 + 1.53790I$ $b = -0.81409 - 1.29517I$	$8.34984 - 5.85664I$	$4.52563 + 5.76903I$
$u = 1.053770 - 0.564883I$ $a = 1.44332 + 0.58846I$ $b = -0.41775 - 1.60635I$	$8.34984 + 5.85664I$	$4.52563 - 5.76903I$
$u = 1.053770 - 0.564883I$ $a = -1.89148 - 1.53790I$ $b = -0.81409 + 1.29517I$	$8.34984 + 5.85664I$	$4.52563 - 5.76903I$
$u = 0.276974 + 0.740238I$ $a = -0.352310 - 0.333827I$ $b = 0.706334 + 0.106935I$	$0.71532 + 3.36312I$	$-1.83397 - 3.13288I$
$u = 0.276974 + 0.740238I$ $a = -0.34322 - 1.79653I$ $b = -0.401602 + 1.116130I$	$0.71532 + 3.36312I$	$-1.83397 - 3.13288I$
$u = 0.276974 - 0.740238I$ $a = -0.352310 + 0.333827I$ $b = 0.706334 - 0.106935I$	$0.71532 - 3.36312I$	$-1.83397 + 3.13288I$
$u = 0.276974 - 0.740238I$ $a = -0.34322 + 1.79653I$ $b = -0.401602 - 1.116130I$	$0.71532 - 3.36312I$	$-1.83397 + 3.13288I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.131430 + 0.520956I$ $a = -0.415635 + 0.780636I$ $b = -0.159300 + 0.136630I$	$1.28903 + 4.02658I$	$-2.00000 - 2.90516I$
$u = -1.131430 + 0.520956I$ $a = 2.00512 + 0.91973I$ $b = 0.063369 - 1.070960I$	$1.28903 + 4.02658I$	$-2.00000 - 2.90516I$
$u = -1.131430 - 0.520956I$ $a = -0.415635 - 0.780636I$ $b = -0.159300 - 0.136630I$	$1.28903 - 4.02658I$	$-2.00000 + 2.90516I$
$u = -1.131430 - 0.520956I$ $a = 2.00512 - 0.91973I$ $b = 0.063369 + 1.070960I$	$1.28903 - 4.02658I$	$-2.00000 + 2.90516I$
$u = 1.134810 + 0.545503I$ $a = -0.088444 + 0.629026I$ $b = -0.834149 + 0.124912I$	$-1.77646 - 8.22097I$	$-4.85255 + 6.68822I$
$u = 1.134810 + 0.545503I$ $a = 1.72527 - 1.36047I$ $b = 0.480581 + 1.168070I$	$-1.77646 - 8.22097I$	$-4.85255 + 6.68822I$
$u = 1.134810 - 0.545503I$ $a = -0.088444 - 0.629026I$ $b = -0.834149 - 0.124912I$	$-1.77646 + 8.22097I$	$-4.85255 - 6.68822I$
$u = 1.134810 - 0.545503I$ $a = 1.72527 + 1.36047I$ $b = 0.480581 - 1.168070I$	$-1.77646 + 8.22097I$	$-4.85255 - 6.68822I$
$u = -1.134940 + 0.561389I$ $a = -0.215432 - 1.235000I$ $b = -1.249680 - 0.050047I$	$2.82939 + 12.38410I$	$-0.15786 - 8.57579I$
$u = -1.134940 + 0.561389I$ $a = 1.90003 + 1.45902I$ $b = 0.65668 - 1.44821I$	$2.82939 + 12.38410I$	$-0.15786 - 8.57579I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.134940-0.561389I$ $a=-0.215432+1.235000I$ $b=-1.249680+0.050047I$	$2.82939-12.38410I$	$-0.15786+8.57579I$
$u=-1.134940-0.561389I$ $a=\ \ 1.90003-1.45902I$ $b=\ \ 0.65668+1.44821I$	$2.82939-12.38410I$	$-0.15786+8.57579I$
$u=-0.217277+0.699987I$ $a=\ \ 0.157163+1.157450I$ $b=-0.113324+0.190551I$	$3.88220+0.59945I$	$1.29885-0.74081I$
$u=-0.217277+0.699987I$ $a=-1.27039+1.48005I$ $b=\ \ 0.040324-1.086570I$	$3.88220+0.59945I$	$1.29885-0.74081I$
$u=-0.217277-0.699987I$ $a=\ \ 0.157163-1.157450I$ $b=-0.113324-0.190551I$	$3.88220-0.59945I$	$1.29885+0.74081I$
$u=-0.217277-0.699987I$ $a=-1.27039-1.48005I$ $b=\ \ 0.040324+1.086570I$	$3.88220-0.59945I$	$1.29885+0.74081I$
$u=-0.396163+0.521609I$ $a=\ \ 2.00625-2.76320I$ $b=\ \ 0.222362+1.035550I$	$4.38168-0.44632I$	$4.73891+2.08073I$
$u=-0.396163+0.521609I$ $a=\ \ 1.53155+3.40113I$ $b=\ \ 0.191906-1.087580I$	$4.38168-0.44632I$	$4.73891+2.08073I$
$u=-0.396163-0.521609I$ $a=\ \ 2.00625+2.76320I$ $b=\ \ 0.222362-1.035550I$	$4.38168+0.44632I$	$4.73891-2.08073I$
$u=-0.396163-0.521609I$ $a=\ \ 1.53155-3.40113I$ $b=\ \ 0.191906+1.087580I$	$4.38168+0.44632I$	$4.73891-2.08073I$

III. $I_3^u = \langle b+1,\ -u^3-4u^2+4a+6,\ u^4-2u^2+2\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^2-2u+2)^2$
c_2, c_7	u^4-2u^2+2
c_3	$16(16u^4+32u^3+32u^2+16u+5)$
c_4, c_5, c_6	$(u+1)^4$
c_8	u^4+2u^2+2
c_9, c_{10}, c_{11}	$(u-1)^4$
c_{12}	$16(16u^4-32u^3+32u^2-16u+5)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^2+4)^2$
c_2, c_7	$(y^2-2y+2)^2$
c_3, c_{12}	$256(256y^4+160y^2+64y+25)$
c_4, c_5, c_6 c_9, c_{10}, c_{11}	$(y-1)^4$
c_8	$(y^2+2y+2)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 1.098680 + 0.455090I$ $a = -0.33910 + 1.38844I$ $b = -1.00000$	$-2.46740 - 3.66386I$	$-4.00000 + 4.00000I$
$u = \quad 1.098680 - 0.455090I$ $a = -0.33910 - 1.38844I$ $b = -1.00000$	$-2.46740 + 3.66386I$	$-4.00000 - 4.00000I$
$u = -1.098680 + 0.455090I$ $a = -0.660899 - 0.611557I$ $b = -1.00000$	$-2.46740 + 3.66386I$	$-4.00000 - 4.00000I$
$u = -1.098680 - 0.455090I$ $a = -0.660899 + 0.611557I$ $b = -1.00000$	$-2.46740 - 3.66386I$	$-4.00000 + 4.00000I$

IV. $I_1^v = \langle a,\ b-1,\ 2v-1 \rangle$

(i) Arc colorings

$a_2 = \begin{pmatrix} 0.5 \\ 0 \end{pmatrix}$

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

$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$

$a_3 = \begin{pmatrix} 0.5 \\ 0 \end{pmatrix}$

$a_1 = \begin{pmatrix} 0.5 \\ 0 \end{pmatrix}$

$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$

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

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

$a_4 = \begin{pmatrix} 1 \\ -0.5 \end{pmatrix}$

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

$a_{10} = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$

$a_{12} = \begin{pmatrix} 1 \\ 0.5 \end{pmatrix}$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

	Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v =$	0.500000		
$a =$	0	0	0
$b =$	1.00000		

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u(u^2-2u+2)^2(u^{35}+17u^{34}+\cdots+2u+1)^2$ $\cdot(u^{43}+21u^{42}+\cdots+272u+64)$
c_2, c_7	$u(u^4-2u^2+2)(u^{35}+u^{34}+\cdots+2u+1)^2(u^{43}-3u^{42}+\cdots-28u+8)$
c_3	$102400(2u+1)(16u^4+32u^3+32u^2+16u+5)$ $\cdot(128u^{43}+576u^{42}+\cdots+u+1)$ $\cdot(25u^{70}-165u^{69}+\cdots+475915454u+38258189)$
c_4	$(u-1)(u+1)^4(u^{35}-u^{34}+\cdots+u^2-1)^2$ $\cdot(u^{43}-18u^{41}+\cdots+889u+416)$
c_5, c_6	$(u-1)(u+1)^4(u^{43}-u^{42}+\cdots-24u+5)(u^{70}+3u^{69}+\cdots+8u+1)$
c_8	$u(u^4+2u^2+2)(u^{35}+3u^{34}+\cdots+58u+7)^2$ $\cdot(u^{43}-9u^{42}+\cdots+2332u+2968)$
c_9, c_{10}	$((u-1)^4)(u+1)(u^{43}-u^{42}+\cdots-24u+5)(u^{70}+3u^{69}+\cdots+8u+1)$
c_{11}	$((u-1)^4)(u+1)(u^{35}-u^{34}+\cdots+u^2-1)^2$ $\cdot(u^{43}-18u^{41}+\cdots+889u+416)$
c_{12}	$102400(2u-1)(16u^4-32u^3+32u^2-16u+5)$ $\cdot(128u^{43}+576u^{42}+\cdots+u+1)$ $\cdot(25u^{70}-165u^{69}+\cdots+475915454u+38258189)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y(y^2+4)^2(y^{35}+3y^{34}+\cdots-14y-1)^2$ $\cdot\,(y^{43}+3y^{42}+\cdots-36608y-4096)$
c_2, c_7	$y(y^2-2y+2)^2(y^{35}-17y^{34}+\cdots+2y-1)^2$ $\cdot\,(y^{43}-21y^{42}+\cdots+272y-64)$
c_3, c_{12}	$10485760000(4y-1)(256y^4+160y^2+64y+25)$ $\cdot\,(16384y^{43}-274432y^{42}+\cdots+75y-1)$ $\cdot\,(625y^{70}-2.31\times10^4y^{69}+\cdots-1.79\times10^{16}y+1.46\times10^{15})$
c_4, c_{11}	$((y-1)^5)(y^{35}-29y^{34}+\cdots+2y-1)^2$ $\cdot\,(y^{43}-36y^{42}+\cdots+989169y-173056)$
c_5, c_6, c_9 c_{10}	$((y-1)^5)(y^{43}+19y^{42}+\cdots+126y-25)(y^{70}+47y^{69}+\cdots+16y+1)$
c_8	$y(y^2+2y+2)^2(y^{35}+11y^{34}+\cdots+1446y-49)^2$ $\cdot\,(y^{43}+15y^{42}+\cdots+81561488y-8809024)$