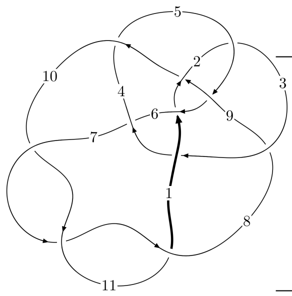
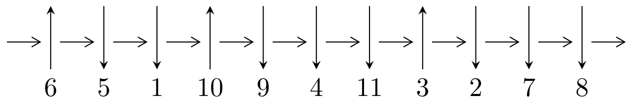
$11a_{348}$ $(K11a_{348})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle &-1.83178 \times 10^{30}u^{28} - 4.25498 \times 10^{31}u^{27} + \cdots + 1.83797 \times 10^{31}b - 2.13808 \times 10^{31}, \\
&- 2.13808 \times 10^{31}u^{28} - 4.00799 \times 10^{32}u^{27} + \cdots + 1.34172 \times 10^{33}a + 1.06235 \times 10^{34}, \\
&u^{29} + 25u^{28} + \cdots + 638u + 73\rangle \\
I_2^u = \langle &-600u^{14}a^3 - 936u^{14}a^2 + \cdots - 1792a - 1217,\ 8u^{14}a^3 + 72u^{14}a^2 + \cdots + 218a + 237, \\
&u^{15} - 7u^{14} + 23u^{13} - 42u^{12} + 38u^{11} + 7u^{10} - 61u^9 + 62u^8 - 2u^7 - 50u^6 + 38u^5 + 4u^4 - 20u^3 + 7u^2 + 3u - \\
I_3^u = \langle &-231789u^{14} + 1842380u^{13} + \cdots + 808985b - 1813670, \\
&- 362734u^{14} + 2468395u^{13} + \cdots + 4044925a + 9070125,\ u^{15} - 10u^{14} + \cdots + 105u - 25\rangle
\end{aligned}$$

$$\begin{aligned}
I_1^v &= \langle a,\ b^2 - bv + 2b - v + 3,\ v^2 - 3v + 1\rangle \\
I_2^v &= \langle a,\ b^2 + b + 1,\ v - 1\rangle
\end{aligned}$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 110 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. $\boldsymbol{I_1^u = \langle -1.83 \times 10^{30} u^{28} - 4.25 \times 10^{31} u^{27} + \cdots + 1.84 \times 10^{31} b - 2.14 \times 10^{31},\ -2.14 \times 10^{31} u^{28} - 4.01 \times 10^{32} u^{27} + \cdots + 1.34 \times 10^{33} a + 1.06 \times 10^{34},\ u^{29} + 25u^{28} + \cdots + 638u + 73 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.0159354u^{28} + 0.298722u^{27} + \cdots - 40.6500u - 7.91783 \\ 0.0996632u^{28} + 2.31505u^{27} + \cdots + 18.0846u + 1.16328 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.0368204u^{28} + 0.942895u^{27} + \cdots + 43.0059u + 7.47915 \\ -0.0223856u^{28} - 0.491135u^{27} + \cdots + 17.0122u + 2.68789 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.0837278u^{28} - 2.01633u^{27} + \cdots - 58.7346u - 9.08111 \\ 0.0996632u^{28} + 2.31505u^{27} + \cdots + 18.0846u + 1.16328 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.107125u^{28} - 2.64363u^{27} + \cdots - 54.0442u - 5.41609 \\ 0.0340032u^{28} + 0.644747u^{27} + \cdots - 44.9598u - 6.18598 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.0130859u^{28} + 0.295275u^{27} + \cdots - 5.98849u + 0.469224 \\ 0.0461201u^{28} + 1.13875u^{27} + \cdots + 33.9822u + 4.32204 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.0636554u^{28} + 1.58804u^{27} + \cdots + 66.1229u + 10.2269 \\ 0.0414256u^{28} + 1.05896u^{27} + \cdots + 53.1661u + 7.35249 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.0928024u^{28} + 2.19118u^{27} + \cdots + 3.68727u - 1.80570 \\ -0.0384173u^{28} - 0.676173u^{27} + \cdots + 31.1112u + 3.29583 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.0973760u^{28} - 2.33888u^{27} + \cdots - 49.8137u - 6.44579 \\ -0.0796577u^{28} - 2.01645u^{27} + \cdots - 84.2207u - 11.6200 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.0973760u^{28} - 2.33888u^{27} + \cdots - 49.8137u - 6.44579 \\ -0.0796577u^{28} - 2.01645u^{27} + \cdots - 84.2207u - 11.6200 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.174043u^{28} + 3.67857u^{27} + \cdots - 96.9970u - 20.7731$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{29} - 29u^{28} + \cdots - 131072u + 16384$
c_2	$u^{29} - 25u^{28} + \cdots + 638u - 73$
c_3, c_6	$u^{29} - u^{28} + \cdots + 17u + 1$
c_4, c_8	$u^{29} - u^{28} + \cdots + 21u + 9$
c_5, c_9	$u^{29} + 2u^{27} + \cdots + u + 1$
c_7, c_{10}, c_{11}	$u^{29} + 9u^{28} + \cdots + 49u + 73$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{29} - 7y^{28} + \cdots + 5100273664y - 268435456$
c_2	$y^{29} - 13y^{28} + \cdots + 27006y - 5329$
c_3, c_6	$y^{29} - 7y^{28} + \cdots + 235y - 1$
c_4, c_8	$y^{29} + 17y^{28} + \cdots - 225y - 81$
c_5, c_9	$y^{29} + 4y^{28} + \cdots - 3y - 1$
c_7, c_{10}, c_{11}	$y^{29} - 31y^{28} + \cdots - 8987y - 5329$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.533215 + 0.743878I$ $a = 1.068930 - 0.077579I$ $b = 0.512259 - 0.836519I$	$2.89664 + 0.46546I$	$1.68040 + 0.26806I$
$u = -0.533215 - 0.743878I$ $a = 1.068930 + 0.077579I$ $b = 0.512259 + 0.836519I$	$2.89664 - 0.46546I$	$1.68040 - 0.26806I$
$u = -0.174221 + 0.891733I$ $a = -1.045550 - 0.239887I$ $b = -0.396072 + 0.890557I$	$-2.36877 - 2.03117I$	$-4.15870 + 1.99602I$
$u = -0.174221 - 0.891733I$ $a = -1.045550 + 0.239887I$ $b = -0.396072 - 0.890557I$	$-2.36877 + 2.03117I$	$-4.15870 - 1.99602I$
$u = -0.993675 + 0.553218I$ $a = -0.840807 + 0.404017I$ $b = -0.611979 + 0.866611I$	$1.00519 + 4.10843I$	$-1.11851 - 6.27833I$
$u = -0.993675 - 0.553218I$ $a = -0.840807 - 0.404017I$ $b = -0.611979 - 0.866611I$	$1.00519 - 4.10843I$	$-1.11851 + 6.27833I$
$u = 0.377713 + 0.751230I$ $a = 0.598055 + 0.080621I$ $b = -0.165328 - 0.479728I$	$-0.38938 - 1.51803I$	$-2.55495 + 5.06805I$
$u = 0.377713 - 0.751230I$ $a = 0.598055 - 0.080621I$ $b = -0.165328 + 0.479728I$	$-0.38938 + 1.51803I$	$-2.55495 - 5.06805I$
$u = -1.23159 + 0.78729I$ $a = -1.036980 + 0.164410I$ $b = -1.14770 + 1.01889I$	$-4.12024 + 7.78492I$	$0. - 5.99189I$
$u = -1.23159 - 0.78729I$ $a = -1.036980 - 0.164410I$ $b = -1.14770 - 1.01889I$	$-4.12024 - 7.78492I$	$0. + 5.99189I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.40924 + 0.62053I$ $a = 0.902693 - 0.279351I$ $b = 1.09876 - 0.95382I$	$-11.42010 + 3.19049I$	0
$u = -1.40924 - 0.62053I$ $a = 0.902693 + 0.279351I$ $b = 1.09876 + 0.95382I$	$-11.42010 - 3.19049I$	0
$u = 0.405846 + 0.192100I$ $a = -1.56669 - 1.76693I$ $b = 0.296405 + 1.018060I$	$-5.03403 - 2.22778I$	$-7.47163 + 3.53534I$
$u = 0.405846 - 0.192100I$ $a = -1.56669 + 1.76693I$ $b = 0.296405 - 1.018060I$	$-5.03403 + 2.22778I$	$-7.47163 - 3.53534I$
$u = -1.22083 + 0.96772I$ $a = 1.004960 - 0.047355I$ $b = 1.18107 - 1.03033I$	$-4.3561 + 13.4943I$	0
$u = -1.22083 - 0.96772I$ $a = 1.004960 + 0.047355I$ $b = 1.18107 + 1.03033I$	$-4.3561 - 13.4943I$	0
$u = 0.009310 + 0.427042I$ $a = 2.26846 + 1.69136I$ $b = 0.701162 - 0.984473I$	$-4.65620 + 1.98203I$	$-8.58633 - 3.04801I$
$u = 0.009310 - 0.427042I$ $a = 2.26846 - 1.69136I$ $b = 0.701162 + 0.984473I$	$-4.65620 - 1.98203I$	$-8.58633 + 3.04801I$
$u = -1.27872 + 1.09142I$ $a = -0.946459 + 0.001404I$ $b = -1.20873 + 1.03478I$	$-11.5069 + 17.5600I$	0
$u = -1.27872 - 1.09142I$ $a = -0.946459 - 0.001404I$ $b = -1.20873 - 1.03478I$	$-11.5069 - 17.5600I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.290088$ $a = -2.49108$ $b = -0.722632$	-1.41973	-5.24450
$u = -1.84285 + 0.37896I$ $a = -0.221920 + 0.459486I$ $b = -0.234839 + 0.930861I$	$-0.10408 + 3.63440I$	0
$u = -1.84285 - 0.37896I$ $a = -0.221920 - 0.459486I$ $b = -0.234839 - 0.930861I$	$-0.10408 - 3.63440I$	0
$u = -0.97578 + 1.61172I$ $a = 0.037347 + 0.297762I$ $b = 0.516352 + 0.230358I$	$-2.86261 - 4.93654I$	0
$u = -0.97578 - 1.61172I$ $a = 0.037347 - 0.297762I$ $b = 0.516352 - 0.230358I$	$-2.86261 + 4.93654I$	0
$u = -1.81822 + 1.09987I$ $a = 0.375121 - 0.181419I$ $b = 0.482516 - 0.742445I$	$-8.14903 + 8.41158I$	0
$u = -1.81822 - 1.09987I$ $a = 0.375121 + 0.181419I$ $b = 0.482516 + 0.742445I$	$-8.14903 - 8.41158I$	0
$u = -1.66948 + 1.64303I$ $a = -0.180391 - 0.219962I$ $b = -0.662563 - 0.070835I$	$-10.73200 - 7.71685I$	0
$u = -1.66948 - 1.64303I$ $a = -0.180391 + 0.219962I$ $b = -0.662563 + 0.070835I$	$-10.73200 + 7.71685I$	0

II. $\boldsymbol{I_2^u = \langle -600u^{14}a^3 - 936u^{14}a^2 + \cdots - 1792a - 1217,\ 8u^{14}a^3 + 72u^{14}a^2 + \cdots + 218a + 237,\ u^{15} - 7u^{14} + \cdots + 3u - 2\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} a \\ 0.669643a^3u^{14} + 1.04464a^2u^{14} + \cdots + 2a + 1.35826 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -a^2u \\ -1.04464a^3u^{14} - 0.669643a^2u^{14} + \cdots + 6a + 1.00112 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.669643a^3u^{14} - 1.04464a^2u^{14} + \cdots - a - 1.35826 \\ 0.669643a^3u^{14} + 1.04464a^2u^{14} + \cdots + 2a + 1.35826 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.477679a^3u^{14} + 0.334821a^2u^{14} + \cdots - 2a + 0.499442 \\ -1.04464a^3u^{14} - 0.669643a^2u^{14} + \cdots + 6a + 0.00111607 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.821429a^3u^{14} + 0.321429a^2u^{14} + \cdots - 0.678571a^2 + 0.00446429 \\ 0.223214a^3u^{14} + 0.348214a^2u^{14} + \cdots - 6a - 1.00558 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.254464a^3u^{14} + 0.316964a^2u^{14} + \cdots - 0.683036a^2 + 0.506138 \\ -0.866071a^3u^{14} + 0.00892857a^2u^{14} + \cdots + 2.00893a^2 - 0.00334821 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.669643a^3u^{14} - 1.04464a^2u^{14} + \cdots - a - 1.35826 \\ 0.991071a^3u^{14} - 0.133929a^2u^{14} + \cdots + 4a + 1.92522 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.254464a^3u^{14} - 0.316964a^2u^{14} + \cdots - 3a - 0.506138 \\ -\frac{3}{8}u^{14}a^3 + \frac{3}{8}u^{14}a^2 + \cdots + 6a + \frac{63}{64} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.254464a^3u^{14} - 0.316964a^2u^{14} + \cdots - 3a - 0.506138 \\ -\frac{3}{8}u^{14}a^3 + \frac{3}{8}u^{14}a^2 + \cdots + 6a + \frac{63}{64} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{117}{28}u^{14}a^3 + \frac{75}{28}u^{14}a^2 + \cdots - 24a - \frac{7393}{224}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^2+u+1)^{30}$
c_2	$(u^{15}+7u^{14}+\cdots+3u+2)^4$
c_3, c_6	$u^{60}+3u^{59}+\cdots+5800u+1951$
c_4, c_8	$u^{60}+17u^{58}+\cdots+63147u+112777$
c_5, c_9	$u^{60}-9u^{58}+\cdots+5u+1$
c_7, c_{10}, c_{11}	$(u^{15}-2u^{14}+\cdots+2u-1)^4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^2+y+1)^{30}$
c_2	$(y^{15}-3y^{14}+\cdots+37y-4)^4$
c_3, c_6	$y^{60}-31y^{59}+\cdots-116686266y+3806401$
c_4, c_8	$y^{60}+34y^{59}+\cdots+352063429739y+12718651729$
c_5, c_9	$y^{60}-18y^{59}+\cdots+27y+1$
c_7, c_{10}, c_{11}	$(y^{15}-16y^{14}+\cdots+10y-1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.602091 + 0.799295I$ $a = 0.967192 + 0.023712I$ $b = 1.46023 + 0.91520I$	$-0.38534 - 5.63362I$	$-2.44329 + 10.98878I$
$u = 0.602091 + 0.799295I$ $a = 0.731075 + 0.157864I$ $b = -0.023707 - 0.161225I$	$-0.38534 - 1.57385I$	$-2.44329 + 4.06057I$
$u = 0.602091 + 0.799295I$ $a = -1.60848 + 0.61527I$ $b = -0.563384 - 0.787348I$	$-0.38534 - 5.63362I$	$-2.44329 + 10.98878I$
$u = 0.602091 + 0.799295I$ $a = 0.142942 + 0.078015I$ $b = -0.313994 - 0.679393I$	$-0.38534 - 1.57385I$	$-2.44329 + 4.06057I$
$u = 0.602091 - 0.799295I$ $a = 0.967192 - 0.023712I$ $b = 1.46023 - 0.91520I$	$-0.38534 + 5.63362I$	$-2.44329 - 10.98878I$
$u = 0.602091 - 0.799295I$ $a = 0.731075 - 0.157864I$ $b = -0.023707 + 0.161225I$	$-0.38534 + 1.57385I$	$-2.44329 - 4.06057I$
$u = 0.602091 - 0.799295I$ $a = -1.60848 - 0.61527I$ $b = -0.563384 + 0.787348I$	$-0.38534 + 5.63362I$	$-2.44329 - 10.98878I$
$u = 0.602091 - 0.799295I$ $a = 0.142942 - 0.078015I$ $b = -0.313994 + 0.679393I$	$-0.38534 + 1.57385I$	$-2.44329 - 4.06057I$
$u = -0.754169 + 0.212783I$ $a = -0.910516 + 0.108757I$ $b = -1.26285 - 1.50931I$	$-10.63760 + 8.63903I$	$-15.1406 - 9.1585I$
$u = -0.754169 + 0.212783I$ $a = 1.194270 + 0.576398I$ $b = 1.00815 - 1.23211I$	$-10.63760 + 4.57927I$	$-15.1406 - 2.2303I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.754169 + 0.212783I$ $a = 1.66516 - 1.16392I$ $b = 1.023330 + 0.180581I$	$-10.63760 + 4.57927I$	$-15.1406 - 2.2303I$
$u = -0.754169 + 0.212783I$ $a = -1.02801 - 2.29134I$ $b = -0.663541 + 0.275764I$	$-10.63760 + 8.63903I$	$-15.1406 - 9.1585I$
$u = -0.754169 - 0.212783I$ $a = -0.910516 - 0.108757I$ $b = -1.26285 + 1.50931I$	$-10.63760 - 8.63903I$	$-15.1406 + 9.1585I$
$u = -0.754169 - 0.212783I$ $a = 1.194270 - 0.576398I$ $b = 1.00815 + 1.23211I$	$-10.63760 - 4.57927I$	$-15.1406 + 2.2303I$
$u = -0.754169 - 0.212783I$ $a = 1.66516 + 1.16392I$ $b = 1.023330 - 0.180581I$	$-10.63760 - 4.57927I$	$-15.1406 + 2.2303I$
$u = -0.754169 - 0.212783I$ $a = -1.02801 + 2.29134I$ $b = -0.663541 - 0.275764I$	$-10.63760 - 8.63903I$	$-15.1406 + 9.1585I$
$u = 0.671611 + 0.294946I$ $a = -0.839523 - 0.242865I$ $b = -1.36585 - 1.21898I$	$-2.26591 - 2.26892I$	$-13.6402 + 6.9635I$
$u = 0.671611 + 0.294946I$ $a = -0.467370 + 0.332502I$ $b = -0.67510 + 1.24619I$	$-2.26591 + 1.79084I$	$-13.64024 + 0.03534I$
$u = 0.671611 + 0.294946I$ $a = 0.15954 - 1.92560I$ $b = 0.411961 - 0.085463I$	$-2.26591 + 1.79084I$	$-13.64024 + 0.03534I$
$u = 0.671611 + 0.294946I$ $a = 2.37310 + 0.77283I$ $b = 0.492201 + 0.410725I$	$-2.26591 - 2.26892I$	$-13.6402 + 6.9635I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.671611 - 0.294946I$ $a = -0.839523 + 0.242865I$ $b = -1.36585 + 1.21898I$	$-2.26591 + 2.26892I$	$-13.6402 - 6.9635I$
$u = 0.671611 - 0.294946I$ $a = -0.467370 - 0.332502I$ $b = -0.67510 - 1.24619I$	$-2.26591 - 1.79084I$	$-13.64024 - 0.03534I$
$u = 0.671611 - 0.294946I$ $a = 0.15954 + 1.92560I$ $b = 0.411961 + 0.085463I$	$-2.26591 - 1.79084I$	$-13.64024 - 0.03534I$
$u = 0.671611 - 0.294946I$ $a = 2.37310 - 0.77283I$ $b = 0.492201 - 0.410725I$	$-2.26591 + 2.26892I$	$-13.6402 - 6.9635I$
$u = 0.581967 + 1.140370I$ $a = -0.962013 + 0.055914I$ $b = -1.43681 - 0.76472I$	$-5.74830 - 8.10302I$	$-7.68774 + 10.38587I$
$u = 0.581967 + 1.140370I$ $a = -0.797951 + 0.360993I$ $b = -0.209830 - 0.145532I$	$-5.74830 - 4.04325I$	$-7.68774 + 3.45767I$
$u = 0.581967 + 1.140370I$ $a = 1.042160 - 0.728098I$ $b = 0.623622 + 1.064510I$	$-5.74830 - 8.10302I$	$-7.68774 + 10.38587I$
$u = 0.581967 + 1.140370I$ $a = 0.175748 - 0.094312I$ $b = 0.876048 + 0.699876I$	$-5.74830 - 4.04325I$	$-7.68774 + 3.45767I$
$u = 0.581967 - 1.140370I$ $a = -0.962013 - 0.055914I$ $b = -1.43681 + 0.76472I$	$-5.74830 + 8.10302I$	$-7.68774 - 10.38587I$
$u = 0.581967 - 1.140370I$ $a = -0.797951 - 0.360993I$ $b = -0.209830 + 0.145532I$	$-5.74830 + 4.04325I$	$-7.68774 - 3.45767I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.581967 - 1.140370I$ $a = 1.042160 + 0.728098I$ $b = 0.623622 - 1.064510I$	$-5.74830 + 8.10302I$	$-7.68774 - 10.38587I$
$u = 0.581967 - 1.140370I$ $a = 0.175748 + 0.094312I$ $b = 0.876048 - 0.699876I$	$-5.74830 + 4.04325I$	$-7.68774 - 3.45767I$
$u = -0.643976 + 0.089739I$ $a = 1.093330 - 0.083941I$ $b = 1.33517 + 1.40617I$	$-3.68331 + 4.69916I$	$-15.6538 - 8.3078I$
$u = -0.643976 + 0.089739I$ $a = -1.303550 - 0.278242I$ $b = -1.23743 + 1.19471I$	$-3.68331 + 0.63939I$	$-15.6538 - 1.3796I$
$u = -0.643976 + 0.089739I$ $a = -2.13854 + 1.55720I$ $b = -0.864422 - 0.062203I$	$-3.68331 + 0.63939I$	$-15.6538 - 1.3796I$
$u = -0.643976 + 0.089739I$ $a = 1.73533 + 2.42540I$ $b = 0.696542 - 0.152170I$	$-3.68331 + 4.69916I$	$-15.6538 - 8.3078I$
$u = -0.643976 - 0.089739I$ $a = 1.093330 + 0.083941I$ $b = 1.33517 - 1.40617I$	$-3.68331 - 4.69916I$	$-15.6538 + 8.3078I$
$u = -0.643976 - 0.089739I$ $a = -1.303550 + 0.278242I$ $b = -1.23743 - 1.19471I$	$-3.68331 - 0.63939I$	$-15.6538 + 1.3796I$
$u = -0.643976 - 0.089739I$ $a = -2.13854 - 1.55720I$ $b = -0.864422 + 0.062203I$	$-3.68331 - 0.63939I$	$-15.6538 + 1.3796I$
$u = -0.643976 - 0.089739I$ $a = 1.73533 - 2.42540I$ $b = 0.696542 + 0.152170I$	$-3.68331 - 4.69916I$	$-15.6538 + 8.3078I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.36997$ $a = -0.907521 + 0.663747I$ $b = -0.787791 + 0.120392I$	$-10.12450 + 2.02988I$	$-16.2012 - 3.4641I$
$u = 1.36997$ $a = -0.907521 - 0.663747I$ $b = -0.787791 - 0.120392I$	$-10.12450 - 2.02988I$	$-16.2012 + 3.4641I$
$u = 1.36997$ $a = 0.575044 + 0.087879I$ $b = 1.24327 + 0.90931I$	$-10.12450 - 2.02988I$	$-16.2012 + 3.4641I$
$u = 1.36997$ $a = 0.575044 - 0.087879I$ $b = 1.24327 - 0.90931I$	$-10.12450 + 2.02988I$	$-16.2012 - 3.4641I$
$u = 1.07833 + 1.02126I$ $a = 1.015230 - 0.027169I$ $b = 1.121120 + 0.675049I$	$-3.06065 - 5.93358I$	$-16.3852 + 11.3606I$
$u = 1.07833 + 1.02126I$ $a = -0.860624 + 0.189066I$ $b = -1.12250 - 1.00752I$	$-3.06065 - 5.93358I$	$-16.3852 + 11.3606I$
$u = 1.07833 + 1.02126I$ $a = 0.449088 - 0.424366I$ $b = 0.630413 + 0.168459I$	$-3.06065 - 1.87382I$	$-16.3852 + 4.4324I$
$u = 1.07833 + 1.02126I$ $a = -0.386184 + 0.209525I$ $b = -0.917652 - 0.001032I$	$-3.06065 - 1.87382I$	$-16.3852 + 4.4324I$
$u = 1.07833 - 1.02126I$ $a = 1.015230 + 0.027169I$ $b = 1.121120 - 0.675049I$	$-3.06065 + 5.93358I$	$-16.3852 - 11.3606I$
$u = 1.07833 - 1.02126I$ $a = -0.860624 - 0.189066I$ $b = -1.12250 + 1.00752I$	$-3.06065 + 5.93358I$	$-16.3852 - 11.3606I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.07833 - 1.02126I$ $a = 0.449088 + 0.424366I$ $b = 0.630413 - 0.168459I$	$-3.06065 + 1.87382I$	$-16.3852 - 4.4324I$
$u = 1.07833 - 1.02126I$ $a = -0.386184 - 0.209525I$ $b = -0.917652 + 0.001032I$	$-3.06065 + 1.87382I$	$-16.3852 - 4.4324I$
$u = 1.27917 + 1.11829I$ $a = -0.961483 - 0.056576I$ $b = -1.189770 - 0.530548I$	$-9.45761 - 6.57584I$	$-15.4486 + 8.3893I$
$u = 1.27917 + 1.11829I$ $a = 0.732710 - 0.225798I$ $b = 1.16663 + 1.14759I$	$-9.45761 - 6.57584I$	$-15.4486 + 8.3893I$
$u = 1.27917 + 1.11829I$ $a = -0.508257 + 0.483174I$ $b = -0.644536 - 0.238801I$	$-9.45761 - 2.51607I$	$-15.4486 + 1.4611I$
$u = 1.27917 + 1.11829I$ $a = 0.378101 - 0.143864I$ $b = 1.190480 - 0.049682I$	$-9.45761 - 2.51607I$	$-15.4486 + 1.4611I$
$u = 1.27917 - 1.11829I$ $a = -0.961483 + 0.056576I$ $b = -1.189770 + 0.530548I$	$-9.45761 + 6.57584I$	$-15.4486 - 8.3893I$
$u = 1.27917 - 1.11829I$ $a = 0.732710 + 0.225798I$ $b = 1.16663 - 1.14759I$	$-9.45761 + 6.57584I$	$-15.4486 - 8.3893I$
$u = 1.27917 - 1.11829I$ $a = -0.508257 - 0.483174I$ $b = -0.644536 + 0.238801I$	$-9.45761 + 2.51607I$	$-15.4486 - 1.4611I$
$u = 1.27917 - 1.11829I$ $a = 0.378101 + 0.143864I$ $b = 1.190480 + 0.049682I$	$-9.45761 + 2.51607I$	$-15.4486 - 1.4611I$

III. $\boldsymbol{I_3^u =}$
$\boldsymbol{\langle -2.32\times 10^5 u^{14} + 1.84\times 10^6 u^{13} + \cdots + 8.09\times 10^5 b - 1.81\times 10^6,\ -3.63\times 10^5 u^{14} + 2.47\times 10^6 u^{13} + \cdots + 4.04\times 10^6 a + 9.07\times 10^6,\ u^{15} - 10u^{14} + \cdots + 105u - 25\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.0896763u^{14} - 0.610245u^{13} + \cdots + 1.19544u - 2.24235 \\ 0.286518u^{14} - 2.27740u^{13} + \cdots - 11.6584u + 2.24191 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.0634041u^{14} + 0.785474u^{13} + \cdots + 18.1892u - 7.38808 \\ 0.151433u^{14} - 1.22656u^{13} + \cdots + 0.269354u - 1.58510 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.196842u^{14} + 1.66715u^{13} + \cdots + 12.8538u - 4.48425 \\ 0.286518u^{14} - 2.27740u^{13} + \cdots - 11.6584u + 2.24191 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.0471991u^{14} + 0.401388u^{13} + \cdots - 3.38516u + 3.00810 \\ 0.217171u^{14} - 1.82237u^{13} + \cdots - 10.5216u + 2.60585 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.0784959u^{14} + 0.629353u^{13} + \cdots + 2.16490u - 0.432050 \\ -0.136341u^{14} + 1.38268u^{13} + \cdots + 17.7549u - 5.37093 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.0557345u^{14} - 0.347574u^{13} + \cdots + 4.78295u - 3.26033 \\ -0.102577u^{14} + 0.766448u^{13} + \cdots + 3.70070u - 1.06673 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.390944u^{14} - 3.21782u^{13} + \cdots - 14.9887u + 2.67870 \\ 0.631661u^{14} - 5.74144u^{13} + \cdots - 46.6622u + 12.3694 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.252441u^{14} + 2.08510u^{13} + \cdots + 10.5167u - 2.17291 \\ -0.417515u^{14} + 3.68088u^{13} + \cdots + 30.7038u - 9.58932 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.252441u^{14} + 2.08510u^{13} + \cdots + 10.5167u - 2.17291 \\ -0.417515u^{14} + 3.68088u^{13} + \cdots + 30.7038u - 9.58932 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{18347}{808985}u^{14} - \frac{110489}{161797}u^{13} + \cdots - \frac{11086343}{808985}u - \frac{1503188}{161797}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{15} - 5u^{14} + \cdots + 5u - 1$
c_2	$u^{15} - 10u^{14} + \cdots + 105u - 25$
c_3, c_6	$u^{15} + 4u^{14} + \cdots + 6u + 1$
c_4, c_8	$u^{15} + 4u^{13} + \cdots + 4u - 1$
c_5, c_9	$u^{15} + u^{14} + \cdots - 2u^2 + 1$
c_7	$u^{15} + 4u^{14} + \cdots + 4u + 1$
c_{10}, c_{11}	$u^{15} - 4u^{14} + \cdots + 4u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{15} - 7y^{14} + \cdots + 3y - 1$
c_2	$y^{15} - 10y^{14} + \cdots + 1225y - 625$
c_3, c_6	$y^{15} - 8y^{14} + \cdots + 10y - 1$
c_4, c_8	$y^{15} + 8y^{14} + \cdots - 6y - 1$
c_5, c_9	$y^{15} - 5y^{14} + \cdots + 4y - 1$
c_7, c_{10}, c_{11}	$y^{15} - 16y^{14} + \cdots + 4y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.993740 + 0.424598I$ $a = 0.556645 - 0.290398I$ $b = -0.429858 + 0.524931I$	$-9.75332 - 7.47692I$	$-9.95866 + 4.06635I$
$u = -0.993740 - 0.424598I$ $a = 0.556645 + 0.290398I$ $b = -0.429858 - 0.524931I$	$-9.75332 + 7.47692I$	$-9.95866 - 4.06635I$
$u = -0.342459 + 0.777675I$ $a = -0.626853 - 0.459197I$ $b = 0.571778 - 0.330232I$	$-2.51489 - 4.15156I$	$-7.90898 + 4.64816I$
$u = -0.342459 - 0.777675I$ $a = -0.626853 + 0.459197I$ $b = 0.571778 + 0.330232I$	$-2.51489 + 4.15156I$	$-7.90898 - 4.64816I$
$u = 0.693947 + 0.386253I$ $a = -0.953726 + 0.652169I$ $b = -0.913738 + 0.084191I$	$-2.48193 - 0.47503I$	$-11.90735 + 0.90266I$
$u = 0.693947 - 0.386253I$ $a = -0.953726 - 0.652169I$ $b = -0.913738 - 0.084191I$	$-2.48193 + 0.47503I$	$-11.90735 - 0.90266I$
$u = 0.789581 + 1.095750I$ $a = 1.006360 - 0.300538I$ $b = 1.12392 + 0.86542I$	$-6.71287 - 6.73017I$	$-11.94424 + 5.36549I$
$u = 0.789581 - 1.095750I$ $a = 1.006360 + 0.300538I$ $b = 1.12392 - 0.86542I$	$-6.71287 + 6.73017I$	$-11.94424 - 5.36549I$
$u = 1.020310 + 0.946886I$ $a = -0.990350 + 0.084939I$ $b = -1.090890 - 0.851084I$	$-2.45761 - 5.54387I$	$-4.63100 + 3.66871I$
$u = 1.020310 - 0.946886I$ $a = -0.990350 - 0.084939I$ $b = -1.090890 + 0.851084I$	$-2.45761 + 5.54387I$	$-4.63100 - 3.66871I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.46936$ $a = 0.734892$ $b = 1.07982$	-10.0492	-16.2980
$u = 1.36954 + 1.00006I$ $a = 0.746523 - 0.031553I$ $b = 1.053950 + 0.703353I$	$-8.96044 - 5.01992I$	$-12.46416 + 4.02360I$
$u = 1.36954 - 1.00006I$ $a = 0.746523 + 0.031553I$ $b = 1.053950 - 0.703353I$	$-8.96044 + 5.01992I$	$-12.46416 - 4.02360I$
$u = 1.72814 + 0.40102I$ $a = -0.306044 - 0.433458I$ $b = -0.355064 - 0.871805I$	$0.07214 - 3.29542I$	$-1.53653 - 2.69469I$
$u = 1.72814 - 0.40102I$ $a = -0.306044 + 0.433458I$ $b = -0.355064 + 0.871805I$	$0.07214 + 3.29542I$	$-1.53653 + 2.69469I$

IV. $I_1^v = \langle a,\ b^2 - bv + 2b - v + 3,\ v^2 - 3v + 1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ b \end{pmatrix}$$
$$a_6 = \begin{pmatrix} v \\ bv - b - 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -b \\ b \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 2bv - b - v + 1 \\ -bv + b \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -bv + b + v + 1 \\ bv - b - 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -2bv + b + v - 1 \\ bv - b \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -b \\ b \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 2bv - 2b - v + 1 \\ -bv + 2b \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 2bv - 2b - v + 1 \\ -bv + 2b \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4bv - 4b - 3$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_6	$(y^2 + y + 1)^2$
c_2	y^4
c_4, c_5, c_8 c_9	$y^4 + 3y^3 + 8y^2 + 3y + 1$
c_7, c_{10}, c_{11}	$(y - 1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 0.381966$ $a = 0$ $b = -0.80902 + 1.40126I$	$-1.64493 + 2.02988I$	$-1.0000 - 3.46410I$
$v = 0.381966$ $a = 0$ $b = -0.80902 - 1.40126I$	$-1.64493 - 2.02988I$	$-1.0000 + 3.46410I$
$v = 2.61803$ $a = 0$ $b = 0.309017 + 0.535233I$	$-1.64493 - 2.02988I$	$-1.0000 + 3.46410I$
$v = 2.61803$ $a = 0$ $b = 0.309017 - 0.535233I$	$-1.64493 + 2.02988I$	$-1.0000 - 3.46410I$

V. $I_2^v = \langle a,\ b^2 + b + 1,\ v - 1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

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

$$a_{10} = \begin{pmatrix} -b \\ b \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -b \\ b \end{pmatrix}$$

$$a_4 = \begin{pmatrix} b + 2 \\ -b - 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} b \\ -b \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -b \\ b \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -b \\ b \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -b \\ b \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4b - 2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 1.00000$ $a = 0$ $b = -0.500000 + 0.866025I$	$2.02988I$	$0. - 3.46410I$
$v = 1.00000$ $a = 0$ $b = -0.500000 - 0.866025I$	$-2.02988I$	$0. + 3.46410I$

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^2-u+1)(u^2+u+1)^{32}(u^{15}-5u^{14}+\cdots+5u-1)$ $\cdot(u^{29}-29u^{28}+\cdots-131072u+16384)$
c_2	$u^6(u^{15}-10u^{14}+\cdots+105u-25)(u^{15}+7u^{14}+\cdots+3u+2)^4$ $\cdot(u^{29}-25u^{28}+\cdots+638u-73)$
c_3, c_6	$((u^2+u+1)^3)(u^{15}+4u^{14}+\cdots+6u+1)(u^{29}-u^{28}+\cdots+17u+1)$ $\cdot(u^{60}+3u^{59}+\cdots+5800u+1951)$
c_4, c_8	$(u^2+u+1)(u^4-u^3+2u^2+u+1)(u^{15}+4u^{13}+\cdots+4u-1)$ $\cdot(u^{29}-u^{28}+\cdots+21u+9)(u^{60}+17u^{58}+\cdots+63147u+112777)$
c_5, c_9	$(u^2+u+1)(u^4-u^3+2u^2+u+1)(u^{15}+u^{14}+\cdots-2u^2+1)$ $\cdot(u^{29}+2u^{27}+\cdots+u+1)(u^{60}-9u^{58}+\cdots+5u+1)$
c_7	$u^2(u-1)^4(u^{15}-2u^{14}+\cdots+2u-1)^4(u^{15}+4u^{14}+\cdots+4u+1)$ $\cdot(u^{29}+9u^{28}+\cdots+49u+73)$
c_{10}, c_{11}	$u^2(u+1)^4(u^{15}-4u^{14}+\cdots+4u-1)(u^{15}-2u^{14}+\cdots+2u-1)^4$ $\cdot(u^{29}+9u^{28}+\cdots+49u+73)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^2+y+1)^{33})(y^{15}-7y^{14}+\cdots+3y-1)$ $\cdot\,(y^{29}-7y^{28}+\cdots+5100273664y-268435456)$
c_2	$y^6(y^{15}-10y^{14}+\cdots+1225y-625)(y^{15}-3y^{14}+\cdots+37y-4)^4$ $\cdot\,(y^{29}-13y^{28}+\cdots+27006y-5329)$
c_3, c_6	$((y^2+y+1)^3)(y^{15}-8y^{14}+\cdots+10y-1)(y^{29}-7y^{28}+\cdots+235y-1)$ $\cdot\,(y^{60}-31y^{59}+\cdots-116686266y+3806401)$
c_4, c_8	$(y^2+y+1)(y^4+3y^3+\cdots+3y+1)(y^{15}+8y^{14}+\cdots-6y-1)$ $\cdot\,(y^{29}+17y^{28}+\cdots-225y-81)$ $\cdot\,(y^{60}+34y^{59}+\cdots+352063429739y+12718651729)$
c_5, c_9	$(y^2+y+1)(y^4+3y^3+\cdots+3y+1)(y^{15}-5y^{14}+\cdots+4y-1)$ $\cdot\,(y^{29}+4y^{28}+\cdots-3y-1)(y^{60}-18y^{59}+\cdots+27y+1)$
c_7, c_{10}, c_{11}	$y^2(y-1)^4(y^{15}-16y^{14}+\cdots+10y-1)^4(y^{15}-16y^{14}+\cdots+4y-1)$ $\cdot\,(y^{29}-31y^{28}+\cdots-8987y-5329)$