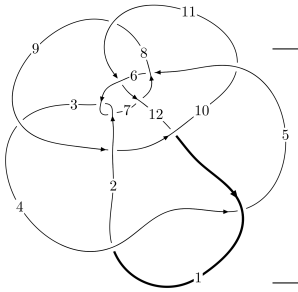
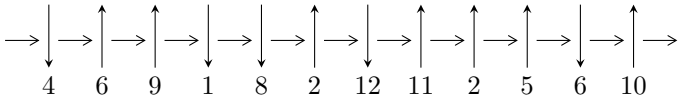
$12n_{0857}$ $(K12n_{0857})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -2.54221 \times 10^{715} u^{109} + 1.88993 \times 10^{715} u^{108} + \cdots + 2.43228 \times 10^{719} b - 1.89889 \times 10^{720},$$
$$- 5.21983 \times 10^{720} u^{109} + 3.53329 \times 10^{720} u^{108} + \cdots + 2.79846 \times 10^{724} a - 6.69018 \times 10^{725},$$
$$u^{110} - u^{109} + \cdots + 158844u - 23011 \rangle$$
$$I_2^u = \langle -1.69300 \times 10^{47} u^{40} + 1.74572 \times 10^{46} u^{39} + \cdots + 3.46916 \times 10^{46} b - 4.11027 \times 10^{46},$$
$$- 1.42407 \times 10^{47} u^{40} + 2.07337 \times 10^{46} u^{39} + \cdots + 3.46916 \times 10^{46} a - 2.12701 \times 10^{46},\ u^{41} - 6u^{39} + \cdots + u -$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 151 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. $\boldsymbol{I_1^u = \langle -2.54 \times 10^{715} u^{109} + 1.89 \times 10^{715} u^{108} + \cdots + 2.43 \times 10^{719} b - 1.90 \times 10^{720},\ -5.22 \times 10^{720} u^{109} + 3.53 \times 10^{720} u^{108} + \cdots + 2.80 \times 10^{724} a - 6.69 \times 10^{725},\ u^{110} - u^{109} + \cdots + 158844u - 23011 \rangle}$

(i) Arc colorings

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

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

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

$$a_7 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.000186525u^{109} - 0.000126258u^{108} + \cdots - 86.7680u + 23.9067 \\ 0.000104520u^{109} - 0.0000777021u^{108} + \cdots - 22.7251u + 7.80705 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.000187611u^{109} - 0.000113060u^{108} + \cdots - 7.21058u + 4.09697 \\ -0.0000441421u^{109} + 0.0000112573u^{108} + \cdots + 24.8025u - 4.20354 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.000353843u^{109} - 0.000263570u^{108} + \cdots - 154.257u + 32.4618 \\ 0.0000988927u^{109} - 0.0000682856u^{108} + \cdots - 26.1513u + 8.57675 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.000186525u^{109} - 0.000126258u^{108} + \cdots - 86.7680u + 23.9067 \\ 0.000103255u^{109} - 0.0000818589u^{108} + \cdots - 17.4442u + 6.42025 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.000258536u^{109} + 0.000209102u^{108} + \cdots + 120.512u - 25.4063 \\ 0.0000986832u^{109} - 0.0000625693u^{108} + \cdots - 35.6479u + 8.19303 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.000159884u^{109} + 0.0000964328u^{108} + \cdots + 92.8382u - 16.6342 \\ 0.000138065u^{109} - 0.0000904983u^{108} + \cdots - 51.6830u + 12.8395 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0000566483u^{109} - 0.0000528472u^{108} + \cdots + 52.8264u - 5.41832 \\ -0.0000756289u^{109} + 0.0000417867u^{108} + \cdots + 25.4750u - 5.64856 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.000159853u^{109} + 0.000146533u^{108} + \cdots + 84.8642u - 17.2133 \\ 0.0000986832u^{109} - 0.0000625693u^{108} + \cdots - 35.6479u + 8.19303 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.000468187u^{109} - 0.000486994u^{108} + \cdots - 109.891u + 53.5401$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{110} - 5u^{109} + \cdots - 655u + 27$
c_2, c_6	$u^{110} - u^{109} + \cdots + 158844u - 23011$
c_3	$u^{110} + u^{109} + \cdots - 27299702743u - 7633881929$
c_5	$u^{110} - 7u^{109} + \cdots + 32u - 1$
c_7	$u^{110} + 25u^{108} + \cdots + 2741658038u - 256908883$
c_8	$u^{110} - 6u^{109} + \cdots - 132u - 121$
c_9	$u^{110} - 27u^{108} + \cdots - 348627733u - 55663493$
c_{10}	$u^{110} + 4u^{109} + \cdots + 979761921u + 106831211$
c_{11}	$u^{110} + 18u^{108} + \cdots + 1919803u - 465261$
c_{12}	$u^{110} - 5u^{109} + \cdots - 1146282u + 43209$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{110} + 77y^{109} + \cdots + 13397y + 729$
c_2, c_6	$y^{110} - 93y^{109} + \cdots - 21526553292y + 529506121$
c_3	$y^{110} - 71y^{109} + \cdots - 1.44 \times 10^{21}y + 5.83 \times 10^{19}$
c_5	$y^{110} - 3y^{109} + \cdots - 512y + 1$
c_7	$y^{110} + 50y^{109} + \cdots + 1760931224300394538y + 66002174164307689$
c_8	$y^{110} - 40y^{109} + \cdots - 2526964y + 14641$
c_9	$y^{110} - 54y^{109} + \cdots - 28826776772721039y + 3098424452961049$
c_{10}	$y^{110} - 64y^{109} + \cdots - 562423846261318061y + 11412907643726521$
c_{11}	$y^{110} + 36y^{109} + \cdots + 4003166674991y + 216467798121$
c_{12}	$y^{110} - 47y^{109} + \cdots - 179416969920y + 1867017681$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.273687 + 0.960931I$ $a = -0.484952 - 0.110282I$ $b = -0.672250 + 0.036578I$	$-1.25797 + 2.48843I$	0
$u = 0.273687 - 0.960931I$ $a = -0.484952 + 0.110282I$ $b = -0.672250 - 0.036578I$	$-1.25797 - 2.48843I$	0
$u = -0.628229 + 0.798712I$ $a = 0.106648 - 0.367235I$ $b = 0.966418 - 0.567381I$	$3.01685 - 6.24146I$	0
$u = -0.628229 - 0.798712I$ $a = 0.106648 + 0.367235I$ $b = 0.966418 + 0.567381I$	$3.01685 + 6.24146I$	0
$u = 0.309362 + 1.089710I$ $a = 1.377220 + 0.050662I$ $b = 0.810992 + 0.253927I$	$-0.052815 + 0.890393I$	0
$u = 0.309362 - 1.089710I$ $a = 1.377220 - 0.050662I$ $b = 0.810992 - 0.253927I$	$-0.052815 - 0.890393I$	0
$u = -0.519325 + 1.066280I$ $a = -0.057017 - 0.852253I$ $b = -0.46239 - 2.81094I$	$-3.52164 - 4.49508I$	0
$u = -0.519325 - 1.066280I$ $a = -0.057017 + 0.852253I$ $b = -0.46239 + 2.81094I$	$-3.52164 + 4.49508I$	0
$u = -1.188430 + 0.109656I$ $a = -0.438712 - 0.382941I$ $b = -0.39352 - 1.51795I$	$4.27455 - 2.98496I$	0
$u = -1.188430 - 0.109656I$ $a = -0.438712 + 0.382941I$ $b = -0.39352 + 1.51795I$	$4.27455 + 2.98496I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.19475$ $a = 0.698115$ $b = -0.692490$	2.41722	0
$u = -0.350801 + 1.145200I$ $a = 0.721107 + 0.526114I$ $b = 0.321582 + 0.283145I$	$1.25954 - 1.01418I$	0
$u = -0.350801 - 1.145200I$ $a = 0.721107 - 0.526114I$ $b = 0.321582 - 0.283145I$	$1.25954 + 1.01418I$	0
$u = 0.352012 + 0.720308I$ $a = 0.671585 + 0.861831I$ $b = 0.215301 + 0.803589I$	$-0.03040 + 1.50146I$	0
$u = 0.352012 - 0.720308I$ $a = 0.671585 - 0.861831I$ $b = 0.215301 - 0.803589I$	$-0.03040 - 1.50146I$	0
$u = 1.202730 + 0.073671I$ $a = 0.109956 - 1.074730I$ $b = -0.41368 - 1.96448I$	$8.55511 + 2.52577I$	0
$u = 1.202730 - 0.073671I$ $a = 0.109956 + 1.074730I$ $b = -0.41368 + 1.96448I$	$8.55511 - 2.52577I$	0
$u = 0.679200 + 1.040770I$ $a = -0.95062 + 1.26584I$ $b = -0.41692 + 1.85804I$	$1.08954 + 3.61356I$	0
$u = 0.679200 - 1.040770I$ $a = -0.95062 - 1.26584I$ $b = -0.41692 - 1.85804I$	$1.08954 - 3.61356I$	0
$u = -1.225580 + 0.281346I$ $a = -0.128470 - 0.754923I$ $b = 0.53589 - 1.63052I$	$5.08737 - 2.56905I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.225580-0.281346I$ $a=-0.128470+0.754923I$ $b=\ \ 0.53589+1.63052I$	$5.08737+2.56905I$	0
$u=\ \ 0.177944+0.720155I$ $a=\ \ 0.015350-0.782987I$ $b=-0.293615+1.122800I$	$-2.19476+3.25041I$	$8.84179-7.27756I$
$u=\ \ 0.177944-0.720155I$ $a=\ \ 0.015350+0.782987I$ $b=-0.293615-1.122800I$	$-2.19476-3.25041I$	$8.84179+7.27756I$
$u=-1.300390+0.176577I$ $a=-0.621735-0.676303I$ $b=\ \ 0.216071-1.352320I$	$5.42545-4.17336I$	0
$u=-1.300390-0.176577I$ $a=-0.621735+0.676303I$ $b=\ \ 0.216071+1.352320I$	$5.42545+4.17336I$	0
$u=\ \ 1.301090+0.191030I$ $a=\ \ 0.534422-0.659624I$ $b=\ \ 0.55111-1.66214I$	$4.67133+2.81915I$	0
$u=\ \ 1.301090-0.191030I$ $a=\ \ 0.534422+0.659624I$ $b=\ \ 0.55111+1.66214I$	$4.67133-2.81915I$	0
$u=\ \ 0.157675+1.316790I$ $a=-0.897453+0.369873I$ $b=-0.439787+0.353356I$	$0.08563+2.03639I$	0
$u=\ \ 0.157675-1.316790I$ $a=-0.897453-0.369873I$ $b=-0.439787-0.353356I$	$0.08563-2.03639I$	0
$u=-1.288940+0.356178I$ $a=\ \ 0.51990+1.32223I$ $b=\ \ 0.53882+2.17669I$	$9.28751-3.25110I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.288940-0.356178I$ $a=0.51990-1.32223I$ $b=0.53882-2.17669I$	$9.28751+3.25110I$	0
$u=0.530803+0.358746I$ $a=-1.32896+1.23903I$ $b=0.061470+0.322537I$	$-0.312510-0.746087I$	$3.82156-0.88435I$
$u=0.530803-0.358746I$ $a=-1.32896-1.23903I$ $b=0.061470-0.322537I$	$-0.312510+0.746087I$	$3.82156+0.88435I$
$u=-0.022768+0.635447I$ $a=0.78042+1.18749I$ $b=-0.392753+0.900980I$	$-0.17291+1.59043I$	$-0.61220-5.93494I$
$u=-0.022768-0.635447I$ $a=0.78042-1.18749I$ $b=-0.392753-0.900980I$	$-0.17291-1.59043I$	$-0.61220+5.93494I$
$u=-1.374950+0.125591I$ $a=-0.127642-0.477675I$ $b=-0.13427-2.13580I$	$4.21176-3.87768I$	0
$u=-1.374950-0.125591I$ $a=-0.127642+0.477675I$ $b=-0.13427+2.13580I$	$4.21176+3.87768I$	0
$u=1.399420+0.163644I$ $a=-0.736788+1.118710I$ $b=-0.78460+1.94025I$	$9.14891+7.01170I$	0
$u=1.399420-0.163644I$ $a=-0.736788-1.118710I$ $b=-0.78460-1.94025I$	$9.14891-7.01170I$	0
$u=0.522659+0.216699I$ $a=0.953268+1.043640I$ $b=1.162230+0.437088I$	$-0.00845+1.94695I$	$4.55502-2.39627I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.522659 - 0.216699I$ $a = 0.953268 - 1.043640I$ $b = 1.162230 - 0.437088I$	$-0.00845 - 1.94695I$	$4.55502 + 2.39627I$
$u = 1.37104 + 0.48392I$ $a = 0.125909 - 0.673054I$ $b = -0.46115 - 1.43967I$	$9.03260 + 4.08006I$	0
$u = 1.37104 - 0.48392I$ $a = 0.125909 + 0.673054I$ $b = -0.46115 + 1.43967I$	$9.03260 - 4.08006I$	0
$u = 0.068354 + 0.540094I$ $a = -1.47112 - 0.90407I$ $b = -0.393840 + 0.335106I$	$5.52022 + 0.03424I$	$7.96720 - 0.60261I$
$u = 0.068354 - 0.540094I$ $a = -1.47112 + 0.90407I$ $b = -0.393840 - 0.335106I$	$5.52022 - 0.03424I$	$7.96720 + 0.60261I$
$u = 0.15751 + 1.45984I$ $a = -0.049137 + 0.248159I$ $b = -0.106769 - 0.316184I$	$-4.78686 + 2.68627I$	0
$u = 0.15751 - 1.45984I$ $a = -0.049137 - 0.248159I$ $b = -0.106769 + 0.316184I$	$-4.78686 - 2.68627I$	0
$u = 1.46290 + 0.14063I$ $a = -0.086000 - 0.518467I$ $b = 0.71801 - 2.27414I$	$10.26220 + 7.62684I$	0
$u = 1.46290 - 0.14063I$ $a = -0.086000 + 0.518467I$ $b = 0.71801 + 2.27414I$	$10.26220 - 7.62684I$	0
$u = -0.475600 + 0.217173I$ $a = 2.14968 + 0.17316I$ $b = -0.280691 - 0.105818I$	$-2.22651 + 1.76105I$	$1.37744 + 1.55240I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.475600-0.217173I$ $a=2.14968-0.17316I$ $b=-0.280691+0.105818I$	$-2.22651-1.76105I$	$1.37744-1.55240I$
$u=0.048553+0.517530I$ $a=1.61620-1.45157I$ $b=0.465905+0.266029I$	$4.47843-4.70240I$	$4.49650+5.47007I$
$u=0.048553-0.517530I$ $a=1.61620+1.45157I$ $b=0.465905-0.266029I$	$4.47843+4.70240I$	$4.49650-5.47007I$
$u=-0.485752+0.120738I$ $a=-0.446723-1.182890I$ $b=-0.180930+0.519966I$	$3.97923+2.53000I$	$6.84189-1.13685I$
$u=-0.485752-0.120738I$ $a=-0.446723+1.182890I$ $b=-0.180930-0.519966I$	$3.97923-2.53000I$	$6.84189+1.13685I$
$u=-1.49753+0.12512I$ $a=0.558038-0.601764I$ $b=0.68779-1.49936I$	$5.68912+7.07093I$	0
$u=-1.49753-0.12512I$ $a=0.558038+0.601764I$ $b=0.68779+1.49936I$	$5.68912-7.07093I$	0
$u=1.51899+0.07666I$ $a=0.059079-0.470658I$ $b=-0.25068-1.53369I$	$4.04694-0.33219I$	0
$u=1.51899-0.07666I$ $a=0.059079+0.470658I$ $b=-0.25068+1.53369I$	$4.04694+0.33219I$	0
$u=1.52042+0.11871I$ $a=-0.708203-0.170400I$ $b=1.185130-0.472331I$	$7.54648-7.09317I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.52042 - 0.11871I$ $a = -0.708203 + 0.170400I$ $b = 1.185130 + 0.472331I$	$7.54648 + 7.09317I$	0
$u = -0.471088 + 0.031867I$ $a = -0.54476 + 1.57952I$ $b = -1.89025 + 0.87716I$	$-2.39453 + 3.03728I$	$5.39122 - 4.35642I$
$u = -0.471088 - 0.031867I$ $a = -0.54476 - 1.57952I$ $b = -1.89025 - 0.87716I$	$-2.39453 - 3.03728I$	$5.39122 + 4.35642I$
$u = -0.08127 + 1.53240I$ $a = -0.656838 + 0.342465I$ $b = 0.248251 + 0.071874I$	$6.68549 + 1.64932I$	0
$u = -0.08127 - 1.53240I$ $a = -0.656838 - 0.342465I$ $b = 0.248251 - 0.071874I$	$6.68549 - 1.64932I$	0
$u = -1.57135 + 0.11639I$ $a = 0.494086 + 0.982442I$ $b = 0.59190 + 1.78909I$	$6.32209 - 6.02555I$	0
$u = -1.57135 - 0.11639I$ $a = 0.494086 - 0.982442I$ $b = 0.59190 - 1.78909I$	$6.32209 + 6.02555I$	0
$u = -0.022304 + 0.396147I$ $a = -1.02490 + 1.85182I$ $b = 1.38891 + 0.75346I$	$4.91782 - 5.77618I$	$4.50743 + 7.77922I$
$u = -0.022304 - 0.396147I$ $a = -1.02490 - 1.85182I$ $b = 1.38891 - 0.75346I$	$4.91782 + 5.77618I$	$4.50743 - 7.77922I$
$u = 1.53485 + 0.50520I$ $a = -0.431234 + 1.315120I$ $b = -0.42990 + 2.05535I$	$4.26591 + 5.26219I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.53485 - 0.50520I$ $a = -0.431234 - 1.315120I$ $b = -0.42990 - 2.05535I$	$4.26591 - 5.26219I$	0
$u = -0.365927 + 0.115265I$ $a = -3.47463 + 0.45216I$ $b = -0.324748 - 0.213350I$	$1.85337 + 7.74114I$	$8.60767 - 0.68834I$
$u = -0.365927 - 0.115265I$ $a = -3.47463 - 0.45216I$ $b = -0.324748 + 0.213350I$	$1.85337 - 7.74114I$	$8.60767 + 0.68834I$
$u = -1.62002 + 0.18053I$ $a = -1.017500 + 0.708221I$ $b = -0.55954 + 1.42055I$	$10.72520 + 3.07710I$	0
$u = -1.62002 - 0.18053I$ $a = -1.017500 - 0.708221I$ $b = -0.55954 - 1.42055I$	$10.72520 - 3.07710I$	0
$u = 0.247940 + 0.242752I$ $a = 2.38304 + 0.34026I$ $b = 0.331916 - 0.034596I$	$1.43380 + 0.59948I$	$7.91982 - 1.66824I$
$u = 0.247940 - 0.242752I$ $a = 2.38304 - 0.34026I$ $b = 0.331916 + 0.034596I$	$1.43380 - 0.59948I$	$7.91982 + 1.66824I$
$u = 1.64458 + 0.17161I$ $a = -0.279226 - 0.536798I$ $b = -0.47933 - 1.44197I$	$4.28101 - 2.71036I$	0
$u = 1.64458 - 0.17161I$ $a = -0.279226 + 0.536798I$ $b = -0.47933 + 1.44197I$	$4.28101 + 2.71036I$	0
$u = 0.03497 + 1.67464I$ $a = 0.717445 + 0.352982I$ $b = -0.191177 + 0.220339I$	$2.02623 + 4.33689I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.03497 - 1.67464I$ $a = 0.717445 - 0.352982I$ $b = -0.191177 - 0.220339I$	$2.02623 - 4.33689I$	0
$u = -1.67958$ $a = 0.693345$ $b = -1.26791$	2.49711	0
$u = 0.236427 + 0.199395I$ $a = 1.60827 - 3.33634I$ $b = -0.001468 + 0.322599I$	$-0.60686 + 5.09531I$	$7.9030 - 12.9015I$
$u = 0.236427 - 0.199395I$ $a = 1.60827 + 3.33634I$ $b = -0.001468 - 0.322599I$	$-0.60686 - 5.09531I$	$7.9030 + 12.9015I$
$u = -0.09867 + 1.69783I$ $a = -0.749971 + 0.326279I$ $b = 0.066056 + 0.201858I$	$6.47474 - 10.34840I$	0
$u = -0.09867 - 1.69783I$ $a = -0.749971 - 0.326279I$ $b = 0.066056 - 0.201858I$	$6.47474 + 10.34840I$	0
$u = -1.68844 + 0.22479I$ $a = 0.050361 - 0.701689I$ $b = 0.36176 - 1.53476I$	$10.57750 + 1.17864I$	0
$u = -1.68844 - 0.22479I$ $a = 0.050361 + 0.701689I$ $b = 0.36176 + 1.53476I$	$10.57750 - 1.17864I$	0
$u = 0.295080 + 0.019263I$ $a = -0.11560 - 2.44199I$ $b = 2.62075 - 0.51441I$	$3.11409 + 8.21921I$	$13.62610 - 2.24006I$
$u = 0.295080 - 0.019263I$ $a = -0.11560 + 2.44199I$ $b = 2.62075 + 0.51441I$	$3.11409 - 8.21921I$	$13.62610 + 2.24006I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.70373 + 0.14489I$ $a = 1.011830 + 0.885480I$ $b = 0.60800 + 1.52767I$	$6.74171 + 2.48577I$	0
$u = 1.70373 - 0.14489I$ $a = 1.011830 - 0.885480I$ $b = 0.60800 - 1.52767I$	$6.74171 - 2.48577I$	0
$u = -1.71387 + 0.06160I$ $a = -1.14154 + 0.94526I$ $b = -0.70620 + 1.52862I$	$11.03550 - 7.90171I$	0
$u = -1.71387 - 0.06160I$ $a = -1.14154 - 0.94526I$ $b = -0.70620 - 1.52862I$	$11.03550 + 7.90171I$	0
$u = -1.73811 + 0.42795I$ $a = 0.308901 + 1.230190I$ $b = 0.36915 + 1.93930I$	$6.88769 - 8.79713I$	0
$u = -1.73811 - 0.42795I$ $a = 0.308901 - 1.230190I$ $b = 0.36915 - 1.93930I$	$6.88769 + 8.79713I$	0
$u = 1.79169 + 0.07055I$ $a = -0.261583 + 0.976976I$ $b = -0.41663 + 1.73139I$	$10.42930 + 6.50256I$	0
$u = 1.79169 - 0.07055I$ $a = -0.261583 - 0.976976I$ $b = -0.41663 - 1.73139I$	$10.42930 - 6.50256I$	0
$u = 1.64355 + 0.76595I$ $a = 0.238769 - 0.900965I$ $b = 0.41950 - 2.11559I$	$11.72410 + 6.43158I$	0
$u = 1.64355 - 0.76595I$ $a = 0.238769 + 0.900965I$ $b = 0.41950 + 2.11559I$	$11.72410 - 6.43158I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.68129 + 0.68085I$ $a = 0.302620 - 0.966596I$ $b = 0.44854 - 2.06992I$	$12.1359 + 18.6917I$	0
$u = 1.68129 - 0.68085I$ $a = 0.302620 + 0.966596I$ $b = 0.44854 + 2.06992I$	$12.1359 - 18.6917I$	0
$u = -1.69699 + 0.70648I$ $a = -0.294241 - 0.926686I$ $b = -0.42564 - 2.07282I$	$7.4972 - 12.8257I$	0
$u = -1.69699 - 0.70648I$ $a = -0.294241 + 0.926686I$ $b = -0.42564 + 2.07282I$	$7.4972 + 12.8257I$	0
$u = -1.69723 + 0.77785I$ $a = -0.007929 + 0.620203I$ $b = 0.12272 + 1.43695I$	$11.4882 - 10.1881I$	0
$u = -1.69723 - 0.77785I$ $a = -0.007929 - 0.620203I$ $b = 0.12272 - 1.43695I$	$11.4882 + 10.1881I$	0
$u = 1.71891 + 0.77630I$ $a = 0.086186 + 0.631215I$ $b = -0.08091 + 1.43690I$	$7.13405 + 4.39113I$	0
$u = 1.71891 - 0.77630I$ $a = 0.086186 - 0.631215I$ $b = -0.08091 - 1.43690I$	$7.13405 - 4.39113I$	0
$u = -1.72140 + 0.77893I$ $a = -0.120062 + 0.731223I$ $b = 0.04966 + 1.48739I$	$11.54170 + 1.44671I$	0
$u = -1.72140 - 0.77893I$ $a = -0.120062 - 0.731223I$ $b = 0.04966 - 1.48739I$	$11.54170 - 1.44671I$	0

II.

$\boldsymbol{I_2^u = \langle -1.69\times10^{47}u^{40}+1.75\times10^{46}u^{39}+\cdots+3.47\times10^{46}b-4.11\times10^{46},\ -1.42\times10^{47}u^{40}+2.07\times10^{46}u^{39}+\cdots+3.47\times10^{46}a-2.13\times10^{46},\ u^{41}-6u^{39}+\cdots+u-1\rangle}$

(i) Arc colorings

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

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

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

$$a_7 = \begin{pmatrix}u\\u\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}4.10494u^{40} - 0.597656u^{39} + \cdots - 9.68616u + 0.613118\\4.88015u^{40} - 0.503211u^{39} + \cdots - 22.9488u + 1.18480\end{pmatrix}$$

$$a_8 = \begin{pmatrix}1.61896u^{40} + 1.06371u^{39} + \cdots + 2.37068u - 5.64892\\6.27049u^{40} - 0.774230u^{39} + \cdots - 23.0505u + 2.89455\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-4.10021u^{40} - 2.00801u^{39} + \cdots + 8.23459u + 9.78779\\-4.19990u^{40} + 0.714138u^{39} + \cdots + 23.6296u - 1.09036\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}4.10494u^{40} - 0.597656u^{39} + \cdots - 9.68616u + 0.613118\\6.09428u^{40} - 0.598129u^{39} + \cdots - 27.6514u + 1.78246\end{pmatrix}$$

$$a_9 = \begin{pmatrix}3.39574u^{40} + 1.37489u^{39} + \cdots - 9.42474u - 8.28903\\-0.264066u^{40} - 0.731061u^{39} + \cdots - 3.21100u + 0.123867\end{pmatrix}$$

$$a_4 = \begin{pmatrix}-2.01703u^{40} - 3.13071u^{39} + \cdots - 4.56632u + 9.08980\\-1.63251u^{40} + 0.0304092u^{39} + \cdots + 2.79024u - 0.101232\end{pmatrix}$$

$$a_1 = \begin{pmatrix}3.04921u^{40} + 1.29290u^{39} + \cdots - 3.07138u - 6.74857\\4.03136u^{40} - 0.205834u^{39} + \cdots - 14.4390u + 1.15289\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}3.13168u^{40} + 0.643830u^{39} + \cdots - 12.6357u - 8.16516\\-0.264066u^{40} - 0.731061u^{39} + \cdots - 3.21100u + 0.123867\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 2.90590u^{40} + 0.762589u^{39} + \cdots - 3.05543u - 31.9789$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{41} - 8u^{40} + \cdots - 110u + 17$
c_2	$u^{41} - 6u^{39} + \cdots + u - 1$
c_3	$u^{41} - u^{39} + \cdots + 134u - 23$
c_4	$u^{41} + 8u^{40} + \cdots - 110u - 17$
c_5	$u^{41} - 12u^{40} + \cdots + u - 1$
c_6	$u^{41} - 6u^{39} + \cdots + u + 1$
c_7	$u^{41} + 5u^{40} + \cdots - 143u + 23$
c_8	$u^{41} + 17u^{40} + \cdots + 13u + 1$
c_9	$u^{41} - u^{40} + \cdots - 4u - 1$
c_{10}	$u^{41} + u^{40} + \cdots + 5u^2 + 1$
c_{11}	$u^{41} - u^{40} + \cdots + 6u - 1$
c_{12}	$u^{41} - 14u^{40} + \cdots + 25u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{41} + 26y^{40} + \cdots - 3608y - 289$
c_2, c_6	$y^{41} - 12y^{40} + \cdots - 23y - 1$
c_3	$y^{41} - 2y^{40} + \cdots + 19566y - 529$
c_5	$y^{41} - 14y^{40} + \cdots - 7y - 1$
c_7	$y^{41} - 13y^{40} + \cdots - 11613y - 529$
c_8	$y^{41} - 11y^{40} + \cdots + y - 1$
c_9	$y^{41} - 5y^{40} + \cdots - 32y - 1$
c_{10}	$y^{41} - 19y^{40} + \cdots - 10y - 1$
c_{11}	$y^{41} + y^{40} + \cdots + 30y - 1$
c_{12}	$y^{41} - 10y^{40} + \cdots + 81y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.952386 + 0.251132I$ $a = 0.640121 + 0.296800I$ $b = 1.02948 + 1.52247I$	$6.01659 - 5.13303I$	$9.81131 + 4.55166I$
$u = 0.952386 - 0.251132I$ $a = 0.640121 - 0.296800I$ $b = 1.02948 - 1.52247I$	$6.01659 + 5.13303I$	$9.81131 - 4.55166I$
$u = -1.046820 + 0.027512I$ $a = -0.841798 - 0.710792I$ $b = 0.553141 - 0.969862I$	$6.33047 - 4.87495I$	$9.54719 + 6.84415I$
$u = -1.046820 - 0.027512I$ $a = -0.841798 + 0.710792I$ $b = 0.553141 + 0.969862I$	$6.33047 + 4.87495I$	$9.54719 - 6.84415I$
$u = -0.338804 + 1.013340I$ $a = 1.00979 - 1.00121I$ $b = 0.458673 - 1.085410I$	$0.54904 - 1.39209I$	$13.29952 + 0.81015I$
$u = -0.338804 - 1.013340I$ $a = 1.00979 + 1.00121I$ $b = 0.458673 + 1.085410I$	$0.54904 + 1.39209I$	$13.29952 - 0.81015I$
$u = 1.112990 + 0.293760I$ $a = 0.049525 - 1.130510I$ $b = -0.40411 - 1.58229I$	$8.36300 + 1.31554I$	$10.45063 + 1.44282I$
$u = 1.112990 - 0.293760I$ $a = 0.049525 + 1.130510I$ $b = -0.40411 + 1.58229I$	$8.36300 - 1.31554I$	$10.45063 - 1.44282I$
$u = 0.107389 + 1.161010I$ $a = -0.529222 + 0.597549I$ $b = -0.345727 + 0.512197I$	$1.41761 + 1.46343I$	$10.39351 - 8.21571I$
$u = 0.107389 - 1.161010I$ $a = -0.529222 - 0.597549I$ $b = -0.345727 - 0.512197I$	$1.41761 - 1.46343I$	$10.39351 + 8.21571I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.628142+0.988499I$ $a=-1.11897-1.12327I$ $b=-0.54118-1.70590I$	$0.97631-3.82695I$	$-1.6516+19.3661I$
$u=-0.628142-0.988499I$ $a=-1.11897+1.12327I$ $b=-0.54118+1.70590I$	$0.97631+3.82695I$	$-1.6516-19.3661I$
$u=0.470606+1.155270I$ $a=-0.028573+0.833511I$ $b=-0.38785+2.81583I$	$-3.36152+4.60110I$	$15.9012-17.2277I$
$u=0.470606-1.155270I$ $a=-0.028573-0.833511I$ $b=-0.38785-2.81583I$	$-3.36152-4.60110I$	$15.9012+17.2277I$
$u=-0.340440+1.201380I$ $a=1.058470+0.217118I$ $b=0.604047+0.112839I$	$-0.39517-1.59433I$	$-2.85896+0.56166I$
$u=-0.340440-1.201380I$ $a=1.058470-0.217118I$ $b=0.604047-0.112839I$	$-0.39517+1.59433I$	$-2.85896-0.56166I$
$u=-1.386130+0.064581I$ $a=-0.358652-0.473522I$ $b=-0.46464-1.51985I$	$3.02640-2.39530I$	$-1.87129+1.48070I$
$u=-1.386130-0.064581I$ $a=-0.358652+0.473522I$ $b=-0.46464+1.51985I$	$3.02640+2.39530I$	$-1.87129-1.48070I$
$u=-0.288872+0.527859I$ $a=0.538198+1.237950I$ $b=-0.142355-0.875437I$	$-2.62958-2.90690I$	$-2.41296-0.16128I$
$u=-0.288872-0.527859I$ $a=0.538198-1.237950I$ $b=-0.142355+0.875437I$	$-2.62958+2.90690I$	$-2.41296+0.16128I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.38946+0.27906I$ $a=0.058102-0.712453I$ $b=0.19621-1.83356I$	$4.67661-3.20193I$	$0.+4.30217I$
$u=-1.38946-0.27906I$ $a=0.058102+0.712453I$ $b=0.19621+1.83356I$	$4.67661+3.20193I$	$0.-4.30217I$
$u=1.42091$ $a=0.649503$ $b=-1.44910$	1.69376	-8.24860
$u=-0.140859+0.555191I$ $a=1.44216+1.34118I$ $b=0.834945+0.113195I$	$-1.19711-1.58029I$	$-2.90372+2.25169I$
$u=-0.140859-0.555191I$ $a=1.44216-1.34118I$ $b=0.834945-0.113195I$	$-1.19711+1.58029I$	$-2.90372-2.25169I$
$u=0.142576+0.539047I$ $a=1.44759-1.49240I$ $b=-0.297912+0.034105I$	$-0.87727-4.75233I$	$-3.32637-0.85526I$
$u=0.142576-0.539047I$ $a=1.44759+1.49240I$ $b=-0.297912-0.034105I$	$-0.87727+4.75233I$	$-3.32637+0.85526I$
$u=0.348782+0.430636I$ $a=0.59957-2.09957I$ $b=0.311611-0.221911I$	$1.52086+8.17073I$	$-1.00252-12.59870I$
$u=0.348782-0.430636I$ $a=0.59957+2.09957I$ $b=0.311611+0.221911I$	$1.52086-8.17073I$	$-1.00252+12.59870I$
$u=-1.44289+0.20281I$ $a=0.431228+1.105350I$ $b=0.62892+1.90465I$	$8.50964-5.56667I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.44289-0.20281I$ $a=\ \ 0.431228-1.105350I$ $b=\ \ 0.62892-1.90465I$	$8.50964+5.56667I$	0
$u=\ \ 0.246698+0.475195I$ $a=\ \ 0.713294+0.778055I$ $b=\ \ 2.50717-0.16741I$	$2.77860+8.41441I$	$-4.40112-13.05931I$
$u=\ \ 0.246698-0.475195I$ $a=\ \ 0.713294-0.778055I$ $b=\ \ 2.50717+0.16741I$	$2.77860-8.41441I$	$-4.40112+13.05931I$
$u=-0.116557+0.481024I$ $a=-0.500078+1.147000I$ $b=-1.46223-0.92861I$	$-3.05409-2.97474I$	$-8.42863+3.72667I$
$u=-0.116557-0.481024I$ $a=-0.500078-1.147000I$ $b=-1.46223+0.92861I$	$-3.05409+2.97474I$	$-8.42863-3.72667I$
$u=-0.11872+1.53766I$ $a=\ \ 0.0471430-0.1297460I$ $b=-0.050492+0.385485I$	$-4.67861-2.75058I$	0
$u=-0.11872-1.53766I$ $a=\ \ 0.0471430+0.1297460I$ $b=-0.050492-0.385485I$	$-4.67861+2.75058I$	0
$u=\ \ 1.55421+0.14944I$ $a=-0.402554-0.538942I$ $b=\ \ 0.29074-1.63409I$	$9.68536+7.26409I$	0
$u=\ \ 1.55421-0.14944I$ $a=-0.402554+0.538942I$ $b=\ \ 0.29074+1.63409I$	$9.68536-7.26409I$	0
$u=\ \ 1.59160+0.12571I$ $a=-0.580101+1.011840I$ $b=-0.59390+1.80039I$	$7.55413+6.62633I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 1.59160 - 0.12571I$		
$a = -0.580101 - 1.011840I$	$7.55413 - 6.62633I$	0
$b = -0.59390 - 1.80039I$		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{41}-8u^{40}+\cdots-110u+17)(u^{110}-5u^{109}+\cdots-655u+27)$
c_2	$(u^{41}-6u^{39}+\cdots+u-1)(u^{110}-u^{109}+\cdots+158844u-23011)$
c_3	$(u^{41}-u^{39}+\cdots+134u-23)$ $\cdot(u^{110}+u^{109}+\cdots-27299702743u-7633881929)$
c_4	$(u^{41}+8u^{40}+\cdots-110u-17)(u^{110}-5u^{109}+\cdots-655u+27)$
c_5	$(u^{41}-12u^{40}+\cdots+u-1)(u^{110}-7u^{109}+\cdots+32u-1)$
c_6	$(u^{41}-6u^{39}+\cdots+u+1)(u^{110}-u^{109}+\cdots+158844u-23011)$
c_7	$(u^{41}+5u^{40}+\cdots-143u+23)$ $\cdot(u^{110}+25u^{108}+\cdots+2741658038u-256908883)$
c_8	$(u^{41}+17u^{40}+\cdots+13u+1)(u^{110}-6u^{109}+\cdots-132u-121)$
c_9	$(u^{41}-u^{40}+\cdots-4u-1)$ $\cdot(u^{110}-27u^{108}+\cdots-348627733u-55663493)$
c_{10}	$(u^{41}+u^{40}+\cdots+5u^2+1)$ $\cdot(u^{110}+4u^{109}+\cdots+979761921u+106831211)$
c_{11}	$(u^{41}-u^{40}+\cdots+6u-1)(u^{110}+18u^{108}+\cdots+1919803u-465261)$
c_{12}	$(u^{41}-14u^{40}+\cdots+25u-1)(u^{110}-5u^{109}+\cdots-1146282u+43209)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y^{41} + 26y^{40} + \cdots - 3608y - 289)$ $\cdot (y^{110} + 77y^{109} + \cdots + 13397y + 729)$
c_2, c_6	$(y^{41} - 12y^{40} + \cdots - 23y - 1)$ $\cdot (y^{110} - 93y^{109} + \cdots - 21526553292y + 529506121)$
c_3	$(y^{41} - 2y^{40} + \cdots + 19566y - 529)$ $\cdot (y^{110} - 71y^{109} + \cdots - 1.44 \times 10^{21}y + 5.83 \times 10^{19})$
c_5	$(y^{41} - 14y^{40} + \cdots - 7y - 1)(y^{110} - 3y^{109} + \cdots - 512y + 1)$
c_7	$(y^{41} - 13y^{40} + \cdots - 11613y - 529)$ $\cdot (y^{110} + 50y^{109} + \cdots + 1760931224300394538y + 66002174164307689)$
c_8	$(y^{41} - 11y^{40} + \cdots + y - 1)(y^{110} - 40y^{109} + \cdots - 2526964y + 14641)$
c_9	$(y^{41} - 5y^{40} + \cdots - 32y - 1)$ $\cdot (y^{110} - 54y^{109} + \cdots - 28826776772721039y + 3098424452961049)$
c_{10}	$(y^{41} - 19y^{40} + \cdots - 10y - 1)$ $\cdot (y^{110} - 64y^{109} + \cdots - 562423846261318061y + 11412907643726521)$
c_{11}	$(y^{41} + y^{40} + \cdots + 30y - 1)$ $\cdot (y^{110} + 36y^{109} + \cdots + 4003166674991y + 216467798121)$
c_{12}	$(y^{41} - 10y^{40} + \cdots + 81y - 1)$ $\cdot (y^{110} - 47y^{109} + \cdots - 179416969920y + 1867017681)$