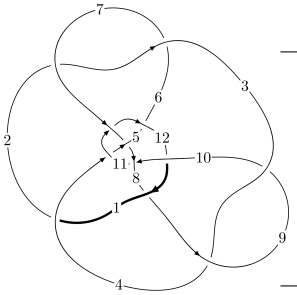
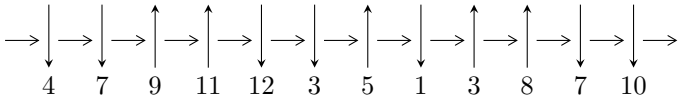
$12n_{0775}$ $(K12n_{0775})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 4.72946 \times 10^{550} u^{111} + 2.16316 \times 10^{551} u^{110} + \cdots + 4.92224 \times 10^{554} b - 1.20545 \times 10^{554},$$
$$- 9.48171 \times 10^{554} u^{111} - 4.01791 \times 10^{555} u^{110} + \cdots + 3.37616 \times 10^{558} a + 3.78754 \times 10^{559},$$
$$u^{112} + 4u^{111} + \cdots - 58325u - 6859 \rangle$$

$$I_2^u = \langle 6.07912 \times 10^{52} u^{46} + 2.17727 \times 10^{53} u^{45} + \cdots + 2.21125 \times 10^{51} b - 7.40591 \times 10^{51},$$
$$- 9.90092 \times 10^{52} u^{46} - 3.59271 \times 10^{53} u^{45} + \cdots + 2.21125 \times 10^{51} a + 1.90357 \times 10^{52},\ u^{47} + 3u^{46} + \cdots + 2u +$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 159 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. $\boldsymbol{I_1^u = \langle 4.73 \times 10^{550} u^{111} + 2.16 \times 10^{551} u^{110} + \cdots + 4.92 \times 10^{554} b - 1.21 \times 10^{554},\ -9.48 \times 10^{554} u^{111} - 4.02 \times 10^{555} u^{110} + \cdots + 3.38 \times 10^{558} a + 3.79 \times 10^{559},\ u^{112} + 4u^{111} + \cdots - 58325u - 6859 \rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_7 = \begin{pmatrix} 0.000280843u^{111} + 0.00119008u^{110} + \cdots - 32.1239u - 11.2185 \\ -0.0000960836u^{111} - 0.000439467u^{110} + \cdots + 4.92015u + 0.244899 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -0.000138137u^{111} - 0.000302670u^{110} + \cdots + 2.66029u - 2.85809 \\ 5.61677 \times 10^{-6} u^{111} - 0.0000925256u^{110} + \cdots + 11.2653u + 1.87081 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.000132520u^{111} - 0.000395196u^{110} + \cdots + 13.9256u - 0.987279 \\ 5.61677 \times 10^{-6} u^{111} - 0.0000925256u^{110} + \cdots + 11.2653u + 1.87081 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.000313936u^{111} + 0.00143159u^{110} + \cdots - 33.0210u - 11.4311 \\ -0.000175323u^{111} - 0.000907347u^{110} + \cdots + 11.5124u + 0.993446 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.000245594u^{111} - 0.000947597u^{110} + \cdots + 34.1586u + 7.91000 \\ 0.000161105u^{111} + 0.000657051u^{110} + \cdots - 4.86191u - 0.127743 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.000328032u^{111} + 0.00138695u^{110} + \cdots - 39.0729u - 7.92306 \\ -0.0000170292u^{111} - 0.000100765u^{110} + \cdots + 0.692184u - 0.497656 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.000127367u^{111} - 0.000200399u^{110} + \cdots + 4.99895u - 2.21822 \\ -0.0000483797u^{111} - 0.000392963u^{110} + \cdots + 12.5333u + 1.83459 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.000227088u^{111} + 0.000766160u^{110} + \cdots - 1.60868u - 2.46399 \\ -0.0000568114u^{111} - 0.000133618u^{110} + \cdots - 5.98721u - 0.924727 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.000127691u^{111} + 0.000648814u^{110} + \cdots - 28.0526u + 4.80987$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{112} - 9u^{111} + \cdots - 8787594026u + 1142120643$
c_2, c_6	$u^{112} + 4u^{111} + \cdots - 15875381u - 1020181$
c_3, c_9	$u^{112} + 4u^{111} + \cdots - 58325u - 6859$
c_4	$u^{112} + 3u^{111} + \cdots - 55496u - 8997$
c_5	$u^{112} - u^{111} + \cdots - 458318546098u + 137795579005$
c_7	$u^{112} + 6u^{111} + \cdots + 437u + 19$
c_8	$u^{112} + u^{111} + \cdots - 85u - 1$
c_{10}	$u^{112} - 3u^{111} + \cdots + 13903468u + 3529277$
c_{11}	$u^{112} - 7u^{111} + \cdots + 8027953u + 4448443$
c_{12}	$u^{112} + 4u^{111} + \cdots + 29852667u + 2796781$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{112} - 75y^{111} + \cdots - 1.37 \times 10^{19}y + 1.30 \times 10^{18}$
c_2, c_6	$y^{112} - 112y^{111} + \cdots + 38800688855225y + 1040769272761$
c_3, c_9	$y^{112} + 78y^{111} + \cdots - 34516755y + 47045881$
c_4	$y^{112} + 31y^{111} + \cdots + 1564391402y + 80946009$
c_5	$y^{112} - 55y^{111} + \cdots + 9.87 \times 10^{22}y + 1.90 \times 10^{22}$
c_7	$y^{112} - 2y^{111} + \cdots - 23009y + 361$
c_8	$y^{112} - 7y^{111} + \cdots + 15211y + 1$
c_{10}	$y^{112} - 17y^{111} + \cdots + 813550693297028y + 12455796142729$
c_{11}	$y^{112} - 101y^{111} + \cdots + 1303442294494373y + 19788645124249$
c_{12}	$y^{112} - 50y^{111} + \cdots + 1010612326184383y + 7821983961961$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.820472 + 0.562696I$ $a = -0.610188 + 0.796078I$ $b = 0.749858 - 0.604560I$	$-4.54077 - 2.35893I$	0
$u = 0.820472 - 0.562696I$ $a = -0.610188 - 0.796078I$ $b = 0.749858 + 0.604560I$	$-4.54077 + 2.35893I$	0
$u = 0.192272 + 0.988334I$ $a = 0.134561 + 1.314880I$ $b = -0.360895 + 0.348983I$	$4.95567 + 0.74367I$	0
$u = 0.192272 - 0.988334I$ $a = 0.134561 - 1.314880I$ $b = -0.360895 - 0.348983I$	$4.95567 - 0.74367I$	0
$u = 0.683818 + 0.687327I$ $a = 0.166713 - 0.372936I$ $b = -0.330665 - 0.119114I$	$1.37759 + 2.46422I$	0
$u = 0.683818 - 0.687327I$ $a = 0.166713 + 0.372936I$ $b = -0.330665 + 0.119114I$	$1.37759 - 2.46422I$	0
$u = 0.515372 + 0.912803I$ $a = 0.42132 - 1.50020I$ $b = -0.323125 + 1.248830I$	$-5.60049 + 7.43511I$	0
$u = 0.515372 - 0.912803I$ $a = 0.42132 + 1.50020I$ $b = -0.323125 - 1.248830I$	$-5.60049 - 7.43511I$	0
$u = -0.251961 + 0.906396I$ $a = 0.76478 - 1.54270I$ $b = -1.165860 - 0.019395I$	$2.58226 - 1.11403I$	0
$u = -0.251961 - 0.906396I$ $a = 0.76478 + 1.54270I$ $b = -1.165860 + 0.019395I$	$2.58226 + 1.11403I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.230071+0.883448I$ $a=\ 0.055779-0.188613I$ $b=\ 0.757231+0.273492I$	$-3.63124+0.79197I$	0
$u=-0.230071-0.883448I$ $a=\ 0.055779+0.188613I$ $b=\ 0.757231-0.273492I$	$-3.63124-0.79197I$	0
$u=-0.625382+0.892347I$ $a=\ 1.43689-1.91980I$ $b=-2.45987+0.62363I$	$4.79451-2.46272I$	0
$u=-0.625382-0.892347I$ $a=\ 1.43689+1.91980I$ $b=-2.45987-0.62363I$	$4.79451+2.46272I$	0
$u=\ 0.535431+0.976259I$ $a=\ 0.220208+0.415433I$ $b=-0.145589-0.236451I$	$0.39793+2.25572I$	0
$u=\ 0.535431-0.976259I$ $a=\ 0.220208-0.415433I$ $b=-0.145589+0.236451I$	$0.39793-2.25572I$	0
$u=\ 0.370960+1.052540I$ $a=-1.314470+0.505056I$ $b=\ 0.96982-1.30873I$	$-3.79912+5.92613I$	0
$u=\ 0.370960-1.052540I$ $a=-1.314470-0.505056I$ $b=\ 0.96982+1.30873I$	$-3.79912-5.92613I$	0
$u=-0.810666+0.304232I$ $a=\ 0.046719-0.197447I$ $b=\ 1.208720-0.245075I$	$-3.14523+0.13283I$	0
$u=-0.810666-0.304232I$ $a=\ 0.046719+0.197447I$ $b=\ 1.208720+0.245075I$	$-3.14523-0.13283I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.029973+1.144160I$ $a=\ \ 0.904002-0.401965I$ $b=-0.55721+1.38898I$	$-2.17519-5.17005I$	0
$u=-0.029973-1.144160I$ $a=\ \ 0.904002+0.401965I$ $b=-0.55721-1.38898I$	$-2.17519+5.17005I$	0
$u=-0.760594+0.373854I$ $a=\ \ 0.191943-0.611863I$ $b=-0.070552-0.361483I$	$0.05174+3.76897I$	0
$u=-0.760594-0.373854I$ $a=\ \ 0.191943+0.611863I$ $b=-0.070552+0.361483I$	$0.05174-3.76897I$	0
$u=-0.459153+1.057810I$ $a=-0.79656+1.24755I$ $b=\ \ 0.692312-0.581892I$	$-5.26545-4.52408I$	0
$u=-0.459153-1.057810I$ $a=-0.79656-1.24755I$ $b=\ \ 0.692312+0.581892I$	$-5.26545+4.52408I$	0
$u=\ \ 1.044220+0.536131I$ $a=\ \ 0.130077+1.360110I$ $b=-1.021250-0.147732I$	$0.14579+5.18168I$	0
$u=\ \ 1.044220-0.536131I$ $a=\ \ 0.130077-1.360110I$ $b=-1.021250+0.147732I$	$0.14579-5.18168I$	0
$u=-0.126808+0.779708I$ $a=\ \ 0.25097+1.83833I$ $b=-0.355896-0.381890I$	$-0.86855+4.51509I$	0
$u=-0.126808-0.779708I$ $a=\ \ 0.25097-1.83833I$ $b=-0.355896+0.381890I$	$-0.86855-4.51509I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.482246+0.610736I$ $a=-0.335837+0.313447I$ $b=\ \ 1.389450-0.115206I$	$-3.36847+0.61627I$	0
$u=-0.482246-0.610736I$ $a=-0.335837-0.313447I$ $b=\ \ 1.389450+0.115206I$	$-3.36847-0.61627I$	0
$u=-0.413576+1.156490I$ $a=-0.194129+0.092382I$ $b=\ \ 0.401166+0.631290I$	$-4.20708-6.00888I$	0
$u=-0.413576-1.156490I$ $a=-0.194129-0.092382I$ $b=\ \ 0.401166-0.631290I$	$-4.20708+6.00888I$	0
$u=-0.067809+1.235900I$ $a=-2.39842+0.29783I$ $b=\ \ 2.08495-0.10259I$	$-5.65446-2.17511I$	0
$u=-0.067809-1.235900I$ $a=-2.39842-0.29783I$ $b=\ \ 2.08495+0.10259I$	$-5.65446+2.17511I$	0
$u=-0.602494+1.083240I$ $a=-0.1057130-0.0812277I$ $b=-0.436934+0.197677I$	$-1.99769-8.93050I$	0
$u=-0.602494-1.083240I$ $a=-0.1057130+0.0812277I$ $b=-0.436934-0.197677I$	$-1.99769+8.93050I$	0
$u=-0.249742+1.234070I$ $a=-2.19288+0.51178I$ $b=\ \ 2.10567+0.54100I$	$-5.63157-3.78862I$	0
$u=-0.249742-1.234070I$ $a=-2.19288-0.51178I$ $b=\ \ 2.10567-0.54100I$	$-5.63157+3.78862I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.666204 + 1.070400I$ $a = 0.513000 + 0.183372I$ $b = -1.163080 - 0.268835I$	$-1.86055 + 1.14037I$	0
$u = 0.666204 - 1.070400I$ $a = 0.513000 - 0.183372I$ $b = -1.163080 + 0.268835I$	$-1.86055 - 1.14037I$	0
$u = -0.085971 + 1.263370I$ $a = 1.092920 + 0.492671I$ $b = -0.89546 - 1.54696I$	$-0.319616 - 0.226105I$	0
$u = -0.085971 - 1.263370I$ $a = 1.092920 - 0.492671I$ $b = -0.89546 + 1.54696I$	$-0.319616 + 0.226105I$	0
$u = -0.203736 + 1.268160I$ $a = -0.0034625 - 0.0350637I$ $b = 0.137235 + 0.814280I$	$-5.70721 - 0.73948I$	0
$u = -0.203736 - 1.268160I$ $a = -0.0034625 + 0.0350637I$ $b = 0.137235 - 0.814280I$	$-5.70721 + 0.73948I$	0
$u = -1.288250 + 0.075127I$ $a = 0.094427 - 0.327496I$ $b = 1.82157 - 0.04101I$	$-6.92130 - 3.75023I$	0
$u = -1.288250 - 0.075127I$ $a = 0.094427 + 0.327496I$ $b = 1.82157 + 0.04101I$	$-6.92130 + 3.75023I$	0
$u = -0.044785 + 1.300280I$ $a = 2.60956 + 0.17251I$ $b = -2.83914 - 0.48601I$	$-9.59880 - 6.71685I$	0
$u = -0.044785 - 1.300280I$ $a = 2.60956 - 0.17251I$ $b = -2.83914 + 0.48601I$	$-9.59880 + 6.71685I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.066281+1.303150I$ $a=-1.03065-1.21787I$ $b=\ \ 0.99259+2.58235I$	$-2.34168-6.96805I$	0
$u=-0.066281-1.303150I$ $a=-1.03065+1.21787I$ $b=\ \ 0.99259-2.58235I$	$-2.34168+6.96805I$	0
$u=-0.661126+0.186885I$ $a=\ \ 0.974380+0.107720I$ $b=\ \ 0.451910-0.045072I$	$-1.30680+1.95430I$	$-2.00000-3.74794I$
$u=-0.661126-0.186885I$ $a=\ \ 0.974380-0.107720I$ $b=\ \ 0.451910+0.045072I$	$-1.30680-1.95430I$	$-2.00000+3.74794I$
$u=-0.205430+1.314940I$ $a=\ \ 1.68962-0.69503I$ $b=-1.79990+0.80722I$	$-9.26055-4.29629I$	0
$u=-0.205430-1.314940I$ $a=\ \ 1.68962+0.69503I$ $b=-1.79990-0.80722I$	$-9.26055+4.29629I$	0
$u=\ \ 1.345730+0.066228I$ $a=\ \ 0.380481-0.166342I$ $b=\ \ 2.11618-0.08970I$	$-5.52257+1.61467I$	0
$u=\ \ 1.345730-0.066228I$ $a=\ \ 0.380481+0.166342I$ $b=\ \ 2.11618+0.08970I$	$-5.52257-1.61467I$	0
$u=\ \ 0.618605+0.165341I$ $a=\ \ 0.811260-0.887395I$ $b=\ \ 0.445574+0.782574I$	$-1.45852-2.39541I$	$-2.76939+2.29844I$
$u=\ \ 0.618605-0.165341I$ $a=\ \ 0.811260+0.887395I$ $b=\ \ 0.445574-0.782574I$	$-1.45852+2.39541I$	$-2.76939-2.29844I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.253530 + 1.337200I$ $a = -1.82896 - 0.48628I$ $b = 1.65501 - 0.68419I$	$-6.63750 + 6.21609I$	0
$u = 0.253530 - 1.337200I$ $a = -1.82896 + 0.48628I$ $b = 1.65501 + 0.68419I$	$-6.63750 - 6.21609I$	0
$u = 0.285422 + 0.536350I$ $a = 1.40090 - 0.81746I$ $b = -0.035432 - 0.217193I$	$0.82427 + 2.54264I$	$6.91993 - 6.04740I$
$u = 0.285422 - 0.536350I$ $a = 1.40090 + 0.81746I$ $b = -0.035432 + 0.217193I$	$0.82427 - 2.54264I$	$6.91993 + 6.04740I$
$u = -1.382520 + 0.211454I$ $a = -0.37785 + 1.47718I$ $b = -0.09063 + 2.23933I$	$5.13845 - 3.88562I$	0
$u = -1.382520 - 0.211454I$ $a = -0.37785 - 1.47718I$ $b = -0.09063 - 2.23933I$	$5.13845 + 3.88562I$	0
$u = -1.402850 + 0.098193I$ $a = -0.104941 + 0.247776I$ $b = -1.90261 + 0.09484I$	$-7.42391 - 11.92370I$	0
$u = -1.402850 - 0.098193I$ $a = -0.104941 - 0.247776I$ $b = -1.90261 - 0.09484I$	$-7.42391 + 11.92370I$	0
$u = -0.143752 + 1.399190I$ $a = -1.68598 + 0.65970I$ $b = 2.26666 - 0.84935I$	$-9.27132 - 2.83279I$	0
$u = -0.143752 - 1.399190I$ $a = -1.68598 - 0.65970I$ $b = 2.26666 + 0.84935I$	$-9.27132 + 2.83279I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.258232 + 1.388350I$ $a = 0.463315 - 0.717360I$ $b = -0.234058 - 0.143351I$	$-6.36736 + 0.90340I$	0
$u = 0.258232 - 1.388350I$ $a = 0.463315 + 0.717360I$ $b = -0.234058 + 0.143351I$	$-6.36736 - 0.90340I$	0
$u = 0.17098 + 1.40758I$ $a = -0.239166 - 0.119759I$ $b = 0.042488 - 1.178640I$	$-2.11115 - 0.22606I$	0
$u = 0.17098 - 1.40758I$ $a = -0.239166 + 0.119759I$ $b = 0.042488 + 1.178640I$	$-2.11115 + 0.22606I$	0
$u = 0.537253 + 0.222267I$ $a = 1.48340 + 0.50119I$ $b = 1.38375 + 0.34335I$	$-2.75015 - 3.14737I$	$-0.51905 + 9.05080I$
$u = 0.537253 - 0.222267I$ $a = 1.48340 - 0.50119I$ $b = 1.38375 - 0.34335I$	$-2.75015 + 3.14737I$	$-0.51905 - 9.05080I$
$u = 0.20915 + 1.40309I$ $a = 1.77505 + 0.11194I$ $b = -1.59384 - 0.09968I$	$-11.3422 + 9.1428I$	0
$u = 0.20915 - 1.40309I$ $a = 1.77505 - 0.11194I$ $b = -1.59384 + 0.09968I$	$-11.3422 - 9.1428I$	0
$u = 0.208395 + 0.532517I$ $a = 0.682181 + 0.441617I$ $b = 0.041881 - 0.377150I$	$-0.144616 + 1.089290I$	$-2.18626 - 6.39033I$
$u = 0.208395 - 0.532517I$ $a = 0.682181 - 0.441617I$ $b = 0.041881 + 0.377150I$	$-0.144616 - 1.089290I$	$-2.18626 + 6.39033I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.02898 + 1.43111I$ $a = 1.82656 - 0.02849I$ $b = -1.82470 + 0.47918I$	$-10.80120 + 1.32037I$	0
$u = 0.02898 - 1.43111I$ $a = 1.82656 + 0.02849I$ $b = -1.82470 - 0.47918I$	$-10.80120 - 1.32037I$	0
$u = 0.15091 + 1.49713I$ $a = -1.57712 + 0.02312I$ $b = 1.61128 + 0.19967I$	$-11.68300 + 0.74838I$	0
$u = 0.15091 - 1.49713I$ $a = -1.57712 - 0.02312I$ $b = 1.61128 - 0.19967I$	$-11.68300 - 0.74838I$	0
$u = 0.27742 + 1.49925I$ $a = -0.448214 + 0.558318I$ $b = 0.382683 + 0.348317I$	$-6.62895 + 9.45962I$	0
$u = 0.27742 - 1.49925I$ $a = -0.448214 - 0.558318I$ $b = 0.382683 - 0.348317I$	$-6.62895 - 9.45962I$	0
$u = 0.044364 + 0.462759I$ $a = -0.53060 + 5.86267I$ $b = 0.10112 - 1.96818I$	$0.91865 + 6.75705I$	$7.45079 - 10.28372I$
$u = 0.044364 - 0.462759I$ $a = -0.53060 - 5.86267I$ $b = 0.10112 + 1.96818I$	$0.91865 - 6.75705I$	$7.45079 + 10.28372I$
$u = -0.57564 + 1.46674I$ $a = -1.55233 + 0.76795I$ $b = 2.32643 + 0.37954I$	$-11.7977 - 10.2663I$	0
$u = -0.57564 - 1.46674I$ $a = -1.55233 - 0.76795I$ $b = 2.32643 - 0.37954I$	$-11.7977 + 10.2663I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.55607 + 1.51761I$ $a = -1.38201 - 0.59027I$ $b = 2.16220 - 0.97168I$	$-10.65990 + 8.34282I$	0
$u = 0.55607 - 1.51761I$ $a = -1.38201 + 0.59027I$ $b = 2.16220 + 0.97168I$	$-10.65990 - 8.34282I$	0
$u = -0.59693 + 1.50465I$ $a = 1.46749 - 0.72531I$ $b = -2.32030 - 0.48441I$	$-12.5086 - 18.8463I$	0
$u = -0.59693 - 1.50465I$ $a = 1.46749 + 0.72531I$ $b = -2.32030 + 0.48441I$	$-12.5086 + 18.8463I$	0
$u = 0.59585 + 1.51780I$ $a = -1.37222 - 0.68797I$ $b = 2.46447 - 0.62689I$	$-10.26930 + 5.43551I$	0
$u = 0.59585 - 1.51780I$ $a = -1.37222 + 0.68797I$ $b = 2.46447 + 0.62689I$	$-10.26930 - 5.43551I$	0
$u = -0.345280 + 0.124604I$ $a = 2.10573 + 0.08014I$ $b = -1.077420 - 0.018069I$	$-5.30413 + 2.01462I$	$-12.63646 - 4.88896I$
$u = -0.345280 - 0.124604I$ $a = 2.10573 - 0.08014I$ $b = -1.077420 + 0.018069I$	$-5.30413 - 2.01462I$	$-12.63646 + 4.88896I$
$u = 0.250555 + 0.237742I$ $a = 2.29032 - 0.59340I$ $b = -1.35597 + 0.59746I$	$-5.96804 + 6.91937I$	$-3.01233 - 0.93944I$
$u = 0.250555 - 0.237742I$ $a = 2.29032 + 0.59340I$ $b = -1.35597 - 0.59746I$	$-5.96804 - 6.91937I$	$-3.01233 + 0.93944I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.63889+1.53810I$ $a=-1.077290+0.722377I$ $b=\ \ 1.67009+0.79165I$	$-11.48350-3.33918I$	0
$u=-0.63889-1.53810I$ $a=-1.077290-0.722377I$ $b=\ \ 1.67009-0.79165I$	$-11.48350+3.33918I$	0
$u=\ \ 0.38035+1.65731I$ $a=\ \ 1.37049+0.36515I$ $b=-2.04092+0.65537I$	$-11.92690+7.29938I$	0
$u=\ \ 0.38035-1.65731I$ $a=\ \ 1.37049-0.36515I$ $b=-2.04092-0.65537I$	$-11.92690-7.29938I$	0
$u=\ \ 0.67595+1.68105I$ $a=\ \ 1.163000+0.578351I$ $b=-2.23966+0.61837I$	$-9.00155+9.42611I$	0
$u=\ \ 0.67595-1.68105I$ $a=\ \ 1.163000-0.578351I$ $b=-2.23966-0.61837I$	$-9.00155-9.42611I$	0
$u=-0.154362+0.104640I$ $a=-7.40875-4.68289I$ $b=-0.490687+0.835151I$	$3.60335-0.92310I$	$8.27870-2.19975I$
$u=-0.154362-0.104640I$ $a=-7.40875+4.68289I$ $b=-0.490687-0.835151I$	$3.60335+0.92310I$	$8.27870+2.19975I$
$u=-0.67030+1.70482I$ $a=\ \ 1.006360-0.567499I$ $b=-1.82639-0.91736I$	$-12.30680+4.01877I$	0
$u=-0.67030-1.70482I$ $a=\ \ 1.006360+0.567499I$ $b=-1.82639+0.91736I$	$-12.30680-4.01877I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 2.31818$ $a = -0.0650049$ $b = -2.72122$	-3.52137	0
$u = -2.51804$ $a = 0.0172369$ $b = 2.77278$	-3.33287	0

II.

$\boldsymbol{I_2^u = \langle 6.08\times10^{52}u^{46}+2.18\times10^{53}u^{45}+\cdots+2.21\times10^{51}b-7.41\times10^{51},\ -9.90\times10^{52}u^{46}-3.59\times10^{53}u^{45}+\cdots+2.21\times10^{51}a+1.90\times10^{52},\ u^{47}+3u^{46}+\cdots+2u+1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix}1\\0\end{pmatrix}$$

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

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

$$a_7 = \begin{pmatrix}44.7752u^{46}+162.474u^{45}+\cdots+43.3255u-8.60858\\-27.4917u^{46}-98.4630u^{45}+\cdots-33.2162u+3.34919\end{pmatrix}$$

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

$$a_2 = \begin{pmatrix}-10.2454u^{46}-17.5138u^{45}+\cdots+49.5662u+26.8546\\-8.52999u^{46}-26.3258u^{45}+\cdots+13.9852u+6.70661\end{pmatrix}$$

$$a_1 = \begin{pmatrix}-18.7754u^{46}-43.8395u^{45}+\cdots+63.5514u+33.5612\\-8.52999u^{46}-26.3258u^{45}+\cdots+13.9852u+6.70661\end{pmatrix}$$

$$a_6 = \begin{pmatrix}32.9606u^{46}+142.595u^{45}+\cdots+111.181u+22.8890\\-10.6601u^{46}-50.3694u^{45}+\cdots-52.5316u-12.2158\end{pmatrix}$$

$$a_8 = \begin{pmatrix}24.6204u^{46}+99.9262u^{45}+\cdots+72.6886u+14.2301\\3.53527u^{46}-30.0611u^{45}+\cdots-182.780u-66.5878\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}-49.5901u^{46}-212.155u^{45}+\cdots-231.801u-63.2234\\23.8048u^{46}+105.460u^{45}+\cdots+119.387u+30.7654\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}-18.7065u^{46}-30.8523u^{45}+\cdots+103.924u+48.6152\\-1.93570u^{46}-0.403318u^{45}+\cdots+28.7279u+8.98027\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-42.9168u^{46}-141.525u^{45}+\cdots-58.4215u+3.04575\\26.5004u^{46}+85.5044u^{45}+\cdots+10.2300u-10.3295\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 15.8861u^{46}+331.012u^{45}+\cdots+1244.44u+450.229$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{47} - 12u^{46} + \cdots + 6039u - 2423$
c_2	$u^{47} + 3u^{46} + \cdots - 4u + 1$
c_3	$u^{47} + 3u^{46} + \cdots + 2u + 1$
c_4	$u^{47} + 2u^{46} + \cdots + 5u + 1$
c_5	$u^{47} + 4u^{46} + \cdots + 1291u - 97$
c_6	$u^{47} - 3u^{46} + \cdots - 4u - 1$
c_7	$u^{47} - 15u^{46} + \cdots + 6u + 1$
c_8	$u^{47} + 9u^{45} + \cdots + 8u + 1$
c_9	$u^{47} - 3u^{46} + \cdots + 2u - 1$
c_{10}	$u^{47} - 14u^{46} + \cdots + 17u - 1$
c_{11}	$u^{47} - 10u^{46} + \cdots + 2u - 1$
c_{12}	$u^{47} + 13u^{46} + \cdots + 2878u + 451$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{47} - 14y^{46} + \cdots + 195064563y - 5870929$
c_2, c_6	$y^{47} - 23y^{46} + \cdots - 30y - 1$
c_3, c_9	$y^{47} + 19y^{46} + \cdots - 30y - 1$
c_4	$y^{47} + 4y^{46} + \cdots - 15y - 1$
c_5	$y^{47} + 22y^{46} + \cdots + 316635y - 9409$
c_7	$y^{47} - 13y^{46} + \cdots + 100y - 1$
c_8	$y^{47} + 18y^{46} + \cdots + 52y - 1$
c_{10}	$y^{47} - 172y^{46} + \cdots + 35y - 1$
c_{11}	$y^{47} - 180y^{46} + \cdots - 14y - 1$
c_{12}	$y^{47} - 5y^{46} + \cdots + 16956y - 203401$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.105146+0.998162I$ $a=\ \ 0.274045-1.366930I$ $b=-0.415598-0.324498I$	$4.86538-0.41768I$	$0.-8.10222I$
$u=-0.105146-0.998162I$ $a=\ \ 0.274045+1.366930I$ $b=-0.415598+0.324498I$	$4.86538+0.41768I$	$0.+8.10222I$
$u=\ \ 0.651371+0.884887I$ $a=\ \ 1.37063+1.85791I$ $b=-2.41335-0.61307I$	$4.69001+2.53653I$	0
$u=\ \ 0.651371-0.884887I$ $a=\ \ 1.37063-1.85791I$ $b=-2.41335+0.61307I$	$4.69001-2.53653I$	0
$u=-0.348807+0.823887I$ $a=\ \ 0.475712+1.023920I$ $b=\ \ 1.071690-0.668459I$	$-4.02963+2.51494I$	$-8.86707-3.63978I$
$u=-0.348807-0.823887I$ $a=\ \ 0.475712-1.023920I$ $b=\ \ 1.071690+0.668459I$	$-4.02963-2.51494I$	$-8.86707+3.63978I$
$u=\ \ 0.318097+0.817477I$ $a=\ \ 0.36835+1.67366I$ $b=-0.904986-0.123091I$	$2.99144+1.39346I$	$1.80386-5.99528I$
$u=\ \ 0.318097-0.817477I$ $a=\ \ 0.36835-1.67366I$ $b=-0.904986+0.123091I$	$2.99144-1.39346I$	$1.80386+5.99528I$
$u=-0.733412+0.440432I$ $a=-0.12064-1.83844I$ $b=-0.851521+0.539070I$	$0.77413-5.14078I$	$3.82273+4.65392I$
$u=-0.733412-0.440432I$ $a=-0.12064+1.83844I$ $b=-0.851521-0.539070I$	$0.77413+5.14078I$	$3.82273-4.65392I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.281457 + 0.766454I$ $a = 0.585242 - 0.948901I$ $b = -1.22961 + 0.94669I$	$-6.48512 + 7.34443I$	$-13.1723 - 8.7081I$
$u = 0.281457 - 0.766454I$ $a = 0.585242 + 0.948901I$ $b = -1.22961 - 0.94669I$	$-6.48512 - 7.34443I$	$-13.1723 + 8.7081I$
$u = 0.245998 + 0.757241I$ $a = 0.14336 + 2.23330I$ $b = -0.756920 - 0.538333I$	$2.99023 + 1.42290I$	$0.17729 - 4.07414I$
$u = 0.245998 - 0.757241I$ $a = 0.14336 - 2.23330I$ $b = -0.756920 + 0.538333I$	$2.99023 - 1.42290I$	$0.17729 + 4.07414I$
$u = -0.764432 + 0.211550I$ $a = -0.354439 - 0.147395I$ $b = 0.947428 + 0.194833I$	$-3.18866 + 1.21872I$	$-4.67605 - 4.43123I$
$u = -0.764432 - 0.211550I$ $a = -0.354439 + 0.147395I$ $b = 0.947428 - 0.194833I$	$-3.18866 - 1.21872I$	$-4.67605 + 4.43123I$
$u = -0.477507 + 1.116060I$ $a = -0.171374 + 1.130490I$ $b = 0.357520 - 0.870002I$	$-5.70927 - 5.68854I$	0
$u = -0.477507 - 1.116060I$ $a = -0.171374 - 1.130490I$ $b = 0.357520 + 0.870002I$	$-5.70927 + 5.68854I$	0
$u = 0.180138 + 0.760699I$ $a = -0.96453 + 1.07777I$ $b = 0.338285 + 0.166664I$	$0.40627 + 2.41053I$	$-11.13556 - 0.91079I$
$u = 0.180138 - 0.760699I$ $a = -0.96453 - 1.07777I$ $b = 0.338285 - 0.166664I$	$0.40627 - 2.41053I$	$-11.13556 + 0.91079I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.234189 + 1.198210I$ $a = -0.616786 + 1.061750I$ $b = 0.43861 - 2.36314I$	$-1.59327 + 7.63578I$	0
$u = 0.234189 - 1.198210I$ $a = -0.616786 - 1.061750I$ $b = 0.43861 + 2.36314I$	$-1.59327 - 7.63578I$	0
$u = -0.543297 + 1.096460I$ $a = -0.488561 - 0.174908I$ $b = 0.142925 + 0.258147I$	$-1.53280 - 8.89429I$	0
$u = -0.543297 - 1.096460I$ $a = -0.488561 + 0.174908I$ $b = 0.142925 - 0.258147I$	$-1.53280 + 8.89429I$	0
$u = -0.206641 + 1.209560I$ $a = -2.21301 + 0.30513I$ $b = 1.95966 + 0.90484I$	$-5.67109 - 4.80509I$	0
$u = -0.206641 - 1.209560I$ $a = -2.21301 - 0.30513I$ $b = 1.95966 - 0.90484I$	$-5.67109 + 4.80509I$	0
$u = 0.029402 + 0.771840I$ $a = -0.34500 - 4.30056I$ $b = 0.19141 + 2.12776I$	$0.42417 - 6.60214I$	$-7.70795 + 4.95511I$
$u = 0.029402 - 0.771840I$ $a = -0.34500 + 4.30056I$ $b = 0.19141 - 2.12776I$	$0.42417 + 6.60214I$	$-7.70795 - 4.95511I$
$u = 0.500094 + 1.136310I$ $a = 0.233016 - 0.288559I$ $b = 0.198326 + 1.040000I$	$0.97614 + 1.63284I$	0
$u = 0.500094 - 1.136310I$ $a = 0.233016 + 0.288559I$ $b = 0.198326 - 1.040000I$	$0.97614 - 1.63284I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.524625+0.484613I$ $a=-0.225420-0.714768I$ $b=\ \ 0.079199-0.517802I$	$0.47614+4.42441I$	$1.28105-7.88625I$
$u=-0.524625-0.484613I$ $a=-0.225420+0.714768I$ $b=\ \ 0.079199+0.517802I$	$0.47614-4.42441I$	$1.28105+7.88625I$
$u=-0.049037+1.403900I$ $a=\ \ 2.04336-0.05571I$ $b=-2.38489+0.10691I$	$-9.63242-5.86063I$	0
$u=-0.049037-1.403900I$ $a=\ \ 2.04336+0.05571I$ $b=-2.38489-0.10691I$	$-9.63242+5.86063I$	0
$u=-0.18031+1.40636I$ $a=-1.44473+0.53307I$ $b=\ \ 1.84090-0.76714I$	$-8.91505-2.17175I$	0
$u=-0.18031-1.40636I$ $a=-1.44473-0.53307I$ $b=\ \ 1.84090+0.76714I$	$-8.91505+2.17175I$	0
$u=\ \ 1.42865+0.23690I$ $a=-0.35767-1.39881I$ $b=-0.01727-2.28701I$	$5.06715+3.84561I$	0
$u=\ \ 1.42865-0.23690I$ $a=-0.35767+1.39881I$ $b=-0.01727+2.28701I$	$5.06715-3.84561I$	0
$u=\ \ 0.375688+0.257924I$ $a=\ \ 0.56927-1.90670I$ $b=\ \ 1.406490-0.007909I$	$-3.31018+2.05803I$	$-6.13101-3.39574I$
$u=\ \ 0.375688-0.257924I$ $a=\ \ 0.56927+1.90670I$ $b=\ \ 1.406490+0.007909I$	$-3.31018-2.05803I$	$-6.13101+3.39574I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.51922 + 1.55840I$ $a = -1.38979 - 0.55432I$ $b = \quad 2.17906 - 0.76929I$	$-10.31670 + 7.53513I$	0
$u = \quad 0.51922 - 1.55840I$ $a = -1.38979 + 0.55432I$ $b = \quad 2.17906 + 0.76929I$	$-10.31670 - 7.53513I$	0
$u = -0.38975 + 1.63283I$ $a = \quad 0.201490 + 0.022545I$ $b = -0.648227 + 1.152680I$	$-3.15829 - 0.38838I$	0
$u = -0.38975 - 1.63283I$ $a = \quad 0.201490 - 0.022545I$ $b = -0.648227 - 1.152680I$	$-3.15829 + 0.38838I$	0
$u = -0.128980 + 0.291305I$ $a = -2.56866 - 0.61457I$ $b = \quad 1.37816 + 0.32852I$	$-2.87262 + 1.43076I$	$0.59490 - 5.66907I$
$u = -0.128980 - 0.291305I$ $a = -2.56866 + 0.61457I$ $b = \quad 1.37816 - 0.32852I$	$-2.87262 - 1.43076I$	$0.59490 + 5.66907I$
$u = -3.62471$ $a = -0.00773740$ $b = -3.81458$	-3.31831	0

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{47}-12u^{46}+\cdots+6039u-2423)$ $\cdot(u^{112}-9u^{111}+\cdots-8787594026u+1142120643)$
c_2	$(u^{47}+3u^{46}+\cdots-4u+1)$ $\cdot(u^{112}+4u^{111}+\cdots-15875381u-1020181)$
c_3	$(u^{47}+3u^{46}+\cdots+2u+1)(u^{112}+4u^{111}+\cdots-58325u-6859)$
c_4	$(u^{47}+2u^{46}+\cdots+5u+1)(u^{112}+3u^{111}+\cdots-55496u-8997)$
c_5	$(u^{47}+4u^{46}+\cdots+1291u-97)$ $\cdot(u^{112}-u^{111}+\cdots-458318546098u+137795579005)$
c_6	$(u^{47}-3u^{46}+\cdots-4u-1)$ $\cdot(u^{112}+4u^{111}+\cdots-15875381u-1020181)$
c_7	$(u^{47}-15u^{46}+\cdots+6u+1)(u^{112}+6u^{111}+\cdots+437u+19)$
c_8	$(u^{47}+9u^{45}+\cdots+8u+1)(u^{112}+u^{111}+\cdots-85u-1)$
c_9	$(u^{47}-3u^{46}+\cdots+2u-1)(u^{112}+4u^{111}+\cdots-58325u-6859)$
c_{10}	$(u^{47}-14u^{46}+\cdots+17u-1)$ $\cdot(u^{112}-3u^{111}+\cdots+13903468u+3529277)$
c_{11}	$(u^{47}-10u^{46}+\cdots+2u-1)$ $\cdot(u^{112}-7u^{111}+\cdots+8027953u+4448443)$
c_{12}	$(u^{47}+13u^{46}+\cdots+2878u+451)$ $\cdot(u^{112}+4u^{111}+\cdots+29852667u+2796781)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{47} - 14y^{46} + \cdots + 195064563y - 5870929)$ $\cdot (y^{112} - 75y^{111} + \cdots - 1.37 \times 10^{19}y + 1.30 \times 10^{18})$
c_2, c_6	$(y^{47} - 23y^{46} + \cdots - 30y - 1)$ $\cdot (y^{112} - 112y^{111} + \cdots + 38800688855225y + 1040769272761)$
c_3, c_9	$(y^{47} + 19y^{46} + \cdots - 30y - 1)$ $\cdot (y^{112} + 78y^{111} + \cdots - 34516755y + 47045881)$
c_4	$(y^{47} + 4y^{46} + \cdots - 15y - 1)$ $\cdot (y^{112} + 31y^{111} + \cdots + 1564391402y + 80946009)$
c_5	$(y^{47} + 22y^{46} + \cdots + 316635y - 9409)$ $\cdot (y^{112} - 55y^{111} + \cdots + 9.87 \times 10^{22}y + 1.90 \times 10^{22})$
c_7	$(y^{47} - 13y^{46} + \cdots + 100y - 1)(y^{112} - 2y^{111} + \cdots - 23009y + 361)$
c_8	$(y^{47} + 18y^{46} + \cdots + 52y - 1)(y^{112} - 7y^{111} + \cdots + 15211y + 1)$
c_{10}	$(y^{47} - 172y^{46} + \cdots + 35y - 1)$ $\cdot (y^{112} - 17y^{111} + \cdots + 813550693297028y + 12455796142729)$
c_{11}	$(y^{47} - 180y^{46} + \cdots - 14y - 1)$ $\cdot (y^{112} - 101y^{111} + \cdots + 1303442294494373y + 19788645124249)$
c_{12}	$(y^{47} - 5y^{46} + \cdots + 16956y - 203401)$ $\cdot (y^{112} - 50y^{111} + \cdots + 1010612326184383y + 7821983961961)$