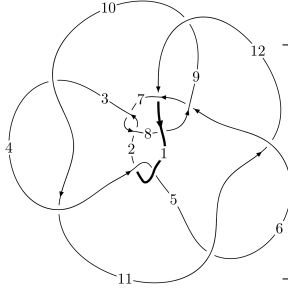
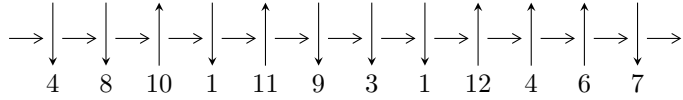


12n₀₈₆₆ (K12n₀₈₆₆)



A knot diagram¹

Linearized knot diagram



Solving Sequence

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

Ideals for irreducible components² of X_{par}

$$I_1^u = \langle 1.24188 \times 10^{496} u^{100} - 3.45972 \times 10^{496} u^{99} + \dots + 4.38110 \times 10^{498} b - 8.43502 \times 10^{499}, \\ - 6.68237 \times 10^{501} u^{100} + 1.69590 \times 10^{502} u^{99} + \dots + 7.40551 \times 10^{503} a + 3.34460 \times 10^{505}, \\ u^{101} - 2u^{100} + \dots - 18346u - 3931 \rangle$$

$$I_2^u = \langle -3.33238 \times 10^{33} u^{30} + 1.40429 \times 10^{33} u^{29} + \dots + 3.70136 \times 10^{33} b + 8.89806 \times 10^{33}, \\ 2.33080 \times 10^{34} u^{30} + 6.01457 \times 10^{33} u^{29} + \dots + 1.85068 \times 10^{34} a + 5.60898 \times 10^{34}, u^{31} - u^{30} + \dots + 3u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 132 representations.

¹The 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>).

²All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

$$\text{I. } I_1^u = \langle 1.24 \times 10^{496} u^{100} - 3.46 \times 10^{496} u^{99} + \dots + 4.38 \times 10^{498} b - 8.44 \times 10^{499}, -6.68 \times 10^{501} u^{100} + 1.70 \times 10^{502} u^{99} + \dots + 7.41 \times 10^{503} a + 3.34 \times 10^{505}, u^{101} - 2u^{100} + \dots - 18346u - 3931 \rangle$$

(i) Arc colorings

$$\begin{aligned} a_3 &= \begin{pmatrix} 1 \\ 0 \end{pmatrix} \\ a_{10} &= \begin{pmatrix} 0 \\ u \end{pmatrix} \\ a_4 &= \begin{pmatrix} 1 \\ -u^2 \end{pmatrix} \\ a_8 &= \begin{pmatrix} 0.00902352u^{100} - 0.0229006u^{99} + \dots - 189.264u - 45.1637 \\ -0.00283463u^{100} + 0.00789692u^{99} + \dots + 62.3350u + 19.2532 \end{pmatrix} \\ a_{11} &= \begin{pmatrix} u \\ -u^3 + u \end{pmatrix} \\ a_2 &= \begin{pmatrix} 0.0101284u^{100} - 0.0271243u^{99} + \dots - 180.804u - 68.4594 \\ 0.00236453u^{100} - 0.00531970u^{99} + \dots - 89.3719u - 21.0059 \end{pmatrix} \\ a_1 &= \begin{pmatrix} 0.0174868u^{100} - 0.0458591u^{99} + \dots - 356.352u - 116.461 \\ 0.000717401u^{100} - 0.00150781u^{99} + \dots - 44.5835u - 5.21116 \end{pmatrix} \\ a_5 &= \begin{pmatrix} 0.00667899u^{100} - 0.0155294u^{99} + \dots - 143.768u - 59.2234 \\ 0.00156664u^{100} - 0.00347406u^{99} + \dots + 7.95421u - 8.67759 \end{pmatrix} \\ a_6 &= \begin{pmatrix} 0.00730544u^{100} - 0.0174596u^{99} + \dots - 149.290u - 57.3470 \\ 0.00189055u^{100} - 0.00468428u^{99} + \dots + 12.3972u - 4.13842 \end{pmatrix} \\ a_7 &= \begin{pmatrix} 0.00618889u^{100} - 0.0150037u^{99} + \dots - 126.929u - 25.9105 \\ -0.00283463u^{100} + 0.00789692u^{99} + \dots + 62.3350u + 19.2532 \end{pmatrix} \\ a_{12} &= \begin{pmatrix} 0.00373393u^{100} - 0.0102203u^{99} + \dots - 93.3892u - 35.7880 \\ 0.00459301u^{100} - 0.0114226u^{99} + \dots - 140.650u - 35.6539 \end{pmatrix} \\ a_9 &= \begin{pmatrix} -0.0138835u^{100} + 0.0364496u^{99} + \dots + 227.848u + 80.5728 \\ -0.00415038u^{100} + 0.0118164u^{99} + \dots + 27.4684u + 6.37850 \end{pmatrix} \end{aligned}$$

(ii) Obstruction class = -1

$$\text{(iii) Cusp Shapes} = 0.00493355u^{100} - 0.0156200u^{99} + \dots + 258.329u + 60.2116$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{101} - 7u^{100} + \dots - 533u + 356$
c_2, c_7	$u^{101} - u^{100} + \dots + 72811u - 14123$
c_3, c_{10}	$u^{101} - 2u^{100} + \dots - 18346u - 3931$
c_5, c_{11}	$u^{101} + 2u^{100} + \dots + 641239u + 167761$
c_6	$u^{101} - 10u^{100} + \dots + 53u - 7$
c_8	$u^{101} - 14u^{99} + \dots - 238884u + 56743$
c_9	$u^{101} - 12u^{99} + \dots + 549u + 319$
c_{12}	$u^{101} - u^{100} + \dots + 41u - 2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{101} - 71y^{100} + \dots + 18234321y - 126736$
c_2, c_7	$y^{101} + 51y^{100} + \dots - 7022994229y - 199459129$
c_3, c_{10}	$y^{101} - 34y^{100} + \dots + 615503752y - 15452761$
c_5, c_{11}	$y^{101} - 64y^{100} + \dots + 814720100043y - 28143753121$
c_6	$y^{101} - 4y^{100} + \dots - 411y - 49$
c_8	$y^{101} - 28y^{100} + \dots + 62222823240y - 3219768049$
c_9	$y^{101} - 24y^{100} + \dots + 8075431y - 101761$
c_{12}	$y^{101} - 15y^{100} + \dots + 205y - 4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.335741 + 0.942623I$ $a = 0.171336 - 0.461058I$ $b = -0.832272 + 0.473296I$	$-2.68327 + 2.47464I$	0
$u = -0.335741 - 0.942623I$ $a = 0.171336 + 0.461058I$ $b = -0.832272 - 0.473296I$	$-2.68327 - 2.47464I$	0
$u = 0.739090 + 0.647908I$ $a = -0.801576 - 0.737358I$ $b = -0.322770 + 1.027790I$	$1.12451 + 2.33115I$	0
$u = 0.739090 - 0.647908I$ $a = -0.801576 + 0.737358I$ $b = -0.322770 - 1.027790I$	$1.12451 - 2.33115I$	0
$u = -0.908054 + 0.479569I$ $a = -1.331810 + 0.464404I$ $b = 0.091557 - 1.002580I$	$5.34262 + 4.93001I$	0
$u = -0.908054 - 0.479569I$ $a = -1.331810 - 0.464404I$ $b = 0.091557 + 1.002580I$	$5.34262 - 4.93001I$	0
$u = 0.760395 + 0.602455I$ $a = 0.28359 + 2.30805I$ $b = 0.548337 - 0.958511I$	$-4.43347 + 0.86302I$	0
$u = 0.760395 - 0.602455I$ $a = 0.28359 - 2.30805I$ $b = 0.548337 + 0.958511I$	$-4.43347 - 0.86302I$	0
$u = -0.680557 + 0.642379I$ $a = -0.25678 + 2.61848I$ $b = -0.549331 - 0.549526I$	$-1.98269 + 5.75991I$	0
$u = -0.680557 - 0.642379I$ $a = -0.25678 - 2.61848I$ $b = -0.549331 + 0.549526I$	$-1.98269 - 5.75991I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.990174 + 0.391333I$ $a = 0.683315 - 0.852245I$ $b = 0.724664 + 0.990879I$	$5.46158 - 3.32830I$	0
$u = -0.990174 - 0.391333I$ $a = 0.683315 + 0.852245I$ $b = 0.724664 - 0.990879I$	$5.46158 + 3.32830I$	0
$u = -0.014589 + 1.074460I$ $a = -0.560726 - 0.156317I$ $b = 0.356570 - 0.622040I$	$-0.18310 + 4.10072I$	0
$u = -0.014589 - 1.074460I$ $a = -0.560726 + 0.156317I$ $b = 0.356570 + 0.622040I$	$-0.18310 - 4.10072I$	0
$u = -0.804153 + 0.420138I$ $a = -0.72387 - 2.61788I$ $b = 0.323477 + 0.580944I$	$-3.22125 - 2.25400I$	0
$u = -0.804153 - 0.420138I$ $a = -0.72387 + 2.61788I$ $b = 0.323477 - 0.580944I$	$-3.22125 + 2.25400I$	0
$u = 0.591754 + 0.670470I$ $a = -1.36762 - 2.85537I$ $b = -0.609413 + 0.741411I$	$-1.92951 + 7.45316I$	0
$u = 0.591754 - 0.670470I$ $a = -1.36762 + 2.85537I$ $b = -0.609413 - 0.741411I$	$-1.92951 - 7.45316I$	0
$u = -0.879068 + 0.097691I$ $a = -0.38877 + 2.34684I$ $b = 0.18369 - 1.44819I$	$6.83409 + 1.24645I$	$8.04713 + 6.47613I$
$u = -0.879068 - 0.097691I$ $a = -0.38877 - 2.34684I$ $b = 0.18369 + 1.44819I$	$6.83409 - 1.24645I$	$8.04713 - 6.47613I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.112940 + 0.099762I$ $a = 0.20418 + 1.41730I$ $b = -0.02840 - 1.78962I$	$8.25044 - 4.75376I$	0
$u = 1.112940 - 0.099762I$ $a = 0.20418 - 1.41730I$ $b = -0.02840 + 1.78962I$	$8.25044 + 4.75376I$	0
$u = -0.883426 + 0.699757I$ $a = -0.426704 + 0.674530I$ $b = -0.819790 - 1.089020I$	$5.04912 - 9.82598I$	0
$u = -0.883426 - 0.699757I$ $a = -0.426704 - 0.674530I$ $b = -0.819790 + 1.089020I$	$5.04912 + 9.82598I$	0
$u = -0.769396 + 0.408713I$ $a = -0.85103 + 1.93608I$ $b = -0.28459 - 1.54058I$	$6.14574 - 3.41683I$	$0. + 5.62687I$
$u = -0.769396 - 0.408713I$ $a = -0.85103 - 1.93608I$ $b = -0.28459 + 1.54058I$	$6.14574 + 3.41683I$	$0. - 5.62687I$
$u = 0.981659 + 0.567919I$ $a = 0.372093 + 0.614692I$ $b = -1.162230 - 0.719141I$	$-3.71955 + 3.78254I$	0
$u = 0.981659 - 0.567919I$ $a = 0.372093 - 0.614692I$ $b = -1.162230 + 0.719141I$	$-3.71955 - 3.78254I$	0
$u = 0.767258 + 0.387072I$ $a = -2.26933 - 0.52214I$ $b = -0.045075 + 0.748539I$	$4.13125 + 4.58781I$	$6.30028 - 8.20640I$
$u = 0.767258 - 0.387072I$ $a = -2.26933 + 0.52214I$ $b = -0.045075 - 0.748539I$	$4.13125 - 4.58781I$	$6.30028 + 8.20640I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.845471 + 0.056980I$ $a = -0.513384 - 0.684658I$ $b = -0.894467 + 1.025650I$	$4.59577 - 2.95804I$	$7.45664 + 2.51259I$
$u = 0.845471 - 0.056980I$ $a = -0.513384 + 0.684658I$ $b = -0.894467 - 1.025650I$	$4.59577 + 2.95804I$	$7.45664 - 2.51259I$
$u = 0.746283 + 0.901380I$ $a = -0.387739 - 0.347019I$ $b = 0.743926 + 0.444324I$	$-1.64047 + 3.73610I$	0
$u = 0.746283 - 0.901380I$ $a = -0.387739 + 0.347019I$ $b = 0.743926 - 0.444324I$	$-1.64047 - 3.73610I$	0
$u = 0.810757 + 0.859245I$ $a = 0.566963 + 0.068944I$ $b = 0.334603 - 0.799273I$	$3.36674 + 3.99935I$	0
$u = 0.810757 - 0.859245I$ $a = 0.566963 - 0.068944I$ $b = 0.334603 + 0.799273I$	$3.36674 - 3.99935I$	0
$u = -1.041540 + 0.648552I$ $a = -0.263104 + 0.251661I$ $b = 1.39273 - 0.49381I$	$-0.78443 - 10.85120I$	0
$u = -1.041540 - 0.648552I$ $a = -0.263104 - 0.251661I$ $b = 1.39273 + 0.49381I$	$-0.78443 + 10.85120I$	0
$u = 0.544622 + 0.503086I$ $a = 2.78374 + 1.35172I$ $b = 0.23914 - 1.41293I$	$5.65417 + 7.51092I$	$-2.1146 - 17.6086I$
$u = 0.544622 - 0.503086I$ $a = 2.78374 - 1.35172I$ $b = 0.23914 + 1.41293I$	$5.65417 - 7.51092I$	$-2.1146 + 17.6086I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.616737 + 0.384675I$ $a = -0.425365 - 0.797073I$ $b = -1.024740 + 0.060330I$	$-3.08884 - 0.48622I$	$-3.61031 - 4.04424I$
$u = -0.616737 - 0.384675I$ $a = -0.425365 + 0.797073I$ $b = -1.024740 - 0.060330I$	$-3.08884 + 0.48622I$	$-3.61031 + 4.04424I$
$u = 1.221840 + 0.379189I$ $a = -0.174467 + 1.327200I$ $b = 0.591202 - 0.984633I$	$1.336430 + 0.378146I$	0
$u = 1.221840 - 0.379189I$ $a = -0.174467 - 1.327200I$ $b = 0.591202 + 0.984633I$	$1.336430 - 0.378146I$	0
$u = 0.653739 + 0.296100I$ $a = 0.680491 + 0.398156I$ $b = -1.40608 - 0.23432I$	$-0.80163 + 2.56158I$	$12.54411 - 5.21051I$
$u = 0.653739 - 0.296100I$ $a = 0.680491 - 0.398156I$ $b = -1.40608 + 0.23432I$	$-0.80163 - 2.56158I$	$12.54411 + 5.21051I$
$u = 1.208470 + 0.441330I$ $a = 0.377011 + 0.622196I$ $b = 0.574325 - 0.859104I$	$5.22199 + 1.86600I$	0
$u = 1.208470 - 0.441330I$ $a = 0.377011 - 0.622196I$ $b = 0.574325 + 0.859104I$	$5.22199 - 1.86600I$	0
$u = -0.587445 + 0.393381I$ $a = 0.63747 - 1.43592I$ $b = 0.721097 + 0.304570I$	$0.03033 - 4.19051I$	$-1.93243 + 7.90155I$
$u = -0.587445 - 0.393381I$ $a = 0.63747 + 1.43592I$ $b = 0.721097 - 0.304570I$	$0.03033 + 4.19051I$	$-1.93243 - 7.90155I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.979732 + 0.863136I$ $a = -0.347825 - 1.326540I$ $b = -0.587013 + 1.060600I$	$-0.92319 + 2.71662I$	0
$u = 0.979732 - 0.863136I$ $a = -0.347825 + 1.326540I$ $b = -0.587013 - 1.060600I$	$-0.92319 - 2.71662I$	0
$u = -1.297700 + 0.161416I$ $a = 0.46874 - 1.36653I$ $b = 0.499603 + 1.049160I$	$6.53180 - 3.12071I$	0
$u = -1.297700 - 0.161416I$ $a = 0.46874 + 1.36653I$ $b = 0.499603 - 1.049160I$	$6.53180 + 3.12071I$	0
$u = -1.020200 + 0.836422I$ $a = 0.28293 - 1.41691I$ $b = 0.429007 + 1.318000I$	$-0.27055 - 5.95720I$	0
$u = -1.020200 - 0.836422I$ $a = 0.28293 + 1.41691I$ $b = 0.429007 - 1.318000I$	$-0.27055 + 5.95720I$	0
$u = -0.379681 + 1.284900I$ $a = -0.225697 + 0.075557I$ $b = 0.596090 - 0.670522I$	$-5.29363 + 3.72640I$	0
$u = -0.379681 - 1.284900I$ $a = -0.225697 - 0.075557I$ $b = 0.596090 + 0.670522I$	$-5.29363 - 3.72640I$	0
$u = -1.196020 + 0.617356I$ $a = -0.15292 + 1.54805I$ $b = -0.66207 - 1.35538I$	$3.01876 - 9.52238I$	0
$u = -1.196020 - 0.617356I$ $a = -0.15292 - 1.54805I$ $b = -0.66207 + 1.35538I$	$3.01876 + 9.52238I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.649051 + 0.030330I$		
$a = 2.14482 - 1.37227I$	$3.99872 + 1.68689I$	$5.43204 - 0.05309I$
$b = 0.224354 + 0.938503I$		
$u = -0.649051 - 0.030330I$		
$a = 2.14482 + 1.37227I$	$3.99872 - 1.68689I$	$5.43204 + 0.05309I$
$b = 0.224354 - 0.938503I$		
$u = 0.592249 + 0.196535I$		
$a = -0.478930 - 0.351702I$	$1.29118 + 0.90327I$	$4.33429 - 1.07742I$
$b = 0.290343 + 0.411437I$		
$u = 0.592249 - 0.196535I$		
$a = -0.478930 + 0.351702I$	$1.29118 - 0.90327I$	$4.33429 + 1.07742I$
$b = 0.290343 - 0.411437I$		
$u = -0.719396 + 1.192760I$		
$a = 0.584853 - 0.709217I$	$-1.37403 - 1.06324I$	0
$b = -0.283753 + 0.753818I$		
$u = -0.719396 - 1.192760I$		
$a = 0.584853 + 0.709217I$	$-1.37403 + 1.06324I$	0
$b = -0.283753 - 0.753818I$		
$u = -1.03742 + 0.98838I$		
$a = 0.141770 + 0.014842I$	$-0.898802 - 0.973883I$	0
$b = -1.33249 + 0.80314I$		
$u = -1.03742 - 0.98838I$		
$a = 0.141770 - 0.014842I$	$-0.898802 + 0.973883I$	0
$b = -1.33249 - 0.80314I$		
$u = -1.19746 + 0.79980I$		
$a = 0.47010 - 1.34436I$	$0.13777 - 5.90036I$	0
$b = 0.842329 + 0.975042I$		
$u = -1.19746 - 0.79980I$		
$a = 0.47010 + 1.34436I$	$0.13777 + 5.90036I$	0
$b = 0.842329 - 0.975042I$		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.230391 + 0.510073I$ $a = -0.707070 - 0.066360I$ $b = -0.574964 + 0.286969I$	$-1.069040 + 0.837326I$	$-5.25343 - 2.47679I$
$u = -0.230391 - 0.510073I$ $a = -0.707070 + 0.066360I$ $b = -0.574964 - 0.286969I$	$-1.069040 - 0.837326I$	$-5.25343 + 2.47679I$
$u = -0.408639 + 0.328571I$ $a = 2.29786 - 0.47366I$ $b = 0.236342 + 1.202430I$	$2.82869 + 1.16775I$	$1.92656 - 2.97243I$
$u = -0.408639 - 0.328571I$ $a = 2.29786 + 0.47366I$ $b = 0.236342 - 1.202430I$	$2.82869 - 1.16775I$	$1.92656 + 2.97243I$
$u = -1.30418 + 0.75032I$ $a = 0.21763 - 1.52567I$ $b = 0.593003 + 1.101090I$	$0.34364 - 8.84469I$	0
$u = -1.30418 - 0.75032I$ $a = 0.21763 + 1.52567I$ $b = 0.593003 - 1.101090I$	$0.34364 + 8.84469I$	0
$u = 1.48535 + 0.31011I$ $a = 0.211631 + 0.827352I$ $b = 0.566842 - 0.771589I$	$5.44294 + 1.31425I$	0
$u = 1.48535 - 0.31011I$ $a = 0.211631 - 0.827352I$ $b = 0.566842 + 0.771589I$	$5.44294 - 1.31425I$	0
$u = 0.32442 + 1.49185I$ $a = -0.049576 - 0.294942I$ $b = 0.145568 + 0.412100I$	$-3.93645 + 3.12134I$	0
$u = 0.32442 - 1.49185I$ $a = -0.049576 + 0.294942I$ $b = 0.145568 - 0.412100I$	$-3.93645 - 3.12134I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.34291 + 0.74284I$ $a = -0.200184 + 1.309160I$ $b = -0.817867 - 1.152050I$	$-2.17648 - 10.86010I$	0
$u = -1.34291 - 0.74284I$ $a = -0.200184 - 1.309160I$ $b = -0.817867 + 1.152050I$	$-2.17648 + 10.86010I$	0
$u = 1.40351 + 0.69964I$ $a = -0.062209 - 1.265710I$ $b = -0.475748 + 1.035480I$	$-0.02173 + 4.35781I$	0
$u = 1.40351 - 0.69964I$ $a = -0.062209 + 1.265710I$ $b = -0.475748 - 1.035480I$	$-0.02173 - 4.35781I$	0
$u = -0.320752 + 0.267825I$ $a = -1.74148 + 1.65422I$ $b = 0.873019 - 0.534827I$	$-0.10842 + 4.70713I$	$-0.07535 - 6.04334I$
$u = -0.320752 - 0.267825I$ $a = -1.74148 - 1.65422I$ $b = 0.873019 + 0.534827I$	$-0.10842 - 4.70713I$	$-0.07535 + 6.04334I$
$u = 1.06191 + 1.19940I$ $a = -0.175207 - 0.266146I$ $b = 0.94367 + 1.18741I$	$0.289155 - 0.963733I$	0
$u = 1.06191 - 1.19940I$ $a = -0.175207 + 0.266146I$ $b = 0.94367 - 1.18741I$	$0.289155 + 0.963733I$	0
$u = 1.31849 + 0.91086I$ $a = 0.390967 + 1.307130I$ $b = 0.81059 - 1.33031I$	$1.9965 + 18.5154I$	0
$u = 1.31849 - 0.91086I$ $a = 0.390967 - 1.307130I$ $b = 0.81059 + 1.33031I$	$1.9965 - 18.5154I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.27766 + 0.97157I$ $a = -0.491363 - 1.206580I$ $b = -0.86156 + 1.39694I$	$1.64453 + 9.51349I$	0
$u = 1.27766 - 0.97157I$ $a = -0.491363 + 1.206580I$ $b = -0.86156 - 1.39694I$	$1.64453 - 9.51349I$	0
$u = 0.67244 + 1.46914I$ $a = 0.266077 + 0.319742I$ $b = -0.553114 - 1.081280I$	$-0.25824 - 10.25430I$	0
$u = 0.67244 - 1.46914I$ $a = 0.266077 - 0.319742I$ $b = -0.553114 + 1.081280I$	$-0.25824 + 10.25430I$	0
$u = 0.353230$ $a = -0.00569879$ $b = 1.73770$	-6.34209	43.4240
$u = 1.65919 + 0.14081I$ $a = -0.37637 - 1.45740I$ $b = -0.321426 + 0.650504I$	$7.85758 + 5.71972I$	0
$u = 1.65919 - 0.14081I$ $a = -0.37637 + 1.45740I$ $b = -0.321426 - 0.650504I$	$7.85758 - 5.71972I$	0
$u = -1.85327 + 0.07108I$ $a = 0.037537 - 1.019320I$ $b = -0.080386 + 1.118770I$	$10.05940 - 3.85887I$	0
$u = -1.85327 - 0.07108I$ $a = 0.037537 + 1.019320I$ $b = -0.080386 - 1.118770I$	$10.05940 + 3.85887I$	0
$u = 0.53210 + 1.95211I$ $a = -0.195415 + 0.027385I$ $b = 0.28462 + 1.96358I$	$0.136814 - 0.690209I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.53210 - 1.95211I$		
$a = -0.195415 - 0.027385I$	$0.136814 + 0.690209I$	0
$b = 0.28462 - 1.96358I$		

II.

$$I_2^u = \langle -3.33 \times 10^{33} u^{30} + 1.40 \times 10^{33} u^{29} + \dots + 3.70 \times 10^{33} b + 8.90 \times 10^{33}, 2.33 \times 10^{34} u^{30} + 6.01 \times 10^{33} u^{29} + \dots + 1.85 \times 10^{34} a + 5.61 \times 10^{34}, u^{31} - u^{30} + \dots + 3u + 1 \rangle$$

(i) Arc colorings

$$\begin{aligned} a_3 &= \begin{pmatrix} 1 \\ 0 \end{pmatrix} \\ a_{10} &= \begin{pmatrix} 0 \\ u \end{pmatrix} \\ a_4 &= \begin{pmatrix} 1 \\ -u^2 \end{pmatrix} \\ a_8 &= \begin{pmatrix} -1.25943u^{30} - 0.324992u^{29} + \dots - 9.17134u - 3.03076 \\ 0.900313u^{30} - 0.379399u^{29} + \dots - 0.557782u - 2.40400 \end{pmatrix} \\ a_{11} &= \begin{pmatrix} u \\ -u^3 + u \end{pmatrix} \\ a_2 &= \begin{pmatrix} 0.0630092u^{30} + 1.20514u^{29} + \dots + 24.8663u + 4.36181 \\ -2.56945u^{30} + 1.33702u^{29} + \dots + 5.03786u - 1.14698 \end{pmatrix} \\ a_1 &= \begin{pmatrix} -0.923553u^{30} + 1.41843u^{29} + \dots + 26.0367u + 1.94668 \\ -2.29012u^{30} + 1.10519u^{29} + \dots + 1.73148u - 1.92026 \end{pmatrix} \\ a_5 &= \begin{pmatrix} 2.02256u^{30} - 2.57004u^{29} + \dots - 14.4691u + 9.69211 \\ 1.69481u^{30} - 1.06445u^{29} + \dots + 0.319419u + 8.33953 \end{pmatrix} \\ a_6 &= \begin{pmatrix} 2.79454u^{30} - 3.27301u^{29} + \dots - 18.1079u + 8.41600 \\ 2.72879u^{30} - 1.68146u^{29} + \dots - 2.34035u + 7.13243 \end{pmatrix} \\ a_7 &= \begin{pmatrix} -0.359115u^{30} - 0.704391u^{29} + \dots - 9.72912u - 5.43476 \\ 0.900313u^{30} - 0.379399u^{29} + \dots - 0.557782u - 2.40400 \end{pmatrix} \\ a_{12} &= \begin{pmatrix} -0.710459u^{30} + 0.709167u^{29} + \dots + 9.93391u - 5.22559 \\ -3.08296u^{30} + 1.59187u^{29} + \dots + 6.77351u - 2.51410 \end{pmatrix} \\ a_9 &= \begin{pmatrix} 2.67082u^{30} - 1.81548u^{29} + \dots - 21.6282u + 5.50354 \\ 2.16162u^{30} - 1.42701u^{29} + \dots - 10.5432u + 4.49393 \end{pmatrix} \end{aligned}$$

(ii) Obstruction class = 1

(iii) Cusp Shapes = $-8.00122u^{30} + 5.61008u^{29} + \dots + 45.6712u - 40.7698$

(iv) u -Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{31} - 6u^{30} + \dots - u - 1$
c_2	$u^{31} + 11u^{29} + \dots + 7u^2 + 1$
c_3	$u^{31} - u^{30} + \dots + 3u + 1$
c_4	$u^{31} + 6u^{30} + \dots - u + 1$
c_5	$u^{31} - u^{30} + \dots - 16u + 17$
c_6	$u^{31} + 3u^{30} + \dots - 2u + 1$
c_7	$u^{31} + 11u^{29} + \dots - 7u^2 - 1$
c_8	$u^{31} + 3u^{30} + \dots + 511u + 169$
c_9	$u^{31} + 5u^{30} + \dots + 6u + 1$
c_{10}	$u^{31} + u^{30} + \dots + 3u - 1$
c_{11}	$u^{31} + u^{30} + \dots - 16u - 17$
c_{12}	$u^{31} - 6u^{29} + \dots + 9u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{31} - 20y^{30} + \dots - 21y - 1$
c_2, c_7	$y^{31} + 22y^{30} + \dots - 14y - 1$
c_3, c_{10}	$y^{31} - 11y^{30} + \dots + 27y - 1$
c_5, c_{11}	$y^{31} - 29y^{30} + \dots + 3350y - 289$
c_6	$y^{31} - 9y^{30} + \dots - 36y - 1$
c_8	$y^{31} - 21y^{30} + \dots + 50547y - 28561$
c_9	$y^{31} - 13y^{30} + \dots + 26y - 1$
c_{12}	$y^{31} - 12y^{30} + \dots + y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.828439 + 0.629602I$ $a = -1.054830 - 0.102556I$ $b = -0.262566 + 0.705504I$	$3.14694 + 3.42445I$	$0.73846 - 1.29408I$
$u = 0.828439 - 0.629602I$ $a = -1.054830 + 0.102556I$ $b = -0.262566 - 0.705504I$	$3.14694 - 3.42445I$	$0.73846 + 1.29408I$
$u = -1.117480 + 0.183893I$ $a = -0.53037 + 1.63679I$ $b = -0.451364 - 1.299830I$	$7.54882 - 2.85801I$	$11.59200 + 3.37399I$
$u = -1.117480 - 0.183893I$ $a = -0.53037 - 1.63679I$ $b = -0.451364 + 1.299830I$	$7.54882 + 2.85801I$	$11.59200 - 3.37399I$
$u = -0.852539 + 0.045200I$ $a = -0.68383 + 2.17980I$ $b = 0.03141 - 1.47544I$	$6.77813 + 1.85648I$	$7.73203 - 6.04751I$
$u = -0.852539 - 0.045200I$ $a = -0.68383 - 2.17980I$ $b = 0.03141 + 1.47544I$	$6.77813 - 1.85648I$	$7.73203 + 6.04751I$
$u = 0.436864 + 0.551989I$ $a = -0.72369 - 2.03100I$ $b = 0.580082 + 0.159789I$	$-3.71980 + 1.42092I$	$-6.90223 - 0.31504I$
$u = 0.436864 - 0.551989I$ $a = -0.72369 + 2.03100I$ $b = 0.580082 - 0.159789I$	$-3.71980 - 1.42092I$	$-6.90223 + 0.31504I$
$u = 0.411946 + 0.522013I$ $a = -0.864410 + 0.095045I$ $b = 1.123080 + 0.212034I$	$-1.24473 + 2.38697I$	$-3.91107 + 0.55228I$
$u = 0.411946 - 0.522013I$ $a = -0.864410 - 0.095045I$ $b = 1.123080 - 0.212034I$	$-1.24473 - 2.38697I$	$-3.91107 - 0.55228I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.075390 + 0.819129I$ $a = -0.22108 - 1.44287I$ $b = -0.475347 + 0.977407I$	$-0.96097 + 3.49645I$	$-3.31187 - 6.21629I$
$u = 1.075390 - 0.819129I$ $a = -0.22108 + 1.44287I$ $b = -0.475347 - 0.977407I$	$-0.96097 - 3.49645I$	$-3.31187 + 6.21629I$
$u = 0.472017 + 0.420664I$ $a = 2.87166 + 0.88857I$ $b = 0.313317 - 1.376130I$	$5.86284 + 7.19829I$	$9.66632 - 0.23841I$
$u = 0.472017 - 0.420664I$ $a = 2.87166 - 0.88857I$ $b = 0.313317 + 1.376130I$	$5.86284 - 7.19829I$	$9.66632 + 0.23841I$
$u = -0.554624 + 0.187916I$ $a = 1.66688 + 0.15757I$ $b = 0.502638 + 0.919830I$	$3.58802 + 3.15662I$	$-0.17421 - 4.42314I$
$u = -0.554624 - 0.187916I$ $a = 1.66688 - 0.15757I$ $b = 0.502638 - 0.919830I$	$3.58802 - 3.15662I$	$-0.17421 + 4.42314I$
$u = -1.19444 + 0.77619I$ $a = 0.35832 - 1.53345I$ $b = 0.685226 + 1.137550I$	$0.62134 - 8.22186I$	$2.16110 + 4.76976I$
$u = -1.19444 - 0.77619I$ $a = 0.35832 + 1.53345I$ $b = 0.685226 - 1.137550I$	$0.62134 + 8.22186I$	$2.16110 - 4.76976I$
$u = 0.073621 + 0.540941I$ $a = 4.19742 + 1.11620I$ $b = -0.414603 - 0.217285I$	$-1.53139 - 6.60983I$	$1.62887 + 6.05669I$
$u = 0.073621 - 0.540941I$ $a = 4.19742 - 1.11620I$ $b = -0.414603 + 0.217285I$	$-1.53139 + 6.60983I$	$1.62887 - 6.05669I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.42934 + 0.35027I$ $a = -0.277609 - 0.725974I$ $b = -0.562098 + 0.755715I$	$5.63145 + 1.54201I$	$19.2423 - 5.6336I$
$u = 1.42934 - 0.35027I$ $a = -0.277609 + 0.725974I$ $b = -0.562098 - 0.755715I$	$5.63145 - 1.54201I$	$19.2423 + 5.6336I$
$u = 0.28223 + 1.47450I$ $a = -0.152910 - 0.282108I$ $b = 0.027667 + 0.393634I$	$-3.89632 + 3.27798I$	$3.2164 - 25.4567I$
$u = 0.28223 - 1.47450I$ $a = -0.152910 + 0.282108I$ $b = 0.027667 - 0.393634I$	$-3.89632 - 3.27798I$	$3.2164 + 25.4567I$
$u = -1.60430 + 0.21266I$ $a = 0.58871 - 1.39266I$ $b = 0.222732 + 0.716619I$	$8.10570 - 5.50623I$	$11.76411 + 0.I$
$u = -1.60430 - 0.21266I$ $a = 0.58871 + 1.39266I$ $b = 0.222732 - 0.716619I$	$8.10570 + 5.50623I$	$11.76411 + 0.I$
$u = 1.66186 + 0.10942I$ $a = 0.139325 + 1.175200I$ $b = 0.011956 - 1.353030I$	$10.94150 - 4.38280I$	$8.52717 + 0.I$
$u = 1.66186 - 0.10942I$ $a = 0.139325 - 1.175200I$ $b = 0.011956 + 1.353030I$	$10.94150 + 4.38280I$	$8.52717 + 0.I$
$u = -0.205159$ $a = -1.03514$ $b = -1.67185$	-6.43108	-46.7320
$u = -0.74573 + 1.88016I$ $a = 0.203971 - 0.029621I$ $b = -0.49620 + 1.88641I$	$0.177498 + 0.685373I$	0

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.74573 - 1.88016I$		
$a = 0.203971 + 0.029621I$	$0.177498 - 0.685373I$	0
$b = -0.49620 - 1.88641I$		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{31} - 6u^{30} + \dots - u - 1)(u^{101} - 7u^{100} + \dots - 533u + 356)$
c_2	$(u^{31} + 11u^{29} + \dots + 7u^2 + 1)(u^{101} - u^{100} + \dots + 72811u - 14123)$
c_3	$(u^{31} - u^{30} + \dots + 3u + 1)(u^{101} - 2u^{100} + \dots - 18346u - 3931)$
c_4	$(u^{31} + 6u^{30} + \dots - u + 1)(u^{101} - 7u^{100} + \dots - 533u + 356)$
c_5	$(u^{31} - u^{30} + \dots - 16u + 17)(u^{101} + 2u^{100} + \dots + 641239u + 167761)$
c_6	$(u^{31} + 3u^{30} + \dots - 2u + 1)(u^{101} - 10u^{100} + \dots + 53u - 7)$
c_7	$(u^{31} + 11u^{29} + \dots - 7u^2 - 1)(u^{101} - u^{100} + \dots + 72811u - 14123)$
c_8	$(u^{31} + 3u^{30} + \dots + 511u + 169)$ $\cdot (u^{101} - 14u^{99} + \dots - 238884u + 56743)$
c_9	$(u^{31} + 5u^{30} + \dots + 6u + 1)(u^{101} - 12u^{99} + \dots + 549u + 319)$
c_{10}	$(u^{31} + u^{30} + \dots + 3u - 1)(u^{101} - 2u^{100} + \dots - 18346u - 3931)$
c_{11}	$(u^{31} + u^{30} + \dots - 16u - 17)(u^{101} + 2u^{100} + \dots + 641239u + 167761)$
c_{12}	$(u^{31} - 6u^{29} + \dots + 9u + 1)(u^{101} - u^{100} + \dots + 41u - 2)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y^{31} - 20y^{30} + \dots - 21y - 1)$ $\cdot (y^{101} - 71y^{100} + \dots + 18234321y - 126736)$
c_2, c_7	$(y^{31} + 22y^{30} + \dots - 14y - 1)$ $\cdot (y^{101} + 51y^{100} + \dots - 7022994229y - 199459129)$
c_3, c_{10}	$(y^{31} - 11y^{30} + \dots + 27y - 1)$ $\cdot (y^{101} - 34y^{100} + \dots + 615503752y - 15452761)$
c_5, c_{11}	$(y^{31} - 29y^{30} + \dots + 3350y - 289)$ $\cdot (y^{101} - 64y^{100} + \dots + 814720100043y - 28143753121)$
c_6	$(y^{31} - 9y^{30} + \dots - 36y - 1)(y^{101} - 4y^{100} + \dots - 411y - 49)$
c_8	$(y^{31} - 21y^{30} + \dots + 50547y - 28561)$ $\cdot (y^{101} - 28y^{100} + \dots + 62222823240y - 3219768049)$
c_9	$(y^{31} - 13y^{30} + \dots + 26y - 1)$ $\cdot (y^{101} - 24y^{100} + \dots + 8075431y - 101761)$
c_{12}	$(y^{31} - 12y^{30} + \dots + y - 1)(y^{101} - 15y^{100} + \dots + 205y - 4)$