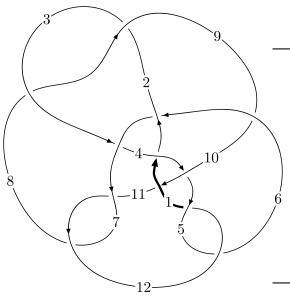
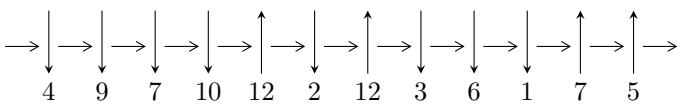
$\underline{12n_{0878}\ (K12n_{0878})}$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 1.21141 \times 10^{651} u^{110} - 1.08774 \times 10^{651} u^{109} + \cdots + 1.65962 \times 10^{652} b - 7.59921 \times 10^{651},$$
$$- 1.93122 \times 10^{651} u^{110} + 2.08824 \times 10^{651} u^{109} + \cdots + 1.65962 \times 10^{652} a + 1.24469 \times 10^{652},$$
$$u^{111} - u^{110} + \cdots - 7u + 3 \rangle$$
$$I_2^u = \langle 1.42494 \times 10^{88} u^{41} - 3.45989 \times 10^{87} u^{40} + \cdots + 6.00691 \times 10^{88} b + 5.71024 \times 10^{88},$$
$$3.70120 \times 10^{88} u^{41} - 6.96687 \times 10^{87} u^{40} + \cdots + 6.00691 \times 10^{88} a + 1.88942 \times 10^{89},\ u^{42} + 7u^{40} + \cdots + 4u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 153 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. $\boldsymbol{I_1^u = \langle 1.21 \times 10^{651} u^{110} - 1.09 \times 10^{651} u^{109} + \cdots + 1.66 \times 10^{652} b - 7.60 \times 10^{651},\ -1.93 \times 10^{651} u^{110} + 2.09 \times 10^{651} u^{109} + \cdots + 1.66 \times 10^{652} a + 1.24 \times 10^{652},\ u^{111} - u^{110} + \cdots - 7u + 3 \rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.116365u^{110} - 0.125826u^{109} + \cdots + 7.34809u - 0.749986 \\ -0.0729930u^{110} + 0.0655417u^{109} + \cdots - 3.44083u + 0.457888 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.164158u^{110} - 0.170164u^{109} + \cdots + 11.2042u - 1.23626 \\ -0.0749935u^{110} + 0.0663564u^{109} + \cdots - 3.32164u + 0.468253 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.189358u^{110} - 0.191368u^{109} + \cdots + 10.7889u - 1.20787 \\ -0.0729930u^{110} + 0.0655417u^{109} + \cdots - 3.44083u + 0.457888 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.196495u^{110} - 0.170592u^{109} + \cdots + 12.6499u - 2.20306 \\ -0.0181036u^{110} + 0.0334053u^{109} + \cdots + 0.189929u + 1.44411 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.191393u^{110} - 0.254658u^{109} + \cdots + 5.51405u + 1.37521 \\ 0.0475149u^{110} - 0.0191522u^{109} + \cdots + 1.31742u + 0.635649 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.123405u^{110} + 0.0992140u^{109} + \cdots - 9.75407u - 0.425829 \\ -0.0883196u^{110} + 0.0385761u^{109} + \cdots - 1.39081u - 1.31338 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.170652u^{110} - 0.222197u^{109} + \cdots + 6.00991u - 2.90751 \\ 0.0971444u^{110} - 0.133840u^{109} + \cdots + 4.19812u - 1.62097 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.0974642u^{110} + 0.0834086u^{109} + \cdots - 13.4622u + 0.976720 \\ -0.0664275u^{110} + 0.0302539u^{109} + \cdots - 1.59786u - 1.68074 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.0599303u^{110} - 0.179163u^{109} + \cdots + 24.5544u - 4.98031 \\ 0.0412055u^{110} - 0.0537590u^{109} + \cdots + 0.489793u - 0.535176 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.271714u^{110} - 0.155209u^{109} + \cdots + 1.22849u - 8.03638$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{111} - 4u^{110} + \cdots + 1801u + 243$
c_2, c_8	$u^{111} - u^{110} + \cdots + 6220u + 16317$
c_3	$u^{111} + 7u^{110} + \cdots - 1407403921u + 153714813$
c_4	$u^{111} - u^{110} + \cdots - 7u + 3$
c_5, c_{12}	$u^{111} + 48u^{109} + \cdots + 261816u + 23711$
c_6	$u^{111} + 21u^{109} + \cdots + 53u + 3$
c_7, c_{11}	$u^{111} - u^{110} + \cdots + 453319u + 98619$
c_9	$u^{111} + 5u^{110} + \cdots - 9375844u + 2723079$
c_{10}	$u^{111} - 4u^{110} + \cdots + 83737u - 91683$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{111} + 2y^{110} + \cdots + 3473479y - 59049$
c_2, c_8	$y^{111} + 59y^{110} + \cdots - 9207502820y - 266244489$
c_3	$y^{111} - 11y^{110} + \cdots + 591943606661337133y - 23628243735624969$
c_4	$y^{111} + 9y^{110} + \cdots - 107y - 9$
c_5, c_{12}	$y^{111} + 96y^{110} + \cdots - 18841975698y - 562211521$
c_6	$y^{111} + 42y^{110} + \cdots - 103925y - 9$
c_7, c_{11}	$y^{111} + 79y^{110} + \cdots + 20799127135y - 9725707161$
c_9	$y^{111} - 9y^{110} + \cdots + 119784414656788y - 7415159240241$
c_{10}	$y^{111} - 44y^{110} + \cdots + 779023452421y - 8405772489$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.714374 + 0.714520I$ $a = -1.360370 + 0.237368I$ $b = -1.051980 + 0.230780I$	$-2.66126 - 5.69184I$	0
$u = 0.714374 - 0.714520I$ $a = -1.360370 - 0.237368I$ $b = -1.051980 - 0.230780I$	$-2.66126 + 5.69184I$	0
$u = 0.865449 + 0.471904I$ $a = -1.78076 - 0.38273I$ $b = -0.292204 + 0.809679I$	$-3.08295 - 4.55181I$	0
$u = 0.865449 - 0.471904I$ $a = -1.78076 + 0.38273I$ $b = -0.292204 - 0.809679I$	$-3.08295 + 4.55181I$	0
$u = -0.744405 + 0.625978I$ $a = 0.354718 + 0.088370I$ $b = 0.26601 + 1.47529I$	$0.90056 + 4.21838I$	0
$u = -0.744405 - 0.625978I$ $a = 0.354718 - 0.088370I$ $b = 0.26601 - 1.47529I$	$0.90056 - 4.21838I$	0
$u = -1.018670 + 0.221906I$ $a = 0.700092 + 1.209710I$ $b = -0.442687 - 0.142458I$	$-1.19315 - 6.76877I$	0
$u = -1.018670 - 0.221906I$ $a = 0.700092 - 1.209710I$ $b = -0.442687 + 0.142458I$	$-1.19315 + 6.76877I$	0
$u = -0.700518 + 0.811869I$ $a = 1.252180 + 0.046686I$ $b = 1.49503 + 0.14142I$	$0.34719 + 11.43030I$	0
$u = -0.700518 - 0.811869I$ $a = 1.252180 - 0.046686I$ $b = 1.49503 - 0.14142I$	$0.34719 - 11.43030I$	0

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.462927+0.771636I$		
$a=$	$1.40069-0.31892I$	$5.77937-4.39153I$	0
$b=$	$1.228940-0.544484I$		
$u=$	$0.462927-0.771636I$		
$a=$	$1.40069+0.31892I$	$5.77937+4.39153I$	0
$b=$	$1.228940+0.544484I$		
$u=$	$1.070260+0.383207I$		
$a=$	$0.805900-0.263619I$	$-5.61982-8.80647I$	0
$b=$	$0.71928-1.55137I$		
$u=$	$1.070260-0.383207I$		
$a=$	$0.805900+0.263619I$	$-5.61982+8.80647I$	0
$b=$	$0.71928+1.55137I$		
$u=$	$0.788734+0.348001I$		
$a=$	$0.623744-0.348987I$	$2.83661-2.30918I$	0
$b=$	$0.016183+0.698832I$		
$u=$	$0.788734-0.348001I$		
$a=$	$0.623744+0.348987I$	$2.83661+2.30918I$	0
$b=$	$0.016183-0.698832I$		
$u=$	$0.301556+1.107410I$		
$a=$	$0.471287-1.118110I$	$7.13821-5.36833I$	0
$b=$	$0.165856-0.537127I$		
$u=$	$0.301556-1.107410I$		
$a=$	$0.471287+1.118110I$	$7.13821+5.36833I$	0
$b=$	$0.165856+0.537127I$		
$u=$	$0.442659+1.063300I$		
$a=$	$-0.723596+0.127029I$	$4.95925-2.55415I$	0
$b=$	$-0.681753+0.669259I$		
$u=$	$0.442659-1.063300I$		
$a=$	$-0.723596-0.127029I$	$4.95925+2.55415I$	0
$b=$	$-0.681753-0.669259I$		

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.810382 + 0.246739I$ $a = 0.627222 - 0.007177I$ $b = 0.472691 + 0.442982I$	$2.68502 - 2.34907I$	$0. + 4.62590I$
$u = 0.810382 - 0.246739I$ $a = 0.627222 + 0.007177I$ $b = 0.472691 - 0.442982I$	$2.68502 + 2.34907I$	$0. - 4.62590I$
$u = -0.830518 + 0.807934I$ $a = -1.64096 - 0.52688I$ $b = 0.004057 - 1.205310I$	$-5.66828 + 2.16661I$	0
$u = -0.830518 - 0.807934I$ $a = -1.64096 + 0.52688I$ $b = 0.004057 + 1.205310I$	$-5.66828 - 2.16661I$	0
$u = -0.270917 + 0.795648I$ $a = -0.70380 + 1.98629I$ $b = -0.723663 + 0.638508I$	$-0.47949 + 3.84871I$	$-4.00000 - 6.49874I$
$u = -0.270917 - 0.795648I$ $a = -0.70380 - 1.98629I$ $b = -0.723663 - 0.638508I$	$-0.47949 - 3.84871I$	$-4.00000 + 6.49874I$
$u = -0.598161 + 0.586619I$ $a = 0.935048 + 0.558040I$ $b = 0.898596 - 0.517687I$	$2.65645 + 0.58417I$	$-4.00000 + 0.I$
$u = -0.598161 - 0.586619I$ $a = 0.935048 - 0.558040I$ $b = 0.898596 + 0.517687I$	$2.65645 - 0.58417I$	$-4.00000 + 0.I$
$u = -0.251585 + 1.145510I$ $a = -0.113209 - 0.545664I$ $b = -0.203945 + 0.129546I$	$2.50436 + 2.13405I$	0
$u = -0.251585 - 1.145510I$ $a = -0.113209 + 0.545664I$ $b = -0.203945 - 0.129546I$	$2.50436 - 2.13405I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.691497+0.440489I$ $a=1.350100-0.134371I$ $b=1.39227+0.55383I$	$-1.89770-0.44510I$	$-6.46310-2.28603I$
$u=-0.691497-0.440489I$ $a=1.350100+0.134371I$ $b=1.39227-0.55383I$	$-1.89770+0.44510I$	$-6.46310+2.28603I$
$u=-1.073510+0.556165I$ $a=0.991162-0.506808I$ $b=0.477139+1.167370I$	$0.31996+6.65134I$	0
$u=-1.073510-0.556165I$ $a=0.991162+0.506808I$ $b=0.477139-1.167370I$	$0.31996-6.65134I$	0
$u=-0.841097+0.878400I$ $a=-0.413392-0.695994I$ $b=0.141549-1.300200I$	$-6.53060-3.65843I$	0
$u=-0.841097-0.878400I$ $a=-0.413392+0.695994I$ $b=0.141549+1.300200I$	$-6.53060+3.65843I$	0
$u=-0.597370+1.069170I$ $a=0.877314+0.812741I$ $b=-0.157504+0.969451I$	$2.11240+1.20009I$	0
$u=-0.597370-1.069170I$ $a=0.877314-0.812741I$ $b=-0.157504-0.969451I$	$2.11240-1.20009I$	0
$u=0.648234+1.041010I$ $a=0.652552+0.092460I$ $b=0.862050+0.578104I$	$4.14591+0.74234I$	0
$u=0.648234-1.041010I$ $a=0.652552-0.092460I$ $b=0.862050-0.578104I$	$4.14591-0.74234I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.049130 + 0.640897I$ $a = -1.120320 - 0.032004I$ $b = -0.450276 + 1.161750I$	$-4.10087 - 3.88533I$	0
$u = 1.049130 - 0.640897I$ $a = -1.120320 + 0.032004I$ $b = -0.450276 - 1.161750I$	$-4.10087 + 3.88533I$	0
$u = 1.028590 + 0.705324I$ $a = 1.56592 + 0.21211I$ $b = 0.02758 - 1.51655I$	$-7.17972 - 5.77916I$	0
$u = 1.028590 - 0.705324I$ $a = 1.56592 - 0.21211I$ $b = 0.02758 + 1.51655I$	$-7.17972 + 5.77916I$	0
$u = 0.108806 + 0.738364I$ $a = 1.65018 + 1.06385I$ $b = 0.660881 + 0.421823I$	$-1.00746 + 1.43239I$	$-0.712963 - 1.182765I$
$u = 0.108806 - 0.738364I$ $a = 1.65018 - 1.06385I$ $b = 0.660881 - 0.421823I$	$-1.00746 - 1.43239I$	$-0.712963 + 1.182765I$
$u = 0.088345 + 1.255210I$ $a = 0.02028 - 1.56698I$ $b = -0.127970 - 1.122830I$	$-1.43444 + 3.95549I$	0
$u = 0.088345 - 1.255210I$ $a = 0.02028 + 1.56698I$ $b = -0.127970 + 1.122830I$	$-1.43444 - 3.95549I$	0
$u = -1.320290 + 0.165660I$ $a = -0.615887 - 0.224422I$ $b = -0.53967 - 1.34969I$	$-7.67870 + 0.79225I$	0
$u = -1.320290 - 0.165660I$ $a = -0.615887 + 0.224422I$ $b = -0.53967 + 1.34969I$	$-7.67870 - 0.79225I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.591662 + 0.308130I$ $a = -1.48419 - 0.29327I$ $b = -1.278240 - 0.387702I$	$-2.88004 - 3.80174I$	$-10.3585 + 11.7266I$
$u = 0.591662 - 0.308130I$ $a = -1.48419 + 0.29327I$ $b = -1.278240 + 0.387702I$	$-2.88004 + 3.80174I$	$-10.3585 - 11.7266I$
$u = 0.646735 + 0.090961I$ $a = -1.82779 + 1.33379I$ $b = 0.023820 + 0.466302I$	$-3.24397 + 2.32203I$	$-7.74916 + 1.18552I$
$u = 0.646735 - 0.090961I$ $a = -1.82779 - 1.33379I$ $b = 0.023820 - 0.466302I$	$-3.24397 - 2.32203I$	$-7.74916 - 1.18552I$
$u = -0.957591 + 0.970816I$ $a = -1.255070 - 0.290968I$ $b = -0.61604 - 1.36478I$	$-6.51470 + 10.40070I$	0
$u = -0.957591 - 0.970816I$ $a = -1.255070 + 0.290968I$ $b = -0.61604 + 1.36478I$	$-6.51470 - 10.40070I$	0
$u = -0.765550 + 1.134320I$ $a = -0.477207 + 0.222027I$ $b = -0.843446 + 0.501365I$	$4.00430 + 2.46081I$	0
$u = -0.765550 - 1.134320I$ $a = -0.477207 - 0.222027I$ $b = -0.843446 - 0.501365I$	$4.00430 - 2.46081I$	0
$u = 0.993431 + 0.948966I$ $a = 1.204650 - 0.306662I$ $b = 0.35446 - 1.53621I$	$-8.80402 - 5.19154I$	0
$u = 0.993431 - 0.948966I$ $a = 1.204650 + 0.306662I$ $b = 0.35446 + 1.53621I$	$-8.80402 + 5.19154I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.617717$ $a=-0.643374$ $b=-0.546644$	-1.19358	-8.04680
$u=-0.152825+0.596063I$ $a=-2.69132-1.36528I$ $b=-0.808836-0.871007I$	$5.01256+3.02445I$	$3.93926+13.39364I$
$u=-0.152825-0.596063I$ $a=-2.69132+1.36528I$ $b=-0.808836+0.871007I$	$5.01256-3.02445I$	$3.93926-13.39364I$
$u=1.388250+0.158097I$ $a=-0.871222-0.449625I$ $b=-0.401550+0.780015I$	$-5.16105-3.41124I$	0
$u=1.388250-0.158097I$ $a=-0.871222+0.449625I$ $b=-0.401550-0.780015I$	$-5.16105+3.41124I$	0
$u=0.878004+1.094590I$ $a=0.551431-0.531799I$ $b=-0.01753-1.53239I$	$-8.36283-1.86599I$	0
$u=0.878004-1.094590I$ $a=0.551431+0.531799I$ $b=-0.01753+1.53239I$	$-8.36283+1.86599I$	0
$u=-0.171107+0.561744I$ $a=3.18410+0.05775I$ $b=0.440311+0.971236I$	$-2.55806+2.86376I$	$-2.12152-2.95420I$
$u=-0.171107-0.561744I$ $a=3.18410-0.05775I$ $b=0.440311-0.971236I$	$-2.55806-2.86376I$	$-2.12152+2.95420I$
$u=-0.333362+0.475392I$ $a=1.365580+0.265437I$ $b=0.355020+0.629497I$	$-0.235630+1.236950I$	$-3.14529-5.36463I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.333362-0.475392I$ $a=\ 1.365580-0.265437I$ $b=\ 0.355020-0.629497I$	$-0.235630-1.236950I$	$-3.14529+5.36463I$
$u=-0.438474+0.334578I$ $a=-0.783807-0.859439I$ $b=-0.86580-1.88441I$	$-5.27914+2.07032I$	$-6.0815-15.0598I$
$u=-0.438474-0.334578I$ $a=-0.783807+0.859439I$ $b=-0.86580+1.88441I$	$-5.27914-2.07032I$	$-6.0815+15.0598I$
$u=\ 0.64890+1.32449I$ $a=-0.350517+0.263804I$ $b=-0.002498+0.446892I$	$5.01188-3.25184I$	0
$u=\ 0.64890-1.32449I$ $a=-0.350517-0.263804I$ $b=-0.002498-0.446892I$	$5.01188+3.25184I$	0
$u=-1.28098+0.73287I$ $a=\ 0.721659+0.090912I$ $b=\ 0.042035+1.270820I$	$-1.99001-1.39769I$	0
$u=-1.28098-0.73287I$ $a=\ 0.721659-0.090912I$ $b=\ 0.042035-1.270820I$	$-1.99001+1.39769I$	0
$u=\ 0.334374+0.350306I$ $a=\ 0.547809-0.900839I$ $b=\ 0.20466-2.30103I$	$-5.33727+1.59995I$	$-4.1687+14.5202I$
$u=\ 0.334374-0.350306I$ $a=\ 0.547809+0.900839I$ $b=\ 0.20466+2.30103I$	$-5.33727-1.59995I$	$-4.1687-14.5202I$
$u=-1.18142+0.95426I$ $a=\ 0.929256-0.277886I$ $b=\ 0.728942+1.043040I$	$2.69666+5.09815I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.18142-0.95426I$ $a=\ \ 0.929256+0.277886I$ $b=\ \ 0.728942-1.043040I$	$2.69666-5.09815I$	0
$u=\ \ 1.28594+0.88309I$ $a=-0.826769-0.473327I$ $b=-0.607795+1.101090I$	$2.12664-7.82113I$	0
$u=\ \ 1.28594-0.88309I$ $a=-0.826769+0.473327I$ $b=-0.607795-1.101090I$	$2.12664+7.82113I$	0
$u=\ \ 0.233019+0.351041I$ $a=-4.60590-3.74878I$ $b=-0.488333+0.957091I$	$-1.39665-8.53108I$	$2.72060+12.79796I$
$u=\ \ 0.233019-0.351041I$ $a=-4.60590+3.74878I$ $b=-0.488333-0.957091I$	$-1.39665+8.53108I$	$2.72060-12.79796I$
$u=\ \ 1.14773+1.12517I$ $a=\ \ 1.079590-0.195597I$ $b=\ \ 0.62392-1.51047I$	$-4.7963-18.6404I$	0
$u=\ \ 1.14773-1.12517I$ $a=\ \ 1.079590+0.195597I$ $b=\ \ 0.62392+1.51047I$	$-4.7963+18.6404I$	0
$u=-0.341809+0.180413I$ $a=\ \ 0.37707+1.37681I$ $b=-0.16616-1.50808I$	$3.27712+4.80787I$	$-4.53718+6.19603I$
$u=-0.341809-0.180413I$ $a=\ \ 0.37707-1.37681I$ $b=-0.16616+1.50808I$	$3.27712-4.80787I$	$-4.53718-6.19603I$
$u=-1.07844+1.20422I$ $a=\ \ 0.842347+0.309744I$ $b=\ \ 0.39945+1.50564I$	$-0.65444+9.79757I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.07844-1.20422I$ $a=\ \ 0.842347-0.309744I$ $b=\ \ 0.39945-1.50564I$	$-0.65444-9.79757I$	0
$u=-1.17285+1.18347I$ $a=-0.950123-0.317594I$ $b=-0.47746-1.44379I$	$-7.87490+11.20670I$	0
$u=-1.17285-1.18347I$ $a=-0.950123+0.317594I$ $b=-0.47746+1.44379I$	$-7.87490-11.20670I$	0
$u=\ \ 0.316465+0.097588I$ $a=-2.05845+2.08096I$ $b=-0.063427-1.058360I$	$-1.33055-1.69320I$	$-8.77159+2.56265I$
$u=\ \ 0.316465-0.097588I$ $a=-2.05845-2.08096I$ $b=-0.063427+1.058360I$	$-1.33055+1.69320I$	$-8.77159-2.56265I$
$u=\ \ 0.078707+0.281604I$ $a=\ \ 2.67502-3.53779I$ $b=-0.04381-1.58925I$	$-6.99222-2.59124I$	$-9.51161+3.63597I$
$u=\ \ 0.078707-0.281604I$ $a=\ \ 2.67502+3.53779I$ $b=-0.04381+1.58925I$	$-6.99222+2.59124I$	$-9.51161-3.63597I$
$u=-0.152170+0.218008I$ $a=\ \ 1.53368+6.52606I$ $b=-0.232022-0.637467I$	$0.13226-2.48870I$	$-5.76810-2.40873I$
$u=-0.152170-0.218008I$ $a=\ \ 1.53368-6.52606I$ $b=-0.232022+0.637467I$	$0.13226+2.48870I$	$-5.76810+2.40873I$
$u=\ \ 1.35063+1.14659I$ $a=\ \ 0.648783-0.242907I$ $b=\ \ 0.322194-1.162370I$	$0.42207-4.82384I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.35063 - 1.14659I$ $a = 0.648783 + 0.242907I$ $b = 0.322194 + 1.162370I$	$0.42207 + 4.82384I$	0
$u = 1.03231 + 1.45503I$ $a = -0.443822 + 0.374440I$ $b = -0.175720 + 1.305850I$	$-1.50323 - 3.75862I$	0
$u = 1.03231 - 1.45503I$ $a = -0.443822 - 0.374440I$ $b = -0.175720 - 1.305850I$	$-1.50323 + 3.75862I$	0
$u = 1.34857 + 1.21416I$ $a = 0.241513 - 0.398394I$ $b = -0.293146 - 1.273490I$	$-4.86772 + 9.78923I$	0
$u = 1.34857 - 1.21416I$ $a = 0.241513 + 0.398394I$ $b = -0.293146 + 1.273490I$	$-4.86772 - 9.78923I$	0
$u = -1.47447 + 1.11897I$ $a = -0.400667 - 0.360648I$ $b = 0.022501 - 1.276840I$	$-8.34445 - 1.99063I$	0
$u = -1.47447 - 1.11897I$ $a = -0.400667 + 0.360648I$ $b = 0.022501 + 1.276840I$	$-8.34445 + 1.99063I$	0
$u = -1.40582 + 1.21619I$ $a = -0.509182 + 0.025635I$ $b = -0.18387 - 1.50374I$	$-1.98216 + 5.27302I$	0
$u = -1.40582 - 1.21619I$ $a = -0.509182 - 0.025635I$ $b = -0.18387 + 1.50374I$	$-1.98216 - 5.27302I$	0
$u = 0.00011 + 2.73853I$ $a = -0.0175327 + 0.0916424I$ $b = 0.165211 + 0.941148I$	$8.61716 + 0.63430I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.00011 - 2.73853I$		
$a = -0.0175327 - 0.0916424I$	$8.61716 - 0.63430I$	0
$b = \quad 0.165211 - 0.941148I$		

II.

$\boldsymbol{I_2^u = \langle 1.42\times 10^{88}u^{41} - 3.46\times 10^{87}u^{40} + \cdots + 6.01\times 10^{88}b + 5.71\times 10^{88},\ 3.70\times 10^{88}u^{41} - 6.97\times 10^{87}u^{40} + \cdots + 6.01\times 10^{88}a + 1.89\times 10^{89},\ u^{42} + 7u^{40} + \cdots + 4u + 1\rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.616157u^{41} + 0.115981u^{40} + \cdots - 9.83735u - 3.14541 \\ -0.237216u^{41} + 0.0575985u^{40} + \cdots - 9.02287u - 0.950613 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.370960u^{41} + 0.00347036u^{40} + \cdots - 0.966712u - 2.07882 \\ -0.222273u^{41} + 0.0568160u^{40} + \cdots - 9.22772u - 1.06312 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.378941u^{41} + 0.0583825u^{40} + \cdots - 0.814479u - 2.19480 \\ -0.237216u^{41} + 0.0575985u^{40} + \cdots - 9.02287u - 0.950613 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.549117u^{41} + 0.0931211u^{40} + \cdots - 21.4276u - 0.340771 \\ 0.0443919u^{41} + 0.172057u^{40} + \cdots - 10.1516u + 3.95910 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.160969u^{41} - 0.176131u^{40} + \cdots - 8.18078u + 1.04708 \\ 0.159303u^{41} + 0.0706371u^{40} + \cdots - 2.22793u + 1.71992 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.760864u^{41} - 0.220955u^{40} + \cdots + 17.6848u - 0.811985 \\ -0.294166u^{41} - 0.0345365u^{40} + \cdots + 4.37866u - 3.96354 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.255933u^{41} - 0.0319336u^{40} + \cdots - 11.1840u + 3.38021 \\ 0.445600u^{41} - 0.0395565u^{40} + \cdots + 7.71344u + 3.96713 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.660716u^{41} - 0.0172246u^{40} + \cdots - 23.9144u + 0.0266400 \\ 0.186389u^{41} + 0.111646u^{40} + \cdots - 10.6025u + 4.69941 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.297796u^{41} + 0.0137552u^{40} + \cdots + 2.46563u + 1.31737 \\ 0.265178u^{41} - 0.0358788u^{40} + \cdots + 5.63723u + 0.504725 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -1.10189u^{41} + 0.603477u^{40} + \cdots + 3.90743u - 20.7365$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{42} - 5u^{41} + \cdots + 8u + 1$
c_2	$u^{42} + 16u^{40} + \cdots + 3u + 13$
c_3	$u^{42} - 2u^{41} + \cdots + 760u + 275$
c_4	$u^{42} + 7u^{40} + \cdots + 4u + 1$
c_5	$u^{42} + u^{41} + \cdots + 7u + 9$
c_6	$u^{42} + u^{41} + \cdots - 2u + 1$
c_7	$u^{42} + 2u^{41} + \cdots - 4u + 1$
c_8	$u^{42} + 16u^{40} + \cdots - 3u + 13$
c_9	$u^{42} + 16u^{39} + \cdots - 177u + 199$
c_{10}	$u^{42} - 11u^{41} + \cdots - 6u + 1$
c_{11}	$u^{42} - 2u^{41} + \cdots + 4u + 1$
c_{12}	$u^{42} - u^{41} + \cdots - 7u + 9$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{42} + 15y^{41} + \cdots - 20y + 1$
c_2, c_8	$y^{42} + 32y^{41} + \cdots + 2695y + 169$
c_3	$y^{42} + 30y^{41} + \cdots + 230350y + 75625$
c_4	$y^{42} + 14y^{41} + \cdots + 10y + 1$
c_5, c_{12}	$y^{42} + 41y^{41} + \cdots + 1697y + 81$
c_6	$y^{42} + 23y^{41} + \cdots + 20y + 1$
c_7, c_{11}	$y^{42} + 12y^{41} + \cdots - 24y + 1$
c_9	$y^{42} - 28y^{40} + \cdots + 525075y + 39601$
c_{10}	$y^{42} - 15y^{41} + \cdots + 22y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.309367+0.935151I$ $a=-1.094450-0.525980I$ $b=-0.882734-0.687045I$	$6.53719+3.46611I$	$5.66711-2.98458I$
$u=-0.309367-0.935151I$ $a=-1.094450+0.525980I$ $b=-0.882734+0.687045I$	$6.53719-3.46611I$	$5.66711+2.98458I$
$u=-0.524409+0.877601I$ $a=0.408363-0.099163I$ $b=0.153397+1.148170I$	$0.26151+2.86315I$	$-3.24965-2.70797I$
$u=-0.524409-0.877601I$ $a=0.408363+0.099163I$ $b=0.153397-1.148170I$	$0.26151-2.86315I$	$-3.24965+2.70797I$
$u=-0.907011+0.232666I$ $a=0.851833+0.235357I$ $b=0.630383-0.543371I$	$1.92705+1.95495I$	$-7.50090-1.70539I$
$u=-0.907011-0.232666I$ $a=0.851833-0.235357I$ $b=0.630383+0.543371I$	$1.92705-1.95495I$	$-7.50090+1.70539I$
$u=-0.312364+1.139560I$ $a=0.469088+1.235540I$ $b=0.065881+0.734193I$	$6.79483+5.28316I$	$-9.14045-2.08154I$
$u=-0.312364-1.139560I$ $a=0.469088-1.235540I$ $b=0.065881-0.734193I$	$6.79483-5.28316I$	$-9.14045+2.08154I$
$u=0.644633+0.452694I$ $a=-2.67510-0.26522I$ $b=-0.376493+0.911815I$	$-3.43489-3.50942I$	$-7.98067+4.90592I$
$u=0.644633-0.452694I$ $a=-2.67510+0.26522I$ $b=-0.376493-0.911815I$	$-3.43489+3.50942I$	$-7.98067-4.90592I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.965193+0.768930I$ $a=-1.57136+0.01293I$ $b=-0.10248-1.49914I$	$-7.25682+5.39119I$	$-6.13707+3.30656I$
$u=-0.965193-0.768930I$ $a=-1.57136-0.01293I$ $b=-0.10248+1.49914I$	$-7.25682-5.39119I$	$-6.13707-3.30656I$
$u=0.314830+1.214040I$ $a=-0.217842+1.020480I$ $b=0.128657+0.863970I$	$1.30215-1.81376I$	$-5.77013+4.24567I$
$u=0.314830-1.214040I$ $a=-0.217842-1.020480I$ $b=0.128657-0.863970I$	$1.30215+1.81376I$	$-5.77013-4.24567I$
$u=0.674394+1.090490I$ $a=0.390481+0.051398I$ $b=0.723864+0.737686I$	$4.55606-0.31908I$	$3.05170+1.07121I$
$u=0.674394-1.090490I$ $a=0.390481-0.051398I$ $b=0.723864-0.737686I$	$4.55606+0.31908I$	$3.05170-1.07121I$
$u=0.151875+0.691079I$ $a=-0.94055+2.57225I$ $b=0.214594+0.454237I$	$0.59463-2.89793I$	$4.03984+5.29599I$
$u=0.151875-0.691079I$ $a=-0.94055-2.57225I$ $b=0.214594-0.454237I$	$0.59463+2.89793I$	$4.03984-5.29599I$
$u=-1.183810+0.555387I$ $a=-0.534119-0.346052I$ $b=-0.30572-1.45020I$	$-7.74656-0.22815I$	$-7.23180+0.98981I$
$u=-1.183810-0.555387I$ $a=-0.534119+0.346052I$ $b=-0.30572+1.45020I$	$-7.74656+0.22815I$	$-7.23180-0.98981I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.669886+0.018374I$ $a=0.64348-2.85122I$ $b=0.488566+0.916027I$	$-1.93111+8.28078I$	$-9.67878-7.20770I$
$u=-0.669886-0.018374I$ $a=0.64348+2.85122I$ $b=0.488566-0.916027I$	$-1.93111-8.28078I$	$-9.67878+7.20770I$
$u=0.209538+0.616297I$ $a=2.49102-1.49789I$ $b=0.801842-0.774337I$	$4.98179-3.25953I$	$0.1818+18.9527I$
$u=0.209538-0.616297I$ $a=2.49102+1.49789I$ $b=0.801842+0.774337I$	$4.98179+3.25953I$	$0.1818-18.9527I$
$u=1.358560+0.081931I$ $a=-0.847925-0.543750I$ $b=-0.417785+0.795321I$	$-5.16428-3.57820I$	$-6.6201+28.0621I$
$u=1.358560-0.081931I$ $a=-0.847925+0.543750I$ $b=-0.417785-0.795321I$	$-5.16428+3.57820I$	$-6.6201-28.0621I$
$u=0.453714+0.334935I$ $a=-0.405807-0.361318I$ $b=-0.30446+1.60792I$	$3.30582-5.14111I$	$-2.4321+17.3826I$
$u=0.453714-0.334935I$ $a=-0.405807+0.361318I$ $b=-0.30446-1.60792I$	$3.30582+5.14111I$	$-2.4321-17.3826I$
$u=0.527493+0.137007I$ $a=-2.14951-0.84072I$ $b=-0.609364-0.408921I$	$-2.35784-3.34462I$	$-0.64187+2.52178I$
$u=0.527493-0.137007I$ $a=-2.14951+0.84072I$ $b=-0.609364+0.408921I$	$-2.35784+3.34462I$	$-0.64187-2.52178I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.72924+1.37570I$ $a=-0.254742+0.063738I$ $b=-0.409941+0.397713I$	$5.45829+2.95974I$	0
$u=-0.72924-1.37570I$ $a=-0.254742-0.063738I$ $b=-0.409941-0.397713I$	$5.45829-2.95974I$	0
$u=1.28872+0.96290I$ $a=-0.804575-0.334824I$ $b=-0.564395+1.210070I$	$2.60152-7.27233I$	0
$u=1.28872-0.96290I$ $a=-0.804575+0.334824I$ $b=-0.564395-1.210070I$	$2.60152+7.27233I$	0
$u=-1.27259+0.99167I$ $a=0.785403-0.176619I$ $b=0.602602+0.991889I$	$3.62383+5.33952I$	0
$u=-1.27259-0.99167I$ $a=0.785403+0.176619I$ $b=0.602602-0.991889I$	$3.62383-5.33952I$	0
$u=1.42319+1.05633I$ $a=0.532865+0.006288I$ $b=0.20956-1.45255I$	$-2.32301-5.16938I$	0
$u=1.42319-1.05633I$ $a=0.532865-0.006288I$ $b=0.20956+1.45255I$	$-2.32301+5.16938I$	0
$u=-0.107968+0.134204I$ $a=-2.52258-2.74196I$ $b=-0.34737-2.30229I$	$-5.50311+1.82249I$	$-22.4830-3.5895I$
$u=-0.107968-0.134204I$ $a=-2.52258+2.74196I$ $b=-0.34737+2.30229I$	$-5.50311-1.82249I$	$-22.4830+3.5895I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.06510+2.75589I$ $a=-0.0539768+0.1305290I$ $b=-0.198607+0.983194I$	$8.57734-0.78624I$	0
$u=-0.06510-2.75589I$ $a=-0.0539768-0.1305290I$ $b=-0.198607-0.983194I$	$8.57734+0.78624I$	0

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{42}-5u^{41}+\cdots+8u+1)(u^{111}-4u^{110}+\cdots+1801u+243)$
c_2	$(u^{42}+16u^{40}+\cdots+3u+13)(u^{111}-u^{110}+\cdots+6220u+16317)$
c_3	$(u^{42}-2u^{41}+\cdots+760u+275)$ $\cdot(u^{111}+7u^{110}+\cdots-1407403921u+153714813)$
c_4	$(u^{42}+7u^{40}+\cdots+4u+1)(u^{111}-u^{110}+\cdots-7u+3)$
c_5	$(u^{42}+u^{41}+\cdots+7u+9)(u^{111}+48u^{109}+\cdots+261816u+23711)$
c_6	$(u^{42}+u^{41}+\cdots-2u+1)(u^{111}+21u^{109}+\cdots+53u+3)$
c_7	$(u^{42}+2u^{41}+\cdots-4u+1)(u^{111}-u^{110}+\cdots+453319u+98619)$
c_8	$(u^{42}+16u^{40}+\cdots-3u+13)(u^{111}-u^{110}+\cdots+6220u+16317)$
c_9	$(u^{42}+16u^{39}+\cdots-177u+199)$ $\cdot(u^{111}+5u^{110}+\cdots-9375844u+2723079)$
c_{10}	$(u^{42}-11u^{41}+\cdots-6u+1)(u^{111}-4u^{110}+\cdots+83737u-91683)$
c_{11}	$(u^{42}-2u^{41}+\cdots+4u+1)(u^{111}-u^{110}+\cdots+453319u+98619)$
c_{12}	$(u^{42}-u^{41}+\cdots-7u+9)(u^{111}+48u^{109}+\cdots+261816u+23711)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{42}+15y^{41}+\cdots-20y+1)(y^{111}+2y^{110}+\cdots+3473479y-59049)$
c_2, c_8	$(y^{42}+32y^{41}+\cdots+2695y+169)$ $\cdot(y^{111}+59y^{110}+\cdots-9207502820y-266244489)$
c_3	$(y^{42}+30y^{41}+\cdots+230350y+75625)$ $\cdot(y^{111}-11y^{110}+\cdots+591943606661337133y-23628243735624969)$
c_4	$(y^{42}+14y^{41}+\cdots+10y+1)(y^{111}+9y^{110}+\cdots-107y-9)$
c_5, c_{12}	$(y^{42}+41y^{41}+\cdots+1697y+81)$ $\cdot(y^{111}+96y^{110}+\cdots-18841975698y-562211521)$
c_6	$(y^{42}+23y^{41}+\cdots+20y+1)(y^{111}+42y^{110}+\cdots-103925y-9)$
c_7, c_{11}	$(y^{42}+12y^{41}+\cdots-24y+1)$ $\cdot(y^{111}+79y^{110}+\cdots+20799127135y-9725707161)$
c_9	$(y^{42}-28y^{40}+\cdots+525075y+39601)$ $\cdot(y^{111}-9y^{110}+\cdots+119784414656788y-7415159240241)$
c_{10}	$(y^{42}-15y^{41}+\cdots+22y+1)$ $\cdot(y^{111}-44y^{110}+\cdots+779023452421y-8405772489)$