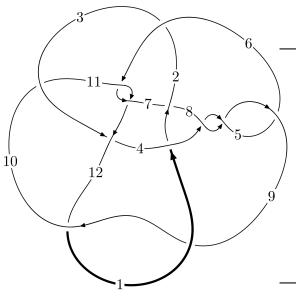
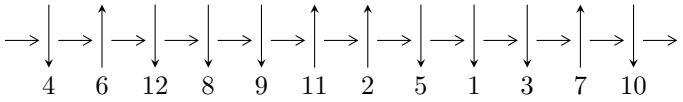
$12a_{0997}$ $(K12a_{0997})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & -1.75024 \times 10^{474} u^{141} - 1.96473 \times 10^{474} u^{140} + \cdots + 4.83910 \times 10^{473} b - 6.34671 \times 10^{476}, \\ & - 1.51920 \times 10^{476} u^{141} - 1.86128 \times 10^{476} u^{140} + \cdots + 2.95185 \times 10^{475} a - 4.50856 \times 10^{478}, \\ & u^{142} + 2u^{141} + \cdots + 190u + 244 \rangle \\ I_2^u = \langle & -113629468333922 u^{34} + 73137569141391 u^{33} + \cdots + 2341694541470 b - 106088871052014, \\ & 49505308067552 u^{34} - 15174583421106 u^{33} + \cdots + 2341694541470 a + 131002690330904, \\ & u^{35} - u^{34} + \cdots + 11u^2 - 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 177 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. $\boldsymbol{I_1^u = \langle -1.75 \times 10^{474} u^{141} - 1.96 \times 10^{474} u^{140} + \cdots + 4.84 \times 10^{473} b - 6.35 \times 10^{476},\ -1.52 \times 10^{476} u^{141} - 1.86 \times 10^{476} u^{140} + \cdots + 2.95 \times 10^{475} a - 4.51 \times 10^{478},\ u^{142} + 2u^{141} + \cdots + 190u + 244 \rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 5.14659u^{141} + 6.30546u^{140} + \cdots - 696.725u + 1527.37 \\ 3.61686u^{141} + 4.06012u^{140} + \cdots - 365.894u + 1311.55 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 4.46182u^{141} + 5.51814u^{140} + \cdots - 619.473u + 1177.84 \\ 3.21273u^{141} + 3.71733u^{140} + \cdots - 345.106u + 1104.07 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1.52972u^{141} + 2.24534u^{140} + \cdots - 330.831u + 215.820 \\ 3.61686u^{141} + 4.06012u^{140} + \cdots - 365.894u + 1311.55 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -4.11774u^{141} - 6.11606u^{140} + \cdots + 1329.29u - 1495.35 \\ 0.246365u^{141} + 0.0837458u^{140} + \cdots + 332.526u - 91.8020 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -3.83345u^{141} - 5.21359u^{140} + \cdots + 1191.52u - 1902.87 \\ -0.981164u^{141} - 1.78349u^{140} + \cdots + 589.787u - 389.643 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -9.93857u^{141} - 12.6394u^{140} + \cdots + 2116.16u - 3531.76 \\ -2.69583u^{141} - 3.60343u^{140} + \cdots + 725.805u - 921.068 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -11.1461u^{141} - 15.0882u^{140} + \cdots + 2795.38u - 3894.61 \\ -3.09865u^{141} - 4.28797u^{140} + \cdots + 956.752u - 1211.52 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 10.6780u^{141} + 14.6267u^{140} + \cdots - 2679.81u + 3654.33 \\ -1.37124u^{141} - 1.90190u^{140} + \cdots + 326.354u - 382.690 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 3.69920u^{141} + 6.20634u^{140} + \cdots - 2253.29u + 1903.17$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{142}+3u^{141}+\cdots-5484992u-358484$
c_2	$u^{142}+4u^{141}+\cdots+287961643u+41067731$
c_3	$u^{142}-2u^{141}+\cdots+113943u-4559$
c_4, c_5, c_8	$u^{142}+4u^{141}+\cdots+659u-79$
c_6, c_{11}	$u^{142}+2u^{141}+\cdots+190u+244$
c_7	$u^{142}+u^{141}+\cdots-118669u-6359$
c_9, c_{12}	$u^{142}-9u^{141}+\cdots+352548u-24091$
c_{10}	$u^{142}-2u^{141}+\cdots+64376759u-5349403$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{142} - 19y^{141} + \cdots - 3842346849688y + 128510778256$
c_2	$y^{142} - 20y^{141} + \cdots - 70044640456027673y + 1686558529488361$
c_3	$y^{142} + 46y^{141} + \cdots - 4311752777y + 20784481$
c_4, c_5, c_8	$y^{142} - 136y^{141} + \cdots + 195349y + 6241$
c_6, c_{11}	$y^{142} - 86y^{141} + \cdots - 1799244y + 59536$
c_7	$y^{142} + 43y^{141} + \cdots + 7868694797y + 40436881$
c_9, c_{12}	$y^{142} + 103y^{141} + \cdots + 15947376892y + 580376281$
c_{10}	$y^{142} + 48y^{141} + \cdots + 1001793325679001y + 28616112456409$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.295441+0.961168I$ $a=\ \ 0.669363-0.698149I$ $b=\ \ 1.305230-0.036216I$	$-1.64573-4.86259I$	0
$u=-0.295441-0.961168I$ $a=\ \ 0.669363+0.698149I$ $b=\ \ 1.305230+0.036216I$	$-1.64573+4.86259I$	0
$u=\ \ 0.995761+0.156820I$ $a=-0.222456+0.767537I$ $b=-0.83941+2.00273I$	$3.44526+4.94912I$	0
$u=\ \ 0.995761-0.156820I$ $a=-0.222456-0.767537I$ $b=-0.83941-2.00273I$	$3.44526-4.94912I$	0
$u=-1.012530+0.042524I$ $a=-0.316472+0.782864I$ $b=\ \ 1.82554+0.66888I$	$5.66183-0.09728I$	0
$u=-1.012530-0.042524I$ $a=-0.316472-0.782864I$ $b=\ \ 1.82554-0.66888I$	$5.66183+0.09728I$	0
$u=-0.960789+0.327128I$ $a=-1.67573-0.53788I$ $b=\ \ 0.573811-0.699430I$	$2.24599-6.21367I$	0
$u=-0.960789-0.327128I$ $a=-1.67573+0.53788I$ $b=\ \ 0.573811+0.699430I$	$2.24599+6.21367I$	0
$u=\ \ 0.905560+0.387213I$ $a=\ \ 1.117890-0.286171I$ $b=-0.333646-0.244719I$	$1.65458+2.59253I$	0
$u=\ \ 0.905560-0.387213I$ $a=\ \ 1.117890+0.286171I$ $b=-0.333646+0.244719I$	$1.65458-2.59253I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.665433+0.773073I$ $a=\ \ 0.227227-0.578619I$ $b=\ \ 0.927867+0.531487I$	$-0.77924-1.97467I$	0
$u=-0.665433-0.773073I$ $a=\ \ 0.227227+0.578619I$ $b=\ \ 0.927867-0.531487I$	$-0.77924+1.97467I$	0
$u=\ \ 0.947015+0.184346I$ $a=-1.53370-0.54169I$ $b=\ \ 0.689578+0.125937I$	$0.06734+2.02026I$	0
$u=\ \ 0.947015-0.184346I$ $a=-1.53370+0.54169I$ $b=\ \ 0.689578-0.125937I$	$0.06734-2.02026I$	0
$u=\ \ 0.991552+0.329410I$ $a=\ \ 2.02454-0.43908I$ $b=-0.511332-0.970263I$	$-3.51611+9.45267I$	0
$u=\ \ 0.991552-0.329410I$ $a=\ \ 2.02454+0.43908I$ $b=-0.511332+0.970263I$	$-3.51611-9.45267I$	0
$u=-1.022900+0.233568I$ $a=\ \ 1.59300-0.86822I$ $b=-0.534375+0.348376I$	$-4.94516-4.59022I$	0
$u=-1.022900-0.233568I$ $a=\ \ 1.59300+0.86822I$ $b=-0.534375-0.348376I$	$-4.94516+4.59022I$	0
$u=-0.949398$ $a=\ \ 1.81107$ $b=-0.915073$	-2.43501	0
$u=\ \ 0.940257+0.110353I$ $a=\ \ 0.877495-1.020720I$ $b=-1.365760-0.120797I$	$1.99013+3.91057I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.940257 - 0.110353I$ $a = 0.877495 + 1.020720I$ $b = -1.365760 + 0.120797I$	$1.99013 - 3.91057I$	0
$u = -0.977297 + 0.445677I$ $a = -1.242200 + 0.390383I$ $b = -0.255815 - 0.424907I$	$-4.14393 - 0.12942I$	0
$u = -0.977297 - 0.445677I$ $a = -1.242200 - 0.390383I$ $b = -0.255815 + 0.424907I$	$-4.14393 + 0.12942I$	0
$u = 0.939586 + 0.533139I$ $a = -1.026660 - 0.963608I$ $b = -0.289039 - 0.097357I$	$-3.18828 - 1.94077I$	0
$u = 0.939586 - 0.533139I$ $a = -1.026660 + 0.963608I$ $b = -0.289039 + 0.097357I$	$-3.18828 + 1.94077I$	0
$u = 0.952349 + 0.526982I$ $a = -0.889049 - 0.707415I$ $b = -1.382320 + 0.276137I$	$2.18933 - 1.03709I$	0
$u = 0.952349 - 0.526982I$ $a = -0.889049 + 0.707415I$ $b = -1.382320 - 0.276137I$	$2.18933 + 1.03709I$	0
$u = 0.180527 + 0.888125I$ $a = -0.901850 + 0.760556I$ $b = -0.249599 + 1.045440I$	$-7.35446 - 1.74290I$	0
$u = 0.180527 - 0.888125I$ $a = -0.901850 - 0.760556I$ $b = -0.249599 - 1.045440I$	$-7.35446 + 1.74290I$	0
$u = -0.863621 + 0.269420I$ $a = 0.038865 - 0.642852I$ $b = -0.412835 - 1.143140I$	$-0.89229 - 2.62212I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.863621-0.269420I$ $a=\ \ 0.038865+0.642852I$ $b=-0.412835+1.143140I$	$-0.89229+2.62212I$	0
$u=-0.096232+1.094430I$ $a=\ \ 0.887299+0.457796I$ $b=\ \ 0.676233+0.624368I$	$1.03726+3.47735I$	0
$u=-0.096232-1.094430I$ $a=\ \ 0.887299-0.457796I$ $b=\ \ 0.676233-0.624368I$	$1.03726-3.47735I$	0
$u=-0.867137+0.227443I$ $a=\ \ 0.664833+0.617823I$ $b=-0.01210+2.70109I$	$-4.02573-8.08694I$	0
$u=-0.867137-0.227443I$ $a=\ \ 0.664833-0.617823I$ $b=-0.01210-2.70109I$	$-4.02573+8.08694I$	0
$u=\ \ 0.156814+1.098300I$ $a=-1.030160+0.457830I$ $b=-0.943074+0.722792I$	$2.45324-8.83016I$	0
$u=\ \ 0.156814-1.098300I$ $a=-1.030160-0.457830I$ $b=-0.943074-0.722792I$	$2.45324+8.83016I$	0
$u=-0.177578+1.097880I$ $a=\ \ 1.098380+0.499845I$ $b=\ \ 1.080490+0.868581I$	$-3.56242+13.15990I$	0
$u=-0.177578-1.097880I$ $a=\ \ 1.098380-0.499845I$ $b=\ \ 1.080490-0.868581I$	$-3.56242-13.15990I$	0
$u=\ \ 0.801356+0.357639I$ $a=\ \ 0.211805-0.263722I$ $b=\ \ 0.55333-1.69086I$	$-7.22523+4.37051I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.801356 - 0.357639I$ $a = 0.211805 + 0.263722I$ $b = 0.55333 + 1.69086I$	$-7.22523 - 4.37051I$	0
$u = -0.677192 + 0.532116I$ $a = 1.22550 - 0.89397I$ $b = 0.325908 - 0.517957I$	$0.49068 - 2.16297I$	0
$u = -0.677192 - 0.532116I$ $a = 1.22550 + 0.89397I$ $b = 0.325908 + 0.517957I$	$0.49068 + 2.16297I$	0
$u = -0.253184 + 1.118540I$ $a = -0.645230 - 0.209736I$ $b = -0.742559 - 0.446593I$	$-1.78631 + 3.15535I$	0
$u = -0.253184 - 1.118540I$ $a = -0.645230 + 0.209736I$ $b = -0.742559 + 0.446593I$	$-1.78631 - 3.15535I$	0
$u = -0.775010 + 0.335653I$ $a = -1.49027 - 0.18784I$ $b = 1.03264 - 1.59318I$	$-4.12735 + 5.42432I$	0
$u = -0.775010 - 0.335653I$ $a = -1.49027 + 0.18784I$ $b = 1.03264 + 1.59318I$	$-4.12735 - 5.42432I$	0
$u = 0.381711 + 0.747319I$ $a = -0.508385 - 0.935626I$ $b = -1.030840 + 0.114718I$	$3.08868 + 3.12603I$	0
$u = 0.381711 - 0.747319I$ $a = -0.508385 + 0.935626I$ $b = -1.030840 - 0.114718I$	$3.08868 - 3.12603I$	0
$u = 0.677307 + 0.479418I$ $a = -0.959029 + 0.608697I$ $b = 1.147290 + 0.688353I$	$-7.48981 - 0.76566I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.677307 - 0.479418I$ $a = -0.959029 - 0.608697I$ $b = 1.147290 - 0.688353I$	$-7.48981 + 0.76566I$	0
$u = 0.439527 + 1.097660I$ $a = 0.531971 - 0.006531I$ $b = 0.431681 - 0.279722I$	$-1.32780 + 1.36080I$	0
$u = 0.439527 - 1.097660I$ $a = 0.531971 + 0.006531I$ $b = 0.431681 + 0.279722I$	$-1.32780 - 1.36080I$	0
$u = -1.073910 + 0.509333I$ $a = 0.435785 - 0.982606I$ $b = 1.47076 - 0.00231I$	$6.39536 - 1.71581I$	0
$u = -1.073910 - 0.509333I$ $a = 0.435785 + 0.982606I$ $b = 1.47076 + 0.00231I$	$6.39536 + 1.71581I$	0
$u = -1.102960 + 0.455345I$ $a = 0.53637 + 1.53987I$ $b = -1.44783 + 1.60931I$	$2.40570 - 7.60763I$	0
$u = -1.102960 - 0.455345I$ $a = 0.53637 - 1.53987I$ $b = -1.44783 - 1.60931I$	$2.40570 + 7.60763I$	0
$u = 0.788812 + 0.129788I$ $a = -0.03648 - 1.50672I$ $b = 0.329050 - 0.928368I$	$-0.490370 - 0.236987I$	0
$u = 0.788812 - 0.129788I$ $a = -0.03648 + 1.50672I$ $b = 0.329050 + 0.928368I$	$-0.490370 + 0.236987I$	0
$u = 1.143600 + 0.423408I$ $a = -0.055369 - 1.256870I$ $b = -1.62856 - 0.22646I$	$2.78962 + 4.09503I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.143600 - 0.423408I$ $a = -0.055369 + 1.256870I$ $b = -1.62856 + 0.22646I$	$2.78962 - 4.09503I$	0
$u = 1.161030 + 0.373280I$ $a = 0.547399 - 0.852433I$ $b = -1.40420 - 1.35000I$	$-2.98025 + 6.85607I$	0
$u = 1.161030 - 0.373280I$ $a = 0.547399 + 0.852433I$ $b = -1.40420 + 1.35000I$	$-2.98025 - 6.85607I$	0
$u = -1.192180 + 0.266198I$ $a = 0.119991 + 0.494450I$ $b = -2.15150 + 1.08202I$	$-0.46667 - 8.68353I$	0
$u = -1.192180 - 0.266198I$ $a = 0.119991 - 0.494450I$ $b = -2.15150 - 1.08202I$	$-0.46667 + 8.68353I$	0
$u = 1.204900 + 0.248316I$ $a = -0.216469 + 1.272930I$ $b = 0.247465 + 0.663571I$	$4.55521 + 4.15623I$	0
$u = 1.204900 - 0.248316I$ $a = -0.216469 - 1.272930I$ $b = 0.247465 - 0.663571I$	$4.55521 - 4.15623I$	0
$u = 1.157320 + 0.444718I$ $a = -0.33903 + 1.52701I$ $b = 1.41902 + 1.12486I$	$6.68328 + 6.03023I$	0
$u = 1.157320 - 0.444718I$ $a = -0.33903 - 1.52701I$ $b = 1.41902 - 1.12486I$	$6.68328 - 6.03023I$	0
$u = -0.104805 + 0.742473I$ $a = -1.63727 - 0.49313I$ $b = -1.315660 - 0.362701I$	$-0.759364 - 0.251461I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.104805-0.742473I$ $a=-1.63727+0.49313I$ $b=-1.315660+0.362701I$	$-0.759364+0.251461I$	0
$u=0.203821+1.238700I$ $a=0.563722-0.312244I$ $b=0.797764-0.681525I$	$-8.34882-6.21982I$	0
$u=0.203821-1.238700I$ $a=0.563722+0.312244I$ $b=0.797764+0.681525I$	$-8.34882+6.21982I$	0
$u=-1.203770+0.363815I$ $a=-0.352127-0.887998I$ $b=1.13437-0.84632I$	$3.52882-4.29863I$	0
$u=-1.203770-0.363815I$ $a=-0.352127+0.887998I$ $b=1.13437+0.84632I$	$3.52882+4.29863I$	0
$u=-0.726023+0.057363I$ $a=-0.02709-2.28085I$ $b=-0.408026-1.136080I$	$-6.24327+2.81788I$	0
$u=-0.726023-0.057363I$ $a=-0.02709+2.28085I$ $b=-0.408026+1.136080I$	$-6.24327-2.81788I$	0
$u=-1.182400+0.477988I$ $a=0.15640+1.62156I$ $b=-1.67251+0.78530I$	$2.38272-4.27099I$	0
$u=-1.182400-0.477988I$ $a=0.15640-1.62156I$ $b=-1.67251-0.78530I$	$2.38272+4.27099I$	0
$u=-1.257260+0.347278I$ $a=0.257115+1.341720I$ $b=-0.849485+0.541354I$	$7.71716-6.70943I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.257260-0.347278I$ $a=\ \ 0.257115-1.341720I$ $b=-0.849485-0.541354I$	$7.71716+6.70943I$	0
$u=\ \ 1.298120+0.128170I$ $a=\ \ 0.041391+0.468615I$ $b=\ \ 1.30327+1.66542I$	$6.24725+3.31596I$	0
$u=\ \ 1.298120-0.128170I$ $a=\ \ 0.041391-0.468615I$ $b=\ \ 1.30327-1.66542I$	$6.24725-3.31596I$	0
$u=-0.519635+1.211370I$ $a=-0.345095-0.080928I$ $b=-0.137004-0.488716I$	$-7.75612-5.05750I$	0
$u=-0.519635-1.211370I$ $a=-0.345095+0.080928I$ $b=-0.137004+0.488716I$	$-7.75612+5.05750I$	0
$u=\ \ 0.296596+0.613764I$ $a=\ \ 0.216062+1.144900I$ $b=-0.097240+0.765571I$	$0.050700+1.129900I$	$-4.00000-2.88520I$
$u=\ \ 0.296596-0.613764I$ $a=\ \ 0.216062-1.144900I$ $b=-0.097240-0.765571I$	$0.050700-1.129900I$	$-4.00000+2.88520I$
$u=\ \ 1.244990+0.488341I$ $a=\ \ 0.317489-0.891339I$ $b=-0.99763-1.42621I$	$-4.01631+6.74718I$	0
$u=\ \ 1.244990-0.488341I$ $a=\ \ 0.317489+0.891339I$ $b=-0.99763+1.42621I$	$-4.01631-6.74718I$	0
$u=\ \ 1.309360+0.287091I$ $a=\ \ 0.286433-0.785035I$ $b=-0.804040-0.349681I$	$3.91965+1.18536I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.309360 - 0.287091I$ $a = 0.286433 + 0.785035I$ $b = -0.804040 + 0.349681I$	$3.91965 - 1.18536I$	0
$u = 0.386831 + 0.517154I$ $a = -1.77518 - 0.72951I$ $b = -0.574014 - 0.862163I$	$-4.59967 + 6.20898I$	$-7.15310 - 5.19968I$
$u = 0.386831 - 0.517154I$ $a = -1.77518 + 0.72951I$ $b = -0.574014 + 0.862163I$	$-4.59967 - 6.20898I$	$-7.15310 + 5.19968I$
$u = 0.628761 + 0.110169I$ $a = 1.67192 + 0.60080I$ $b = -0.819952 - 0.792485I$	$2.38235 - 3.35414I$	$-1.39141 - 1.42609I$
$u = 0.628761 - 0.110169I$ $a = 1.67192 - 0.60080I$ $b = -0.819952 + 0.792485I$	$2.38235 + 3.35414I$	$-1.39141 + 1.42609I$
$u = -0.632779$ $a = -1.09730$ $b = -0.556681$	-2.83002	-0.523720
$u = 1.313040 + 0.396148I$ $a = -0.261069 + 1.329340I$ $b = 1.122220 + 0.371338I$	$3.23818 + 9.35296I$	0
$u = 1.313040 - 0.396148I$ $a = -0.261069 - 1.329340I$ $b = 1.122220 - 0.371338I$	$3.23818 - 9.35296I$	0
$u = 0.083162 + 0.619005I$ $a = 1.77770 - 0.95484I$ $b = 0.966850 - 0.529210I$	$3.65274 - 1.94762I$	$2.25344 + 2.76129I$
$u = 0.083162 - 0.619005I$ $a = 1.77770 + 0.95484I$ $b = 0.966850 + 0.529210I$	$3.65274 + 1.94762I$	$2.25344 - 2.76129I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.301289+0.534052I$ $a=-2.27993-0.67671I$ $b=-0.617728-1.133520I$	$0.06790+3.57933I$	$-8.54365-4.70573I$
$u=-0.301289-0.534052I$ $a=-2.27993+0.67671I$ $b=-0.617728+1.133520I$	$0.06790-3.57933I$	$-8.54365+4.70573I$
$u=-1.229360+0.646474I$ $a=0.045587+0.631812I$ $b=-0.745416+0.820547I$	$-5.15370-1.46543I$	0
$u=-1.229360-0.646474I$ $a=0.045587-0.631812I$ $b=-0.745416-0.820547I$	$-5.15370+1.46543I$	0
$u=-1.379710+0.166727I$ $a=-0.180214-0.544809I$ $b=0.16989-1.66262I$	$5.48382-3.76822I$	0
$u=-1.379710-0.166727I$ $a=-0.180214+0.544809I$ $b=0.16989+1.66262I$	$5.48382+3.76822I$	0
$u=-1.384500+0.123514I$ $a=-0.324361-0.740298I$ $b=0.449961-0.033367I$	$-1.52673+1.19749I$	0
$u=-1.384500-0.123514I$ $a=-0.324361+0.740298I$ $b=0.449961+0.033367I$	$-1.52673-1.19749I$	0
$u=1.251080+0.610775I$ $a=-0.014390+0.867157I$ $b=1.028680+0.651325I$	$1.50165+4.75171I$	0
$u=1.251080-0.610775I$ $a=-0.014390-0.867157I$ $b=1.028680-0.651325I$	$1.50165-4.75171I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.461960+0.388546I$ $a=\ \ 0.69044+1.84271I$ $b=\ \ 0.372536+1.114660I$	$0.90909+3.03402I$	$-4.59309-2.39121I$
$u=-0.461960-0.388546I$ $a=\ \ 0.69044-1.84271I$ $b=\ \ 0.372536-1.114660I$	$0.90909-3.03402I$	$-4.59309+2.39121I$
$u=\ \ 0.518240+0.259555I$ $a=-1.23652+2.37914I$ $b=-0.384698+1.359050I$	$-4.92898-6.53822I$	$-9.87771+2.27426I$
$u=\ \ 0.518240-0.259555I$ $a=-1.23652-2.37914I$ $b=-0.384698-1.359050I$	$-4.92898+6.53822I$	$-9.87771-2.27426I$
$u=-1.29457+0.60024I$ $a=\ \ 0.167786+0.951560I$ $b=-1.22706+0.74096I$	$1.60097-9.25037I$	0
$u=-1.29457-0.60024I$ $a=\ \ 0.167786-0.951560I$ $b=-1.22706-0.74096I$	$1.60097+9.25037I$	0
$u=-0.551222+0.144454I$ $a=\ \ 1.58026+0.28066I$ $b=-0.706667+0.147464I$	$-1.59564+0.01650I$	$-8.59999+1.02896I$
$u=-0.551222-0.144454I$ $a=\ \ 1.58026-0.28066I$ $b=-0.706667-0.147464I$	$-1.59564-0.01650I$	$-8.59999-1.02896I$
$u=-1.30004+0.59827I$ $a=-0.190725-1.209080I$ $b=\ \ 1.57225-1.06569I$	$-0.0408-19.1720I$	0
$u=-1.30004-0.59827I$ $a=-0.190725+1.209080I$ $b=\ \ 1.57225+1.06569I$	$-0.0408+19.1720I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.30757 + 0.58740I$ $a = 0.144170 - 1.147790I$ $b = -1.42128 - 1.01321I$	$6.0708 + 14.8010I$	0
$u = 1.30757 - 0.58740I$ $a = 0.144170 + 1.147790I$ $b = -1.42128 + 1.01321I$	$6.0708 - 14.8010I$	0
$u = -1.31939 + 0.56354I$ $a = -0.129572 - 1.033900I$ $b = 1.19996 - 1.04719I$	$4.87289 - 9.32445I$	0
$u = -1.31939 - 0.56354I$ $a = -0.129572 + 1.033900I$ $b = 1.19996 + 1.04719I$	$4.87289 + 9.32445I$	0
$u = 1.32420 + 0.61903I$ $a = -0.269265 + 0.927893I$ $b = 1.31716 + 0.86445I$	$-4.72137 + 12.63410I$	0
$u = 1.32420 - 0.61903I$ $a = -0.269265 - 0.927893I$ $b = 1.31716 - 0.86445I$	$-4.72137 - 12.63410I$	0
$u = 1.29931 + 0.67407I$ $a = -0.010764 - 0.609932I$ $b = -1.279530 - 0.186124I$	$5.36336 + 2.85586I$	0
$u = 1.29931 - 0.67407I$ $a = -0.010764 + 0.609932I$ $b = -1.279530 + 0.186124I$	$5.36336 - 2.85586I$	0
$u = -1.43411 + 0.32325I$ $a = -0.189948 + 0.650715I$ $b = -0.808731 + 0.148963I$	$7.92563 + 3.63782I$	0
$u = -1.43411 - 0.32325I$ $a = -0.189948 - 0.650715I$ $b = -0.808731 - 0.148963I$	$7.92563 - 3.63782I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.45325 + 0.30305I$ $a = 0.210685 + 0.698484I$ $b = 0.807267 - 0.090714I$	$2.05122 - 8.00110I$	0
$u = 1.45325 - 0.30305I$ $a = 0.210685 - 0.698484I$ $b = 0.807267 + 0.090714I$	$2.05122 + 8.00110I$	0
$u = 1.44053 + 0.39155I$ $a = 0.200747 + 0.569140I$ $b = 0.615766 + 0.382985I$	$6.16457 + 1.98037I$	0
$u = 1.44053 - 0.39155I$ $a = 0.200747 - 0.569140I$ $b = 0.615766 - 0.382985I$	$6.16457 - 1.98037I$	0
$u = -0.059753 + 0.486288I$ $a = -1.58206 + 1.21971I$ $b = -0.525144 + 1.170870I$	$-6.25668 - 3.45644I$	$-7.95779 + 1.87920I$
$u = -0.059753 - 0.486288I$ $a = -1.58206 - 1.21971I$ $b = -0.525144 - 1.170870I$	$-6.25668 + 3.45644I$	$-7.95779 - 1.87920I$
$u = 0.131339 + 0.463577I$ $a = 0.726996 + 0.878139I$ $b = 0.261570 + 0.561742I$	$-0.204329 + 1.049600I$	$-3.55621 - 5.69708I$
$u = 0.131339 - 0.463577I$ $a = 0.726996 - 0.878139I$ $b = 0.261570 - 0.561742I$	$-0.204329 - 1.049600I$	$-3.55621 + 5.69708I$
$u = -1.27542 + 0.85016I$ $a = 0.016490 - 0.461253I$ $b = 1.228330 - 0.277684I$	$0.41144 - 4.64544I$	0
$u = -1.27542 - 0.85016I$ $a = 0.016490 + 0.461253I$ $b = 1.228330 + 0.277684I$	$0.41144 + 4.64544I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.46548+0.55433I$ $a=-0.153334-0.640912I$ $b=\ \ 1.278780-0.097748I$	$1.79231-1.69511I$	0
$u=-1.46548-0.55433I$ $a=-0.153334+0.640912I$ $b=\ \ 1.278780+0.097748I$	$1.79231+1.69511I$	0

II. $I_2^u = \langle -1.14\times 10^{14}u^{34} + 7.31\times 10^{13}u^{33} + \cdots + 2.34\times 10^{12}b - 1.06\times 10^{14},\ 4.95\times 10^{13}u^{34} - 1.52\times 10^{13}u^{33} + \cdots + 2.34\times 10^{12}a + 1.31\times 10^{14},\ u^{35} - u^{34} + \cdots + 11u^2 - 1\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -21.1408u^{34} + 6.48017u^{33} + \cdots - 85.8975u - 55.9435 \\ 48.5245u^{34} - 31.2328u^{33} + \cdots + 107.689u + 45.3043 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -46.0627u^{34} + 22.9330u^{33} + \cdots - 151.903u - 84.8837 \\ 33.0410u^{34} - 22.7747u^{33} + \cdots + 66.6053u + 24.8333 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -69.6653u^{34} + 37.7129u^{33} + \cdots - 193.586u - 101.248 \\ 48.5245u^{34} - 31.2328u^{33} + \cdots + 107.689u + 45.3043 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -7.32322u^{34} - 7.63691u^{33} + \cdots - 17.4117u - 28.4680 \\ -9.08846u^{34} - 4.41940u^{33} + \cdots - 35.3641u - 30.4775 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -5.17953u^{34} - 9.28015u^{33} + \cdots - 7.61022u - 26.5787 \\ 53.9109u^{34} - 35.0662u^{33} + \cdots + 120.036u + 49.7160 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 38.0705u^{34} - 18.3704u^{33} + \cdots + 73.9366u + 41.3601 \\ 3.58637u^{34} + 4.71758u^{33} + \cdots + 26.3203u + 29.1203 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 39.9725u^{34} - 14.9017u^{33} + \cdots + 130.207u + 72.9861 \\ -5.55554u^{34} + 1.49297u^{33} + \cdots - 10.2532u - 12.6239 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -53.6809u^{34} + 33.5964u^{33} + \cdots - 175.125u - 78.3608 \\ 4.42308u^{34} + 4.22463u^{33} + \cdots - 2.98053u + 5.68707 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$$= -\frac{304005565967963}{1170847270735}u^{34} + \frac{160381532917453}{2341694541470}u^{33} + \cdots - \frac{854830395440697}{1170847270735}u - \frac{1164115765444817}{2341694541470}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{35} - 14u^{34} + \cdots + 16u - 1$
c_2	$u^{35} - 5u^{34} + \cdots + 3u - 1$
c_3	$u^{35} - 3u^{34} + \cdots + 3u + 1$
c_4, c_5	$u^{35} + 3u^{34} + \cdots - 3u - 1$
c_6	$u^{35} - u^{34} + \cdots + 11u^2 - 1$
c_7	$u^{35} + 6u^{33} + \cdots + 3u + 1$
c_8	$u^{35} - 3u^{34} + \cdots - 3u + 1$
c_9	$u^{35} - 2u^{34} + \cdots - 2u - 1$
c_{10}	$u^{35} - u^{34} + \cdots - 3u - 1$
c_{11}	$u^{35} + u^{34} + \cdots - 11u^2 + 1$
c_{12}	$u^{35} + 2u^{34} + \cdots - 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{35} + 6y^{34} + \cdots + 62y - 1$
c_2	$y^{35} + 9y^{34} + \cdots - 49y - 1$
c_3	$y^{35} + 27y^{34} + \cdots + 3y - 1$
c_4, c_5, c_8	$y^{35} - 35y^{34} + \cdots + 9y - 1$
c_6, c_{11}	$y^{35} - 21y^{34} + \cdots + 22y - 1$
c_7	$y^{35} + 12y^{34} + \cdots - 3y - 1$
c_9, c_{12}	$y^{35} + 32y^{34} + \cdots + 42y - 1$
c_{10}	$y^{35} + 9y^{34} + \cdots - 23y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.325840+0.871911I$ $a=\ \ 0.390565+0.011728I$ $b=\ \ 0.176431-0.355089I$	$-1.47177-1.92215I$	$-6.90681+7.33686I$
$u=-0.325840-0.871911I$ $a=\ \ 0.390565-0.011728I$ $b=\ \ 0.176431+0.355089I$	$-1.47177+1.92215I$	$-6.90681-7.33686I$
$u=\ \ 0.964498+0.482459I$ $a=-0.847622-0.595829I$ $b=-0.008201+0.215202I$	$-4.76170-0.79129I$	$-8.71502+0.60365I$
$u=\ \ 0.964498-0.482459I$ $a=-0.847622+0.595829I$ $b=-0.008201-0.215202I$	$-4.76170+0.79129I$	$-8.71502-0.60365I$
$u=-0.171729+0.832899I$ $a=\ \ 0.784449-0.786628I$ $b=\ \ 0.642782-0.123979I$	$1.95739-2.11994I$	$-2.77028+2.10230I$
$u=-0.171729-0.832899I$ $a=\ \ 0.784449+0.786628I$ $b=\ \ 0.642782+0.123979I$	$1.95739+2.11994I$	$-2.77028-2.10230I$
$u=-0.765862+0.272431I$ $a=\ \ 1.127610-0.778868I$ $b=-0.172603-0.545768I$	$-0.83179-1.61396I$	$-8.84847+1.88186I$
$u=-0.765862-0.272431I$ $a=\ \ 1.127610+0.778868I$ $b=-0.172603+0.545768I$	$-0.83179+1.61396I$	$-8.84847-1.88186I$
$u=-1.160300+0.256696I$ $a=\ \ 0.838279+0.555396I$ $b=-1.06880+1.55168I$	$-1.96634-8.30516I$	$-2.54260+7.40784I$
$u=-1.160300-0.256696I$ $a=\ \ 0.838279-0.555396I$ $b=-1.06880-1.55168I$	$-1.96634+8.30516I$	$-2.54260-7.40784I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.118450+0.409088I$ $a=\ \ 0.34414+1.76609I$ $b=-1.35105+1.03697I$	$3.05459-6.26586I$	$-1.04301+6.03627I$
$u=-1.118450-0.409088I$ $a=\ \ 0.34414-1.76609I$ $b=-1.35105-1.03697I$	$3.05459+6.26586I$	$-1.04301-6.03627I$
$u=\ \ 0.304888+1.166800I$ $a=-0.193065-0.227691I$ $b=-0.312784-0.584209I$	$-7.68931+5.51840I$	$-4.00000-9.14652I$
$u=\ \ 0.304888-1.166800I$ $a=-0.193065+0.227691I$ $b=-0.312784+0.584209I$	$-7.68931-5.51840I$	$-4.00000+9.14652I$
$u=\ \ 0.772488+0.166970I$ $a=-1.04596-1.50079I$ $b=\ \ 0.026781-1.161370I$	$-6.11900+3.62566I$	$-7.16492-4.45275I$
$u=\ \ 0.772488-0.166970I$ $a=-1.04596+1.50079I$ $b=\ \ 0.026781+1.161370I$	$-6.11900-3.62566I$	$-7.16492+4.45275I$
$u=\ \ 1.006800+0.739946I$ $a=\ \ 0.058372-0.681844I$ $b=-1.342690-0.294027I$	$-0.10339+4.76147I$	$-7.41315-7.75159I$
$u=\ \ 1.006800-0.739946I$ $a=\ \ 0.058372+0.681844I$ $b=-1.342690+0.294027I$	$-0.10339-4.76147I$	$-7.41315+7.75159I$
$u=-0.740550+0.056759I$ $a=-1.52690-0.56575I$ $b=\ \ 0.02039-1.94305I$	$-3.94181+6.89915I$	$-2.84529-4.69651I$
$u=-0.740550-0.056759I$ $a=-1.52690+0.56575I$ $b=\ \ 0.02039+1.94305I$	$-3.94181-6.89915I$	$-2.84529+4.69651I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.195820 + 0.407470I$ $a = -0.321281 + 1.273300I$ $b = 1.06723 + 1.09049I$	$5.89269 + 6.11137I$	$-4.00000 - 6.28916I$
$u = 1.195820 - 0.407470I$ $a = -0.321281 - 1.273300I$ $b = 1.06723 - 1.09049I$	$5.89269 - 6.11137I$	$-4.00000 + 6.28916I$
$u = -1.226240 + 0.563205I$ $a = 0.001019 - 0.706063I$ $b = 1.331550 - 0.254767I$	$5.08134 - 2.69860I$	0
$u = -1.226240 - 0.563205I$ $a = 0.001019 + 0.706063I$ $b = 1.331550 + 0.254767I$	$5.08134 + 2.69860I$	0
$u = 0.646388 + 0.045227I$ $a = 1.44904 - 0.45860I$ $b = -0.470716 + 1.308020I$	$2.38905 + 4.03609I$	$-1.53405 - 8.74854I$
$u = 0.646388 - 0.045227I$ $a = 1.44904 + 0.45860I$ $b = -0.470716 - 1.308020I$	$2.38905 - 4.03609I$	$-1.53405 + 8.74854I$
$u = 1.349210 + 0.092260I$ $a = -0.233513 + 0.507521I$ $b = 0.11290 + 1.68065I$	$5.70697 + 4.18122I$	$0. - 13.82511I$
$u = 1.349210 - 0.092260I$ $a = -0.233513 - 0.507521I$ $b = 0.11290 - 1.68065I$	$5.70697 - 4.18122I$	$0. + 13.82511I$
$u = -1.345380 + 0.316226I$ $a = 0.086757 - 0.520788I$ $b = 1.023980 - 0.904444I$	$5.74209 - 2.54628I$	0
$u = -1.345380 - 0.316226I$ $a = 0.086757 + 0.520788I$ $b = 1.023980 + 0.904444I$	$5.74209 + 2.54628I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.29900 + 0.59734I$ $a = 0.035275 - 0.826512I$ $b = -1.411430 - 0.064333I$	$1.36041 + 1.84626I$	0
$u = 1.29900 - 0.59734I$ $a = 0.035275 + 0.826512I$ $b = -1.411430 + 0.064333I$	$1.36041 - 1.84626I$	0
$u = -0.438627 + 0.327388I$ $a = -2.70959 + 0.27779I$ $b = -0.546026 - 0.539624I$	$0.79161 + 2.91754I$	$-3.54877 + 0.21181I$
$u = -0.438627 - 0.327388I$ $a = -2.70959 - 0.27779I$ $b = -0.546026 + 0.539624I$	$0.79161 - 2.91754I$	$-3.54877 - 0.21181I$
$u = 0.507757$ $a = -2.47517$ $b = -0.435496$	-3.60235	-13.1570

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{35}-14u^{34}+\cdots+16u-1)$ $\cdot(u^{142}+3u^{141}+\cdots-5484992u-358484)$
c_2	$(u^{35}-5u^{34}+\cdots+3u-1)$ $\cdot(u^{142}+4u^{141}+\cdots+287961643u+41067731)$
c_3	$(u^{35}-3u^{34}+\cdots+3u+1)(u^{142}-2u^{141}+\cdots+113943u-4559)$
c_4, c_5	$(u^{35}+3u^{34}+\cdots-3u-1)(u^{142}+4u^{141}+\cdots+659u-79)$
c_6	$(u^{35}-u^{34}+\cdots+11u^2-1)(u^{142}+2u^{141}+\cdots+190u+244)$
c_7	$(u^{35}+6u^{33}+\cdots+3u+1)(u^{142}+u^{141}+\cdots-118669u-6359)$
c_8	$(u^{35}-3u^{34}+\cdots-3u+1)(u^{142}+4u^{141}+\cdots+659u-79)$
c_9	$(u^{35}-2u^{34}+\cdots-2u-1)(u^{142}-9u^{141}+\cdots+352548u-24091)$
c_{10}	$(u^{35}-u^{34}+\cdots-3u-1)(u^{142}-2u^{141}+\cdots+6.43768\times10^7u-5349403)$
c_{11}	$(u^{35}+u^{34}+\cdots-11u^2+1)(u^{142}+2u^{141}+\cdots+190u+244)$
c_{12}	$(u^{35}+2u^{34}+\cdots-2u+1)(u^{142}-9u^{141}+\cdots+352548u-24091)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{35}+6y^{34}+\cdots+62y-1)$ $\cdot(y^{142}-19y^{141}+\cdots-3842346849688y+128510778256)$
c_2	$(y^{35}+9y^{34}+\cdots-49y-1)$ $\cdot(y^{142}-20y^{141}+\cdots-70044640456027673y+1686558529488361)$
c_3	$(y^{35}+27y^{34}+\cdots+3y-1)$ $\cdot(y^{142}+46y^{141}+\cdots-4311752777y+20784481)$
c_4, c_5, c_8	$(y^{35}-35y^{34}+\cdots+9y-1)(y^{142}-136y^{141}+\cdots+195349y+6241)$
c_6, c_{11}	$(y^{35}-21y^{34}+\cdots+22y-1)$ $\cdot(y^{142}-86y^{141}+\cdots-1799244y+59536)$
c_7	$(y^{35}+12y^{34}+\cdots-3y-1)$ $\cdot(y^{142}+43y^{141}+\cdots+7868694797y+40436881)$
c_9, c_{12}	$(y^{35}+32y^{34}+\cdots+42y-1)$ $\cdot(y^{142}+103y^{141}+\cdots+15947376892y+580376281)$
c_{10}	$(y^{35}+9y^{34}+\cdots-23y-1)$ $\cdot(y^{142}+48y^{141}+\cdots+1001793325679001y+28616112456409)$