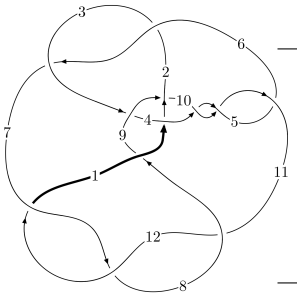
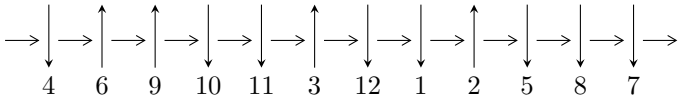
$12a_{0921}$ $(K12a_{0921})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -9.48478 \times 10^{151} u^{92} + 2.29231 \times 10^{151} u^{91} + \cdots + 4.90569 \times 10^{151} b - 2.80006 \times 10^{152},$$
$$2.01917 \times 10^{152} u^{92} - 3.99607 \times 10^{151} u^{91} + \cdots + 9.81138 \times 10^{151} a + 9.96934 \times 10^{152},\ u^{93} + u^{92} + \cdots - 18u$$
$$I_2^u = \langle u^{20} - 9u^{18} + \cdots - 2u^2 + b,\ -u^{19} + 10u^{17} + \cdots + a + 3,\ u^{21} - 11u^{19} + \cdots - 6u^2 + 1 \rangle$$
$$I_3^u = \langle -u^2 + b,\ a - 1,\ u^{15} - 3u^{13} + u^{10} + 5u^9 - 2u^8 - u^6 - 3u^5 + 2u^4 - u^3 + u^2 - 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 129 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. $\boldsymbol{I_1^u = \langle -9.48 \times 10^{151} u^{92} + 2.29 \times 10^{151} u^{91} + \cdots + 4.91 \times 10^{151} b - 2.80 \times 10^{152},\ 2.02 \times 10^{152} u^{92} - 4.00 \times 10^{151} u^{91} + \cdots + 9.81 \times 10^{151} a + 9.97 \times 10^{152},\ u^{93} + u^{92} + \cdots - 18u + 4 \rangle}$

(i) Arc colorings

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

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

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -2.05799u^{92} + 0.407289u^{91} + \cdots + 12.6723u - 10.1610 \\ 1.93342u^{92} - 0.467276u^{91} + \cdots - 30.7332u + 5.70778 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.124563u^{92} - 0.0599871u^{91} + \cdots - 18.0609u - 4.45321 \\ 1.93342u^{92} - 0.467276u^{91} + \cdots - 30.7332u + 5.70778 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.799139u^{92} - 0.728059u^{91} + \cdots - 46.3661u + 4.77657 \\ 1.44094u^{92} - 0.629335u^{91} + \cdots - 29.6189u + 5.05852 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -1.94848u^{92} + 0.489593u^{91} + \cdots + 11.8488u - 10.0698 \\ 1.92816u^{92} - 0.456854u^{91} + \cdots - 30.4428u + 5.56450 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1.25578u^{92} - 0.230053u^{91} + \cdots - 14.2454u - 1.89595 \\ -1.36128u^{92} + 0.166064u^{91} + \cdots + 17.7972u - 4.51459 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -1.51946u^{92} + 0.0968024u^{91} + \cdots + 24.1105u - 2.93910 \\ -2.91059u^{92} + 0.633840u^{91} + \cdots + 41.0680u - 8.34160 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.632413u^{92} - 0.385835u^{91} + \cdots - 27.7370u + 0.504505 \\ -0.480647u^{92} + 0.112108u^{91} + \cdots - 0.601988u + 0.0953933 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4.79061u^{92} + 1.91185u^{91} + \cdots + 111.874u - 20.5189$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{93} - 7u^{92} + \cdots + 87046u - 14548$
c_2, c_6	$u^{93} - 4u^{92} + \cdots + 818u + 292$
c_3	$u^{93} - u^{92} + \cdots + 82u - 4$
c_4, c_5, c_{10}	$u^{93} + u^{92} + \cdots - 18u + 4$
c_7, c_{11}, c_{12}	$u^{93} - 5u^{92} + \cdots - 62u + 4$
c_8	$u^{93} + 5u^{92} + \cdots - 263654u + 40564$
c_9	$u^{93} + 3u^{92} + \cdots - 3506u - 1364$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{93} - 19y^{92} + \cdots + 9425154940y - 211644304$
c_2, c_6	$y^{93} - 48y^{92} + \cdots + 1643820y - 85264$
c_3	$y^{93} - 9y^{92} + \cdots + 3164y - 16$
c_4, c_5, c_{10}	$y^{93} - 101y^{92} + \cdots - 468y - 16$
c_7, c_{11}, c_{12}	$y^{93} + 81y^{92} + \cdots + 588y - 16$
c_8	$y^{93} - 27y^{92} + \cdots + 67097196492y - 1645438096$
c_9	$y^{93} + 21y^{92} + \cdots - 67270084y - 1860496$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.508441+0.865954I$ $a=-0.325096+1.247810I$ $b=\ \ 1.041020-0.783812I$	$0.20096+8.92280I$	0
$u=-0.508441-0.865954I$ $a=-0.325096-1.247810I$ $b=\ \ 1.041020+0.783812I$	$0.20096-8.92280I$	0
$u=\ \ 0.469257+0.915218I$ $a=-0.423152-1.219970I$ $b=\ \ 1.082360+0.876290I$	$5.41996-12.97790I$	0
$u=\ \ 0.469257-0.915218I$ $a=-0.423152+1.219970I$ $b=\ \ 1.082360-0.876290I$	$5.41996+12.97790I$	0
$u=-0.927529+0.448886I$ $a=-1.058270+0.051455I$ $b=\ \ 0.397945+0.501367I$	$8.09310+0.14930I$	0
$u=-0.927529-0.448886I$ $a=-1.058270-0.051455I$ $b=\ \ 0.397945-0.501367I$	$8.09310-0.14930I$	0
$u=\ \ 0.530707+0.896493I$ $a=-0.490200+0.098599I$ $b=\ \ 0.718569-0.370152I$	$2.47227-0.63691I$	0
$u=\ \ 0.530707-0.896493I$ $a=-0.490200-0.098599I$ $b=\ \ 0.718569+0.370152I$	$2.47227+0.63691I$	0
$u=\ \ 0.534102+0.752303I$ $a=-0.142930-1.371140I$ $b=\ \ 0.918907+0.670898I$	$2.25254-4.57716I$	0
$u=\ \ 0.534102-0.752303I$ $a=-0.142930+1.371140I$ $b=\ \ 0.918907-0.670898I$	$2.25254+4.57716I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.735519+0.867109I$ $a=-0.628196+0.018969I$ $b=\ \ 0.763287+0.500011I$	$-0.33868-3.16041I$	0
$u=-0.735519-0.867109I$ $a=-0.628196-0.018969I$ $b=\ \ 0.763287-0.500011I$	$-0.33868+3.16041I$	0
$u=-0.556116+0.577176I$ $a=\ \ 0.178244-1.271710I$ $b=-1.08666+0.99348I$	$2.06421+7.25817I$	0
$u=-0.556116-0.577176I$ $a=\ \ 0.178244+1.271710I$ $b=-1.08666-0.99348I$	$2.06421-7.25817I$	0
$u=\ \ 0.837532+0.861025I$ $a=-0.678478-0.091597I$ $b=\ \ 0.777681-0.589874I$	$4.46674+7.02318I$	0
$u=\ \ 0.837532-0.861025I$ $a=-0.678478+0.091597I$ $b=\ \ 0.777681+0.589874I$	$4.46674-7.02318I$	0
$u=\ \ 0.625041+0.460913I$ $a=\ \ 0.66228-1.43861I$ $b=\ \ 0.745720+0.381896I$	$1.99795-3.83741I$	0
$u=\ \ 0.625041-0.460913I$ $a=\ \ 0.66228+1.43861I$ $b=\ \ 0.745720-0.381896I$	$1.99795+3.83741I$	0
$u=-0.301204+0.688922I$ $a=-0.56454+1.82402I$ $b=\ \ 0.624251-0.868525I$	$9.88119+3.92848I$	0
$u=-0.301204-0.688922I$ $a=-0.56454-1.82402I$ $b=\ \ 0.624251+0.868525I$	$9.88119-3.92848I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.723386$ $a=\ \ 1.60032$ $b=\ \ 0.704568$	-0.943143	-10.4180
$u=-1.281680+0.000599I$ $a=-0.204360+1.175340I$ $b=-0.788781-1.123720I$	$1.54277-5.13635I$	0
$u=-1.281680-0.000599I$ $a=-0.204360-1.175340I$ $b=-0.788781+1.123720I$	$1.54277+5.13635I$	0
$u=\ \ 0.538824+0.470683I$ $a=\ \ 0.160205+1.374300I$ $b=-1.080240-0.790479I$	$-2.76079-3.81720I$	$-9.13434+6.95796I$
$u=\ \ 0.538824-0.470683I$ $a=\ \ 0.160205-1.374300I$ $b=-1.080240+0.790479I$	$-2.76079+3.81720I$	$-9.13434-6.95796I$
$u=\ \ 0.260333+0.634297I$ $a=\ \ 0.292242+1.114540I$ $b=-0.257972-1.062420I$	$4.35474-0.70676I$	$1.78969+4.36362I$
$u=\ \ 0.260333-0.634297I$ $a=\ \ 0.292242-1.114540I$ $b=-0.257972+1.062420I$	$4.35474+0.70676I$	$1.78969-4.36362I$
$u=-1.316730+0.162695I$ $a=-0.170965-0.295963I$ $b=\ \ 0.30737+2.10149I$	$2.22557+8.18081I$	0
$u=-1.316730-0.162695I$ $a=-0.170965+0.295963I$ $b=\ \ 0.30737-2.10149I$	$2.22557-8.18081I$	0
$u=\ \ 1.326910+0.070082I$ $a=-0.001160+0.218282I$ $b=\ \ 1.26981-1.26624I$	$3.28953+0.55896I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.326910 - 0.070082I$ $a = -0.001160 - 0.218282I$ $b = 1.26981 + 1.26624I$	$3.28953 - 0.55896I$	0
$u = -1.281140 + 0.367616I$ $a = -0.069228 - 0.910131I$ $b = -1.28880 + 0.64130I$	$-0.63612 + 2.02419I$	0
$u = -1.281140 - 0.367616I$ $a = -0.069228 + 0.910131I$ $b = -1.28880 - 0.64130I$	$-0.63612 - 2.02419I$	0
$u = 1.353450 + 0.161844I$ $a = -0.132542 + 0.363700I$ $b = 0.17474 - 1.64951I$	$-3.22563 - 5.08058I$	0
$u = 1.353450 - 0.161844I$ $a = -0.132542 - 0.363700I$ $b = 0.17474 + 1.64951I$	$-3.22563 + 5.08058I$	0
$u = 0.407933 + 0.464047I$ $a = -0.866007 + 0.691674I$ $b = 0.688589 - 0.455821I$	$2.66989 + 0.13790I$	$2.92063 - 0.32720I$
$u = 0.407933 - 0.464047I$ $a = -0.866007 - 0.691674I$ $b = 0.688589 + 0.455821I$	$2.66989 - 0.13790I$	$2.92063 + 0.32720I$
$u = -1.381120 + 0.098816I$ $a = 0.006521 - 0.340348I$ $b = 0.636543 + 1.106670I$	$-2.64960 + 1.68388I$	0
$u = -1.381120 - 0.098816I$ $a = 0.006521 + 0.340348I$ $b = 0.636543 - 1.106670I$	$-2.64960 - 1.68388I$	0
$u = 1.360210 + 0.260057I$ $a = -0.162811 + 0.802512I$ $b = -1.021440 - 0.796484I$	$-4.89754 - 3.66913I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.360210 - 0.260057I$ $a = -0.162811 - 0.802512I$ $b = -1.021440 + 0.796484I$	$-4.89754 + 3.66913I$	0
$u = 1.389140 + 0.012717I$ $a = -0.554931 + 1.201120I$ $b = -0.847473 - 0.644385I$	$-5.08356 - 2.17532I$	0
$u = 1.389140 - 0.012717I$ $a = -0.554931 - 1.201120I$ $b = -0.847473 + 0.644385I$	$-5.08356 + 2.17532I$	0
$u = 1.406690 + 0.094426I$ $a = -1.29452 - 1.03273I$ $b = -0.598145 - 0.021332I$	$-0.18126 - 7.44744I$	0
$u = 1.406690 - 0.094426I$ $a = -1.29452 + 1.03273I$ $b = -0.598145 + 0.021332I$	$-0.18126 + 7.44744I$	0
$u = -1.39601 + 0.23784I$ $a = -0.329690 - 0.575972I$ $b = -0.98291 + 1.39370I$	$-0.90850 + 3.86973I$	0
$u = -1.39601 - 0.23784I$ $a = -0.329690 + 0.575972I$ $b = -0.98291 - 1.39370I$	$-0.90850 - 3.86973I$	0
$u = -1.41760 + 0.04823I$ $a = -0.99595 + 1.26314I$ $b = -0.693903 - 0.244095I$	$-6.04675 + 2.86647I$	0
$u = -1.41760 - 0.04823I$ $a = -0.99595 - 1.26314I$ $b = -0.693903 + 0.244095I$	$-6.04675 - 2.86647I$	0
$u = -0.135731 + 0.564632I$ $a = -0.038430 - 1.246730I$ $b = 0.596702 + 1.029200I$	$1.44493 + 2.51937I$	$0.01028 - 7.23544I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.135731-0.564632I$ $a=-0.038430+1.246730I$ $b=\ \ 0.596702-1.029200I$	$1.44493-2.51937I$	$0.01028+7.23544I$
$u=\ \ 0.047256+0.569881I$ $a=\ \ 0.11875+1.41024I$ $b=\ \ 0.79856-1.28376I$	$6.45729-5.60603I$	$5.38089+6.61393I$
$u=\ \ 0.047256-0.569881I$ $a=\ \ 0.11875-1.41024I$ $b=\ \ 0.79856+1.28376I$	$6.45729+5.60603I$	$5.38089-6.61393I$
$u=\ \ 1.43982+0.23261I$ $a=\ \ 0.553535-1.141840I$ $b=\ \ 0.815368+1.022160I$	$4.25414-7.21931I$	0
$u=\ \ 1.43982-0.23261I$ $a=\ \ 0.553535+1.141840I$ $b=\ \ 0.815368-1.022160I$	$4.25414+7.21931I$	0
$u=-0.467586+0.257946I$ $a=\ \ 0.02407-1.81471I$ $b=-1.094560+0.380639I$	$-0.223024+0.638682I$	$-7.26593-1.08990I$
$u=-0.467586-0.257946I$ $a=\ \ 0.02407+1.81471I$ $b=-1.094560-0.380639I$	$-0.223024-0.638682I$	$-7.26593+1.08990I$
$u=\ \ 1.48280+0.12522I$ $a=-0.584483+0.824508I$ $b=-1.39781-0.71566I$	$-6.64297-2.24828I$	0
$u=\ \ 1.48280-0.12522I$ $a=-0.584483-0.824508I$ $b=-1.39781+0.71566I$	$-6.64297+2.24828I$	0
$u=-1.49936+0.17405I$ $a=-0.571538-0.743869I$ $b=-1.53989+0.86367I$	$-9.39431+6.26075I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.49936-0.17405I$ $a=-0.571538+0.743869I$ $b=-1.53989-0.86367I$	$-9.39431-6.26075I$	0
$u=1.50553+0.20623I$ $a=-0.567957+0.697438I$ $b=-1.62262-0.98031I$	$-4.61612-10.16490I$	0
$u=1.50553-0.20623I$ $a=-0.567957-0.697438I$ $b=-1.62262+0.98031I$	$-4.61612+10.16490I$	0
$u=1.48132+0.41379I$ $a=0.044885+0.816597I$ $b=-1.072630-0.146328I$	$-2.25116-8.01558I$	0
$u=1.48132-0.41379I$ $a=0.044885-0.816597I$ $b=-1.072630+0.146328I$	$-2.25116+8.01558I$	0
$u=-1.49735+0.35692I$ $a=0.039185-0.774715I$ $b=-0.871253+0.182705I$	$-6.70226+4.67739I$	0
$u=-1.49735-0.35692I$ $a=0.039185+0.774715I$ $b=-0.871253-0.182705I$	$-6.70226-4.67739I$	0
$u=-1.53475+0.12089I$ $a=1.024310+0.928571I$ $b=0.722740-0.376986I$	$-5.12025+5.82093I$	0
$u=-1.53475-0.12089I$ $a=1.024310-0.928571I$ $b=0.722740+0.376986I$	$-5.12025-5.82093I$	0
$u=-1.52693+0.26895I$ $a=0.586700+0.990447I$ $b=1.170260-0.787437I$	$-4.44470+8.33731I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.52693-0.26895I$ $a=\ 0.586700-0.990447I$ $b=\ 1.170260+0.787437I$	$-4.44470-8.33731I$	0
$u=-0.235303+0.381265I$ $a=\ 0.96159-1.43797I$ $b=-0.610180+0.360523I$	$-0.375586+1.110620I$	$-5.85320-5.23683I$
$u=-0.235303-0.381265I$ $a=\ 0.96159+1.43797I$ $b=-0.610180-0.360523I$	$-0.375586-1.110620I$	$-5.85320+5.23683I$
$u=-1.52414+0.33387I$ $a=\ 0.521304+0.976377I$ $b=\ 1.39892-0.94174I$	$-1.0116+17.5021I$	0
$u=-1.52414-0.33387I$ $a=\ 0.521304-0.976377I$ $b=\ 1.39892+0.94174I$	$-1.0116-17.5021I$	0
$u=\ 1.56065$ $a=\ 1.42405$ $b=\ 0.642348$	-8.44045	0
$u=\ 1.53200+0.30838I$ $a=\ 0.544303-0.975626I$ $b=\ 1.32328+0.85818I$	$-6.4092-13.1952I$	0
$u=\ 1.53200-0.30838I$ $a=\ 0.544303+0.975626I$ $b=\ 1.32328-0.85818I$	$-6.4092+13.1952I$	0
$u=\ 1.54225+0.29438I$ $a=\ 0.069262+0.717819I$ $b=-0.570637-0.119504I$	$-3.25509-1.51532I$	0
$u=\ 1.54225-0.29438I$ $a=\ 0.069262-0.717819I$ $b=-0.570637+0.119504I$	$-3.25509+1.51532I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.60036+0.03902I$ $a=\ \ 0.339371+0.487975I$ $b=\ \ 0.710583-0.058904I$	$-4.93556-4.01294I$	0
$u=-1.60036-0.03902I$ $a=\ \ 0.339371-0.487975I$ $b=\ \ 0.710583+0.058904I$	$-4.93556+4.01294I$	0
$u=\ \ 1.60243+0.10816I$ $a=\ \ 0.405139-0.408093I$ $b=\ \ 0.827639+0.088426I$	$-8.97902-0.30493I$	0
$u=\ \ 1.60243-0.10816I$ $a=\ \ 0.405139+0.408093I$ $b=\ \ 0.827639-0.088426I$	$-8.97902+0.30493I$	0
$u=-1.60735+0.20212I$ $a=\ \ 0.386947+0.314917I$ $b=\ \ 0.890916-0.105990I$	$-5.13275+4.82360I$	0
$u=-1.60735-0.20212I$ $a=\ \ 0.386947-0.314917I$ $b=\ \ 0.890916+0.105990I$	$-5.13275-4.82360I$	0
$u=\ \ 0.346577$ $a=-2.36075$ $b=\ \ 0.943840$	2.83068	10.4240
$u=-0.152629+0.293549I$ $a=-4.52463-0.47527I$ $b=-0.490294+0.609024I$	$4.95962+6.04460I$	$1.17092-11.50660I$
$u=-0.152629-0.293549I$ $a=-4.52463+0.47527I$ $b=-0.490294-0.609024I$	$4.95962-6.04460I$	$1.17092+11.50660I$
$u=-0.008205+0.246331I$ $a=-0.08505-3.19265I$ $b=\ \ 1.45669+0.61935I$	$7.62756-1.79977I$	$9.81021+0.38909I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.008205-0.246331I$ $a=-0.08505+3.19265I$ $b=\ \ 1.45669-0.61935I$	$7.62756+1.79977I$	$9.81021-0.38909I$
$u=\ \ 0.127305+0.126214I$ $a=-7.28555-3.50390I$ $b=-0.587613-0.256457I$	$-0.85046-2.18730I$	$-11.9288+11.8413I$
$u=\ \ 0.127305-0.126214I$ $a=-7.28555+3.50390I$ $b=-0.587613+0.256457I$	$-0.85046+2.18730I$	$-11.9288-11.8413I$

II. $I_2^u =$
$\langle u^{20}-9u^{18}+\cdots-2u^2+b,\ -u^{19}+10u^{17}+\cdots+a+3,\ u^{21}-11u^{19}+\cdots-6u^2+1\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u \\ -u^3+u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^{19}-10u^{17}+\cdots+9u^2-3 \\ -u^{20}+9u^{18}+\cdots-u^3+2u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^2+1 \\ -u^4+2u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^{20}+u^{19}+\cdots+11u^2-3 \\ -u^{20}+9u^{18}+\cdots-u^3+2u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -2u^{18}+18u^{16}+\cdots-2u^2-3u \\ u^{19}-10u^{17}+\cdots+2u-1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^{19}-10u^{17}+\cdots+9u^2-2 \\ -u^{18}+9u^{16}+\cdots+4u^2-u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^{20}+10u^{18}+\cdots+u+3 \\ -4u^{20}-u^{19}+\cdots+5u+1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 5u^{20}+8u^{19}+\cdots-8u-7 \\ 5u^{20}+8u^{19}+\cdots-4u-8 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 7u^{20}+9u^{19}+\cdots-8u-9 \\ 4u^{19}+4u^{18}+\cdots+9u+3 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= -4u^{20}+6u^{19}+39u^{18}-58u^{17}-158u^{16}+228u^{15}+345u^{14}-448u^{13}-453u^{12}+$
$390u^{11}+417u^{10}+55u^9-343u^8-362u^7+240u^6+200u^5-107u^4-6u^3+46u^2+5u-20$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{21} - 6u^{19} + \cdots + 9u - 1$
c_2	$u^{21} - 3u^{20} + \cdots - u + 1$
c_3	$u^{21} + u^{19} + \cdots - 4u^3 - 1$
c_4, c_5	$u^{21} - 11u^{19} + \cdots - 6u^2 + 1$
c_6	$u^{21} + 3u^{20} + \cdots - u - 1$
c_7	$u^{21} + u^{20} + \cdots - 2u - 1$
c_8	$u^{21} - u^{20} + \cdots - 2u - 1$
c_9	$u^{21} + 4u^{18} + \cdots - u^2 - 1$
c_{10}	$u^{21} - 11u^{19} + \cdots + 6u^2 - 1$
c_{11}, c_{12}	$u^{21} - u^{20} + \cdots - 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{21} - 12y^{20} + \cdots + 9y - 1$
c_2, c_6	$y^{21} - 21y^{20} + \cdots + 19y - 1$
c_3	$y^{21} + 2y^{20} + \cdots + 8y^2 - 1$
c_4, c_5, c_{10}	$y^{21} - 22y^{20} + \cdots + 12y - 1$
c_7, c_{11}, c_{12}	$y^{21} + 21y^{20} + \cdots + 14y - 1$
c_8	$y^{21} - 7y^{20} + \cdots + 12y - 1$
c_9	$y^{21} - 8y^{19} + \cdots - 2y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.255744+0.889960I$ $a=\ \ 0.672577-0.339366I$ $b=-0.727132-0.154624I$	$1.97479+1.31552I$	$-5.85122-2.55614I$
$u=-0.255744-0.889960I$ $a=\ \ 0.672577+0.339366I$ $b=-0.727132+0.154624I$	$1.97479-1.31552I$	$-5.85122+2.55614I$
$u=\ \ 1.255380+0.022059I$ $a=\ \ 0.841157+0.162242I$ $b=\ \ 1.93676-0.57055I$	$4.36898+1.63610I$	$2.61412-0.59366I$
$u=\ \ 1.255380-0.022059I$ $a=\ \ 0.841157-0.162242I$ $b=\ \ 1.93676+0.57055I$	$4.36898-1.63610I$	$2.61412+0.59366I$
$u=-1.26425$ $a=\ \ 0.931959$ $b=\ \ 1.79336$	-0.221803	2.62670
$u=-1.320610+0.146791I$ $a=\ \ 0.334116-0.914850I$ $b=-0.177692+1.239600I$	$1.41756+7.11034I$	$-3.34752-5.62759I$
$u=-1.320610-0.146791I$ $a=\ \ 0.334116+0.914850I$ $b=-0.177692-1.239600I$	$1.41756-7.11034I$	$-3.34752+5.62759I$
$u=-1.336660+0.309033I$ $a=-0.040182-0.647615I$ $b=-1.15216+0.84838I$	$-1.72885+2.95479I$	$-7.19455-2.80057I$
$u=-1.336660-0.309033I$ $a=-0.040182+0.647615I$ $b=-1.15216-0.84838I$	$-1.72885-2.95479I$	$-7.19455+2.80057I$
$u=\ \ 1.380070+0.215882I$ $a=-0.054776+0.872274I$ $b=-0.679947-0.858717I$	$-4.60051-4.33911I$	$-7.30384+8.07755I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.380070 - 0.215882I$ $a = -0.054776 - 0.872274I$ $b = -0.679947 + 0.858717I$	$-4.60051 + 4.33911I$	$-7.30384 - 8.07755I$
$u = -0.470407 + 0.375563I$ $a = -0.053666 - 1.392060I$ $b = -0.234865 - 0.689640I$	$4.67657 - 5.22027I$	$-1.18453 + 2.23752I$
$u = -0.470407 - 0.375563I$ $a = -0.053666 + 1.392060I$ $b = -0.234865 + 0.689640I$	$4.67657 + 5.22027I$	$-1.18453 - 2.23752I$
$u = 0.297006 + 0.518050I$ $a = 0.93330 + 1.24179I$ $b = -0.413320 + 0.328273I$	$-0.53747 + 1.63141I$	$-4.38841 - 1.07862I$
$u = 0.297006 - 0.518050I$ $a = 0.93330 - 1.24179I$ $b = -0.413320 - 0.328273I$	$-0.53747 - 1.63141I$	$-4.38841 + 1.07862I$
$u = 0.567113 + 0.064864I$ $a = -1.198340 + 0.359469I$ $b = 1.072880 + 0.452086I$	$6.99512 - 1.93767I$	$-3.59564 + 3.74186I$
$u = 0.567113 - 0.064864I$ $a = -1.198340 - 0.359469I$ $b = 1.072880 - 0.452086I$	$6.99512 + 1.93767I$	$-3.59564 - 3.74186I$
$u = -0.533430$ $a = -1.46571$ $b = 0.953611$	2.54293	-18.1270
$u = 1.57816 + 0.18852I$ $a = -0.597845 + 0.576829I$ $b = -0.711293 - 0.283542I$	$-4.68645 - 5.33753I$	$-0.00830 + 5.00508I$
$u = 1.57816 - 0.18852I$ $a = -0.597845 - 0.576829I$ $b = -0.711293 + 0.283542I$	$-4.68645 + 5.33753I$	$-0.00830 - 5.00508I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.59095$		
$a=-1.13893$	-8.21101	8.01970
$b=-0.573444$		

III. $I_3^u = \langle -u^2 + b,\ a - 1,\ u^{15} - 3u^{13} + \cdots + u^2 - 1 \rangle$

(i) Arc colorings

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

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

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^4 - u^2 + 1 \\ u^6 - 2u^4 + u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^6 - u^4 + 1 \\ u^8 - 2u^6 + 2u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^7 + 2u^3 \\ -u^7 + u^5 + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -u^{12} + u^{11} + u^{10} - 2u^9 + 3u^8 - u^7 - u^6 + 2u^5 - 3u^4 + u^3 - u + 1 \\ u^{13} - u^{12} - 3u^{11} + 2u^{10} + u^9 + u^8 + 3u^7 - 2u^6 - u^5 - u^4 - 2u^3 + u^2 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^5 + 4u^3 + 4u - 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{15} - 6u^{14} + \cdots + 2u - 1$
c_2, c_6	$u^{15} + 6u^{14} + \cdots + 2u + 1$
c_3	$u^{15} + 3u^{13} + \cdots + 2u - 1$
c_4, c_5, c_9 c_{10}	$u^{15} - 3u^{13} + u^{10} + 5u^9 - 2u^8 - u^6 - 3u^5 + 2u^4 - u^3 + u^2 - 1$
c_7, c_{11}, c_{12}	$(u^3 + u^2 + 2u + 1)^5$
c_8	$(u^3 - u^2 + 1)^5$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_6	$y^{15} - 18y^{14} + \cdots + 10y - 1$
c_3	$y^{15} + 6y^{14} + \cdots + 22y - 1$
c_4, c_5, c_9 c_{10}	$y^{15} - 6y^{14} + \cdots + 2y - 1$
c_7, c_{11}, c_{12}	$(y^3 + 3y^2 + 2y - 1)^5$
c_8	$(y^3 - y^2 + 2y - 1)^5$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.131335+0.994914I$ $a=\ 1.00000$ $b=-0.972606-0.261334I$	$3.02413+2.82812I$	$-2.49024-2.97945I$
$u=-0.131335-0.994914I$ $a=\ 1.00000$ $b=-0.972606+0.261334I$	$3.02413-2.82812I$	$-2.49024+2.97945I$
$u=\ 0.188117+0.879962I$ $a=\ 1.00000$ $b=-0.738945+0.331072I$	-1.11345	$-9.01951+0.I$
$u=\ 0.188117-0.879962I$ $a=\ 1.00000$ $b=-0.738945-0.331072I$	-1.11345	$-9.01951+0.I$
$u=-0.337905+0.833072I$ $a=\ 1.00000$ $b=-0.579829-0.562998I$	$3.02413-2.82812I$	$-2.49024+2.97945I$
$u=-0.337905-0.833072I$ $a=\ 1.00000$ $b=-0.579829+0.562998I$	$3.02413+2.82812I$	$-2.49024-2.97945I$
$u=-1.12246$ $a=\ 1.00000$ $b=\ 1.25992$	-1.11345	-9.01950
$u=\ 1.188510+0.170996I$ $a=\ 1.00000$ $b=\ 1.38332+0.40646I$	$3.02413+2.82812I$	$-2.49024-2.97945I$
$u=\ 1.188510-0.170996I$ $a=\ 1.00000$ $b=\ 1.38332-0.40646I$	$3.02413-2.82812I$	$-2.49024+2.97945I$
$u=\ 0.658707+0.399034I$ $a=\ 1.00000$ $b=\ 0.274667+0.525693I$	$3.02413-2.82812I$	$-2.49024+2.97945I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.658707 - 0.399034I$ $a = 1.00000$ $b = 0.274667 - 0.525693I$	$3.02413 + 2.82812I$	$-2.49024 - 2.97945I$
$u = 1.35788$ $a = 1.00000$ $b = 1.84385$	-1.11345	-9.01950
$u = -1.377980 + 0.066196I$ $a = 1.00000$ $b = 1.89445 - 0.18243I$	$3.02413 + 2.82812I$	$-2.49024 - 2.97945I$
$u = -1.377980 - 0.066196I$ $a = 1.00000$ $b = 1.89445 + 0.18243I$	$3.02413 - 2.82812I$	$-2.49024 + 2.97945I$
$u = -0.611656$ $a = 1.00000$ $b = 0.374123$	-1.11345	-9.01950

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{15}-6u^{14}+\cdots+2u-1)(u^{21}-6u^{19}+\cdots+9u-1)$ $\cdot(u^{93}-7u^{92}+\cdots+87046u-14548)$
c_2	$(u^{15}+6u^{14}+\cdots+2u+1)(u^{21}-3u^{20}+\cdots-u+1)$ $\cdot(u^{93}-4u^{92}+\cdots+818u+292)$
c_3	$(u^{15}+3u^{13}+\cdots+2u-1)(u^{21}+u^{19}+\cdots-4u^3-1)$ $\cdot(u^{93}-u^{92}+\cdots+82u-4)$
c_4, c_5	$(u^{15}-3u^{13}+u^{10}+5u^9-2u^8-u^6-3u^5+2u^4-u^3+u^2-1)$ $\cdot(u^{21}-11u^{19}+\cdots-6u^2+1)(u^{93}+u^{92}+\cdots-18u+4)$
c_6	$(u^{15}+6u^{14}+\cdots+2u+1)(u^{21}+3u^{20}+\cdots-u-1)$ $\cdot(u^{93}-4u^{92}+\cdots+818u+292)$
c_7	$((u^3+u^2+2u+1)^5)(u^{21}+u^{20}+\cdots-2u-1)$ $\cdot(u^{93}-5u^{92}+\cdots-62u+4)$
c_8	$((u^3-u^2+1)^5)(u^{21}-u^{20}+\cdots-2u-1)$ $\cdot(u^{93}+5u^{92}+\cdots-263654u+40564)$
c_9	$(u^{15}-3u^{13}+u^{10}+5u^9-2u^8-u^6-3u^5+2u^4-u^3+u^2-1)$ $\cdot(u^{21}+4u^{18}+\cdots-u^2-1)(u^{93}+3u^{92}+\cdots-3506u-1364)$
c_{10}	$(u^{15}-3u^{13}+u^{10}+5u^9-2u^8-u^6-3u^5+2u^4-u^3+u^2-1)$ $\cdot(u^{21}-11u^{19}+\cdots+6u^2-1)(u^{93}+u^{92}+\cdots-18u+4)$
c_{11}, c_{12}	$((u^3+u^2+2u+1)^5)(u^{21}-u^{20}+\cdots-2u+1)$ $\cdot(u^{93}-5u^{92}+\cdots-62u+4)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{15}-18y^{14}+\cdots+10y-1)(y^{21}-12y^{20}+\cdots+9y-1)$ $\cdot(y^{93}-19y^{92}+\cdots+9425154940y-211644304)$
c_2, c_6	$(y^{15}-18y^{14}+\cdots+10y-1)(y^{21}-21y^{20}+\cdots+19y-1)$ $\cdot(y^{93}-48y^{92}+\cdots+1643820y-85264)$
c_3	$(y^{15}+6y^{14}+\cdots+22y-1)(y^{21}+2y^{20}+\cdots+8y^2-1)$ $\cdot(y^{93}-9y^{92}+\cdots+3164y-16)$
c_4, c_5, c_{10}	$(y^{15}-6y^{14}+\cdots+2y-1)(y^{21}-22y^{20}+\cdots+12y-1)$ $\cdot(y^{93}-101y^{92}+\cdots-468y-16)$
c_7, c_{11}, c_{12}	$((y^3+3y^2+2y-1)^5)(y^{21}+21y^{20}+\cdots+14y-1)$ $\cdot(y^{93}+81y^{92}+\cdots+588y-16)$
c_8	$((y^3-y^2+2y-1)^5)(y^{21}-7y^{20}+\cdots+12y-1)$ $\cdot(y^{93}-27y^{92}+\cdots+67097196492y-1645438096)$
c_9	$(y^{15}-6y^{14}+\cdots+2y-1)(y^{21}-8y^{19}+\cdots-2y-1)$ $\cdot(y^{93}+21y^{92}+\cdots-67270084y-1860496)$