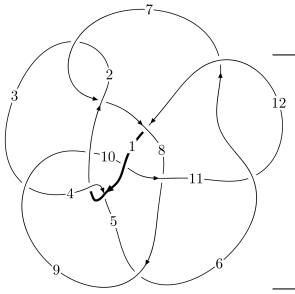
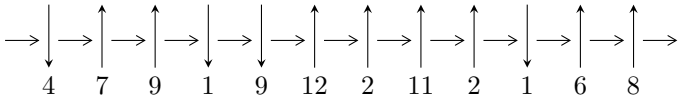
$12n_{0858}$ $(K12n_{0858})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -1.03636 \times 10^{222} u^{84} - 3.95825 \times 10^{222} u^{83} + \cdots + 1.02307 \times 10^{222} b - 2.68730 \times 10^{221},$$
$$- 1.33652 \times 10^{222} u^{84} - 4.40227 \times 10^{222} u^{83} + \cdots + 3.06922 \times 10^{222} a - 2.90267 \times 10^{223},$$
$$u^{85} + 4u^{84} + \cdots + 2u + 1 \rangle$$
$$I_2^u = \langle -2.67401 \times 10^{19} u^{27} + 1.56488 \times 10^{20} u^{26} + \cdots + 1.03296 \times 10^{19} b + 9.72270 \times 10^{16},$$
$$- 2.83742 \times 10^{19} u^{27} + 1.86866 \times 10^{20} u^{26} + \cdots + 1.03296 \times 10^{19} a + 1.15270 \times 10^{20},\ u^{28} - 6u^{27} + \cdots - 5u +$$
$$I_3^u = \langle b,\ a - u + 1,\ u^2 - u + 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 115 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. $\boldsymbol{I_1^u = \langle -1.04 \times 10^{222} u^{84} - 3.96 \times 10^{222} u^{83} + \cdots + 1.02 \times 10^{222} b - 2.69 \times 10^{221},\ -1.34 \times 10^{222} u^{84} - 4.40 \times 10^{222} u^{83} + \cdots + 3.07 \times 10^{222} a - 2.90 \times 10^{223},\ u^{85} + 4u^{84} + \cdots + 2u + 1 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_5 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.435460u^{84} + 1.43433u^{83} + \cdots - 57.4184u + 9.45737 \\ 1.01299u^{84} + 3.86898u^{83} + \cdots + 18.3676u + 0.262670 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.0186202u^{84} - 0.424498u^{83} + \cdots - 75.9656u + 8.88719 \\ 0.905660u^{84} + 3.44358u^{83} + \cdots + 17.8285u + 0.220165 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.577528u^{84} - 2.43465u^{83} + \cdots - 75.7860u + 9.19470 \\ 1.01299u^{84} + 3.86898u^{83} + \cdots + 18.3676u + 0.262670 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.342675u^{84} - 1.51095u^{83} + \cdots - 91.5089u - 14.8953 \\ -0.120732u^{84} - 0.834502u^{83} + \cdots - 5.90626u + 0.893350 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.303518u^{84} + 0.747086u^{83} + \cdots + 102.130u + 17.1171 \\ 0.499714u^{84} + 1.68173u^{83} + \cdots + 5.70936u - 2.24895 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.279580u^{84} + 0.737945u^{83} + \cdots - 83.3181u - 17.0118 \\ -0.216374u^{84} - 0.998041u^{83} + \cdots - 6.67199u + 1.73603 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -2.00860u^{84} - 8.08594u^{83} + \cdots - 109.439u + 4.86586 \\ 0.228258u^{84} + 1.23880u^{83} + \cdots + 16.5717u + 1.16566 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -2.23686u^{84} - 9.32474u^{83} + \cdots - 126.011u + 3.70020 \\ 0.228258u^{84} + 1.23880u^{83} + \cdots + 16.5717u + 1.16566 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -5.33059u^{84} - 22.7759u^{83} + \cdots - 48.3401u - 9.30996$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{85} - 4u^{84} + \cdots + 2u - 1$
c_2, c_7	$u^{85} + 30u^{83} + \cdots + 26u - 1$
c_3	$u^{85} + u^{84} + \cdots - 8586859u - 7135679$
c_5	$u^{85} + 10u^{84} + \cdots + 4292211u - 291526$
c_6, c_{11}	$u^{85} + 2u^{84} + \cdots - 564u - 172$
c_8	$u^{85} + u^{84} + \cdots + 15u + 1$
c_9	$u^{85} - 3u^{84} + \cdots + 5809196u - 707552$
c_{10}	$u^{85} - 12u^{84} + \cdots + 63060030u - 7539289$
c_{12}	$u^{85} - 3u^{84} + \cdots - 35799u - 3454$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{85} + 18y^{84} + \cdots - 228y - 1$
c_2, c_7	$y^{85} + 60y^{84} + \cdots - 140y - 1$
c_3	$y^{85} + 75y^{84} + \cdots - 496895527067841y - 50917914791041$
c_5	$y^{85} - 38y^{84} + \cdots + 7819625711645y - 84987408676$
c_6, c_{11}	$y^{85} - 50y^{84} + \cdots + 783184y - 29584$
c_8	$y^{85} - 15y^{84} + \cdots - 11y - 1$
c_9	$y^{85} + 77y^{84} + \cdots - 9930483397744y - 500629832704$
c_{10}	$y^{85} - 44y^{84} + \cdots + 214383869545346y - 56840878625521$
c_{12}	$y^{85} + 17y^{84} + \cdots - 589394319y - 11930116$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.998570 + 0.272294I$ $a = 0.475791 - 0.395407I$ $b = 0.032394 - 0.448924I$	$-1.43220 - 2.66932I$	0
$u = 0.998570 - 0.272294I$ $a = 0.475791 + 0.395407I$ $b = 0.032394 + 0.448924I$	$-1.43220 + 2.66932I$	0
$u = -0.078052 + 0.926381I$ $a = 1.92195 + 1.40477I$ $b = 0.773943 + 0.472131I$	$-0.217172 - 1.098890I$	0
$u = -0.078052 - 0.926381I$ $a = 1.92195 - 1.40477I$ $b = 0.773943 - 0.472131I$	$-0.217172 + 1.098890I$	0
$u = -0.981755 + 0.507072I$ $a = 0.196732 + 1.354770I$ $b = 0.04903 + 2.35138I$	$-3.61008 + 5.45903I$	0
$u = -0.981755 - 0.507072I$ $a = 0.196732 - 1.354770I$ $b = 0.04903 - 2.35138I$	$-3.61008 - 5.45903I$	0
$u = 0.476670 + 1.051240I$ $a = -0.325982 + 0.333193I$ $b = -0.425103 - 0.302685I$	$0.96688 - 5.57781I$	0
$u = 0.476670 - 1.051240I$ $a = -0.325982 - 0.333193I$ $b = -0.425103 + 0.302685I$	$0.96688 + 5.57781I$	0
$u = 0.668482 + 0.952846I$ $a = 0.945938 - 0.449100I$ $b = 0.277270 - 0.487750I$	$0.47254 - 2.58298I$	0
$u = 0.668482 - 0.952846I$ $a = 0.945938 + 0.449100I$ $b = 0.277270 + 0.487750I$	$0.47254 + 2.58298I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.191158 + 0.810743I$ $a = 0.399071 - 0.163081I$ $b = 1.13355 - 1.50881I$	$0.59219 + 4.00643I$	$9.81408 - 1.58250I$
$u = 0.191158 - 0.810743I$ $a = 0.399071 + 0.163081I$ $b = 1.13355 + 1.50881I$	$0.59219 - 4.00643I$	$9.81408 + 1.58250I$
$u = 0.920774 + 0.721880I$ $a = -1.023550 + 0.281002I$ $b = -0.67699 + 1.48386I$	$-4.32440 - 1.41643I$	0
$u = 0.920774 - 0.721880I$ $a = -1.023550 - 0.281002I$ $b = -0.67699 - 1.48386I$	$-4.32440 + 1.41643I$	0
$u = -0.114215 + 0.796267I$ $a = -1.47054 + 0.01938I$ $b = -0.738208 + 0.689403I$	$6.75942 - 3.17501I$	$7.34012 + 8.97310I$
$u = -0.114215 - 0.796267I$ $a = -1.47054 - 0.01938I$ $b = -0.738208 - 0.689403I$	$6.75942 + 3.17501I$	$7.34012 - 8.97310I$
$u = -0.289881 + 0.745166I$ $a = 1.140080 - 0.820492I$ $b = 1.57828 + 0.62135I$	$6.89613 + 1.55029I$	$8.65169 - 1.88696I$
$u = -0.289881 - 0.745166I$ $a = 1.140080 + 0.820492I$ $b = 1.57828 - 0.62135I$	$6.89613 - 1.55029I$	$8.65169 + 1.88696I$
$u = 0.736997 + 0.309730I$ $a = -1.003550 - 0.492868I$ $b = -1.219120 + 0.187207I$	$-3.36308 - 1.67385I$	$-3.09379 + 4.70980I$
$u = 0.736997 - 0.309730I$ $a = -1.003550 + 0.492868I$ $b = -1.219120 - 0.187207I$	$-3.36308 + 1.67385I$	$-3.09379 - 4.70980I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.784929+0.921642I$ $a=-0.819247-1.130810I$ $b=\ 0.36426-1.68162I$	$-6.55646-2.64119I$	0
$u=-0.784929-0.921642I$ $a=-0.819247+1.130810I$ $b=\ 0.36426+1.68162I$	$-6.55646+2.64119I$	0
$u=-1.007190+0.675787I$ $a=-1.327370+0.100127I$ $b=-0.324588-1.238780I$	$-5.94666+1.03450I$	0
$u=-1.007190-0.675787I$ $a=-1.327370-0.100127I$ $b=-0.324588+1.238780I$	$-5.94666-1.03450I$	0
$u=\ 1.111950+0.502144I$ $a=-0.682297-0.061208I$ $b=-0.457963+0.733480I$	$-3.52529-1.34010I$	0
$u=\ 1.111950-0.502144I$ $a=-0.682297+0.061208I$ $b=-0.457963-0.733480I$	$-3.52529+1.34010I$	0
$u=-0.840950+0.891035I$ $a=-1.51043-0.31627I$ $b=-1.00700-1.77133I$	$-6.68939+8.75504I$	0
$u=-0.840950-0.891035I$ $a=-1.51043+0.31627I$ $b=-1.00700+1.77133I$	$-6.68939-8.75504I$	0
$u=\ 0.528662+0.545614I$ $a=\ 1.47316-2.31272I$ $b=-0.688160-0.114075I$	$-0.66682-6.93179I$	$4.00000+11.91492I$
$u=\ 0.528662-0.545614I$ $a=\ 1.47316+2.31272I$ $b=-0.688160+0.114075I$	$-0.66682+6.93179I$	$4.00000-11.91492I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.064801+1.255050I$ $a=-0.327089+0.427849I$ $b=\ \ 0.094931+0.511084I$	$5.65951+1.98333I$	0
$u=-0.064801-1.255050I$ $a=-0.327089-0.427849I$ $b=\ \ 0.094931-0.511084I$	$5.65951-1.98333I$	0
$u=\ \ 0.995122+0.770188I$ $a=\ \ 0.941647-0.500048I$ $b=\ \ 0.14802-1.67413I$	$-2.68266+2.97750I$	0
$u=\ \ 0.995122-0.770188I$ $a=\ \ 0.941647+0.500048I$ $b=\ \ 0.14802+1.67413I$	$-2.68266-2.97750I$	0
$u=-0.117101+0.723899I$ $a=-0.793624-0.270354I$ $b=-1.35991+0.87928I$	$-0.655020+1.237870I$	$10.88550-2.57862I$
$u=-0.117101-0.723899I$ $a=-0.793624+0.270354I$ $b=-1.35991-0.87928I$	$-0.655020-1.237870I$	$10.88550+2.57862I$
$u=-0.443214+0.560209I$ $a=\ \ 1.84470+0.04018I$ $b=\ \ 0.881631-0.377895I$	$5.65422+5.51636I$	$16.4245+6.0413I$
$u=-0.443214-0.560209I$ $a=\ \ 1.84470-0.04018I$ $b=\ \ 0.881631+0.377895I$	$5.65422-5.51636I$	$16.4245-6.0413I$
$u=-0.926014+0.904807I$ $a=\ \ 1.315410+0.385771I$ $b=\ \ 0.51296+1.85233I$	$-8.99774+4.10945I$	0
$u=-0.926014-0.904807I$ $a=\ \ 1.315410-0.385771I$ $b=\ \ 0.51296-1.85233I$	$-8.99774-4.10945I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.016570 + 0.802307I$ $a = 0.501441 - 0.416278I$ $b = 0.370374 - 1.209920I$	$-0.70125 - 3.83022I$	0
$u = 1.016570 - 0.802307I$ $a = 0.501441 + 0.416278I$ $b = 0.370374 + 1.209920I$	$-0.70125 + 3.83022I$	0
$u = 0.393407 + 1.253670I$ $a = 0.816751 - 0.028019I$ $b = 0.380543 - 0.236715I$	$0.87862 - 2.40445I$	0
$u = 0.393407 - 1.253670I$ $a = 0.816751 + 0.028019I$ $b = 0.380543 + 0.236715I$	$0.87862 + 2.40445I$	0
$u = -0.873771 + 0.982867I$ $a = 0.932327 + 0.814540I$ $b = -0.11560 + 1.83982I$	$-8.72930 + 2.55502I$	0
$u = -0.873771 - 0.982867I$ $a = 0.932327 - 0.814540I$ $b = -0.11560 - 1.83982I$	$-8.72930 - 2.55502I$	0
$u = -0.322301 + 0.597684I$ $a = -0.98727 + 2.66264I$ $b = -1.275690 - 0.115283I$	$6.34439 + 0.92935I$	$20.3887 - 11.8228I$
$u = -0.322301 - 0.597684I$ $a = -0.98727 - 2.66264I$ $b = -1.275690 + 0.115283I$	$6.34439 - 0.92935I$	$20.3887 + 11.8228I$
$u = 0.012130 + 0.671137I$ $a = -3.61616 - 1.88171I$ $b = -1.160720 - 0.362352I$	$1.07314 + 5.28326I$	$12.72232 - 3.52720I$
$u = 0.012130 - 0.671137I$ $a = -3.61616 + 1.88171I$ $b = -1.160720 + 0.362352I$	$1.07314 - 5.28326I$	$12.72232 + 3.52720I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.320917 + 0.576461I$ $a = 0.44228 + 2.73702I$ $b = 0.595528 - 0.251518I$	$-1.32168 - 2.14852I$	$5.67361 + 6.10919I$
$u = 0.320917 - 0.576461I$ $a = 0.44228 - 2.73702I$ $b = 0.595528 + 0.251518I$	$-1.32168 + 2.14852I$	$5.67361 - 6.10919I$
$u = 0.792598 + 1.092070I$ $a = -0.934721 + 0.937326I$ $b = -0.06898 + 1.54472I$	$-3.16562 - 4.95912I$	0
$u = 0.792598 - 1.092070I$ $a = -0.934721 - 0.937326I$ $b = -0.06898 - 1.54472I$	$-3.16562 + 4.95912I$	0
$u = -1.068700 + 0.849855I$ $a = -0.730782 - 0.967920I$ $b = 0.05722 - 1.85054I$	$-10.13780 - 3.22951I$	0
$u = -1.068700 - 0.849855I$ $a = -0.730782 + 0.967920I$ $b = 0.05722 + 1.85054I$	$-10.13780 + 3.22951I$	0
$u = 0.306326 + 0.542199I$ $a = 1.96796 + 0.29112I$ $b = 2.60639 - 0.46014I$	$0.38559 - 6.54347I$	$7.3888 + 12.6144I$
$u = 0.306326 - 0.542199I$ $a = 1.96796 - 0.29112I$ $b = 2.60639 + 0.46014I$	$0.38559 + 6.54347I$	$7.3888 - 12.6144I$
$u = 0.854442 + 1.081810I$ $a = 1.21765 - 0.74563I$ $b = 0.39692 - 1.85331I$	$-1.70018 - 9.75286I$	0
$u = 0.854442 - 1.081810I$ $a = 1.21765 + 0.74563I$ $b = 0.39692 + 1.85331I$	$-1.70018 + 9.75286I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.103910+0.843065I$ $a=\ \ 0.694324+0.843846I$ $b=-0.27662+1.65789I$	$-6.92146-10.17200I$	0
$u=-1.103910-0.843065I$ $a=\ \ 0.694324-0.843846I$ $b=-0.27662-1.65789I$	$-6.92146+10.17200I$	0
$u=\ \ 0.892642+1.067060I$ $a=\ \ 0.938403-0.382310I$ $b=\ \ 0.697204-1.065550I$	$0.08231-3.35812I$	0
$u=\ \ 0.892642-1.067060I$ $a=\ \ 0.938403+0.382310I$ $b=\ \ 0.697204+1.065550I$	$0.08231+3.35812I$	0
$u=-0.343571+0.493749I$ $a=-1.63279-0.47457I$ $b=-0.610765+0.376866I$	$0.27736+2.37656I$	$5.87909-3.02757I$
$u=-0.343571-0.493749I$ $a=-1.63279+0.47457I$ $b=-0.610765-0.376866I$	$0.27736-2.37656I$	$5.87909+3.02757I$
$u=-0.92042+1.08713I$ $a=-1.44989-0.76383I$ $b=-0.72095-1.86483I$	$-9.35077+10.45160I$	0
$u=-0.92042-1.08713I$ $a=-1.44989+0.76383I$ $b=-0.72095+1.86483I$	$-9.35077-10.45160I$	0
$u=-0.99205+1.02772I$ $a=\ \ 1.22952+1.05529I$ $b=\ \ 0.60550+1.78764I$	$-1.88830+3.70194I$	0
$u=-0.99205-1.02772I$ $a=\ \ 1.22952-1.05529I$ $b=\ \ 0.60550-1.78764I$	$-1.88830-3.70194I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.082020+0.555614I$ $a=\ \ 1.56239+0.33583I$ $b=\ \ 0.472829-0.368700I$	$0.944298-0.816678I$	$7.73863+4.64902I$
$u=-0.082020-0.555614I$ $a=\ \ 1.56239-0.33583I$ $b=\ \ 0.472829+0.368700I$	$0.944298+0.816678I$	$7.73863-4.64902I$
$u=-0.92506+1.10315I$ $a=\ \ 1.39631+0.61370I$ $b=\ \ 0.83273+1.89767I$	$-6.0450+17.5019I$	0
$u=-0.92506-1.10315I$ $a=\ \ 1.39631-0.61370I$ $b=\ \ 0.83273-1.89767I$	$-6.0450-17.5019I$	0
$u=-0.86980+1.18983I$ $a=-0.546302-0.583978I$ $b=\ \ 0.00460-1.61732I$	$-4.35655+5.88159I$	0
$u=-0.86980-1.18983I$ $a=-0.546302+0.583978I$ $b=\ \ 0.00460+1.61732I$	$-4.35655-5.88159I$	0
$u=-1.14823+0.94306I$ $a=\ \ 0.890564+0.131393I$ $b=\ \ 0.15158+1.57372I$	$-7.94495+4.03692I$	0
$u=-1.14823-0.94306I$ $a=\ \ 0.890564-0.131393I$ $b=\ \ 0.15158-1.57372I$	$-7.94495-4.03692I$	0
$u=-0.503477$ $a=\ \ 1.44168$ $b=\ \ 0.367391$	1.50635	7.56670
$u=\ \ 0.94565+1.23775I$ $a=-0.651844+0.326553I$ $b=-0.437766+1.035920I$	$-1.43053-6.16651I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.94565 - 1.23775I$ $a = -0.651844 - 0.326553I$ $b = -0.437766 - 1.035920I$	$-1.43053 + 6.16651I$	0
$u = 0.38268 + 1.53582I$ $a = -0.201689 - 0.209453I$ $b = 0.120638 - 0.218357I$	$4.55229 - 8.07421I$	0
$u = 0.38268 - 1.53582I$ $a = -0.201689 + 0.209453I$ $b = 0.120638 + 0.218357I$	$4.55229 + 8.07421I$	0
$u = 0.0039208 + 0.1000890I$ $a = 10.56990 - 4.84782I$ $b = -0.257898 + 1.352100I$	$-3.13128 + 2.89223I$	$0.61723 - 2.40153I$
$u = 0.0039208 - 0.1000890I$ $a = 10.56990 + 4.84782I$ $b = -0.257898 - 1.352100I$	$-3.13128 - 2.89223I$	$0.61723 + 2.40153I$

II.

$\boldsymbol{I_2^u = \langle -2.67\times10^{19}u^{27}+1.56\times10^{20}u^{26}+\cdots+1.03\times10^{19}b+9.72\times10^{16},\ -2.84\times10^{19}u^{27}+1.87\times10^{20}u^{26}+\cdots+1.03\times10^{19}a+1.15\times10^{20},\ u^{28}-6u^{27}+\cdots-5u+1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_5 = \begin{pmatrix} -u \\ u^3+u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 2.74689u^{27} - 18.0903u^{26} + \cdots + 70.8440u - 11.1592 \\ 2.58870u^{27} - 15.1495u^{26} + \cdots + 16.1735u - 0.00941249 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.922280u^{27} - 7.58964u^{26} + \cdots + 65.4625u - 12.7588 \\ 2.19598u^{27} - 12.9739u^{26} + \cdots + 16.5836u - 0.456358 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.158190u^{27} - 2.94084u^{26} + \cdots + 54.6705u - 11.1498 \\ 2.58870u^{27} - 15.1495u^{26} + \cdots + 16.1735u - 0.00941249 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 6.62441u^{27} - 38.9685u^{26} + \cdots + 62.0136u - 3.81446 \\ 0.731807u^{27} - 3.46192u^{26} + \cdots - 15.4905u + 5.80190 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -5.07562u^{27} + 29.3393u^{26} + \cdots - 31.5420u - 0.554744 \\ 0.490281u^{27} - 3.23397u^{26} + \cdots + 12.0828u - 3.71161 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 7.45123u^{27} - 44.1923u^{26} + \cdots + 79.1010u - 8.17538 \\ 0.241924u^{27} - 0.802233u^{26} + \cdots - 10.2116u + 4.87601 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 2.49779u^{27} - 15.0998u^{26} + \cdots - 1.12236u + 4.10008 \\ 0.0110535u^{27} + 1.02730u^{26} + \cdots - 24.9223u + 5.52391 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 2.48674u^{27} - 16.1271u^{26} + \cdots + 23.7999u - 1.42383 \\ 0.0110535u^{27} + 1.02730u^{26} + \cdots - 24.9223u + 5.52391 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{20717020838201378085}{10329580082896915583}u^{27} + \frac{118843568226093884873}{10329580082896915583}u^{26} + \cdots - \frac{59958528426800058823}{10329580082896915583}u + \frac{187047322357317549099}{10329580082896915583}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{28} - 6u^{27} + \cdots - 5u + 1$
c_2	$u^{28} + 6u^{26} + \cdots - 3u + 1$
c_3	$u^{28} + 2u^{27} + \cdots + u + 1$
c_4	$u^{28} + 6u^{27} + \cdots + 5u + 1$
c_5	$u^{28} - 4u^{27} + \cdots + 15u + 5$
c_6	$u^{28} + u^{27} + \cdots + 28u + 28$
c_7	$u^{28} + 6u^{26} + \cdots + 3u + 1$
c_8	$u^{28} + 17u^{27} + \cdots + 6u + 1$
c_9	$u^{28} + 2u^{27} + \cdots - 28u + 28$
c_{10}	$u^{28} + 4u^{27} + \cdots + 3u + 1$
c_{11}	$u^{28} - u^{27} + \cdots - 28u + 28$
c_{12}	$u^{28} + 3u^{27} + \cdots + 8u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{28} + 10y^{27} + \cdots + 27y + 1$
c_2, c_7	$y^{28} + 12y^{27} + \cdots + 15y + 1$
c_3	$y^{28} + 6y^{27} + \cdots - 5y + 1$
c_5	$y^{28} - 18y^{27} + \cdots + 255y + 25$
c_6, c_{11}	$y^{28} - 25y^{27} + \cdots - 13272y + 784$
c_8	$y^{28} - 15y^{27} + \cdots + 2y + 1$
c_9	$y^{28} + 2y^{27} + \cdots - 7000y + 784$
c_{10}	$y^{28} - 4y^{27} + \cdots - 3y + 1$
c_{12}	$y^{28} - 11y^{27} + \cdots + 180y^2 + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.195450 + 1.016640I$ $a = -0.988655 - 0.103656I$ $b = -0.633208 - 0.530557I$	$6.94244 + 2.59962I$	$10.78801 + 2.45502I$
$u = 0.195450 - 1.016640I$ $a = -0.988655 + 0.103656I$ $b = -0.633208 + 0.530557I$	$6.94244 - 2.59962I$	$10.78801 - 2.45502I$
$u = -0.272084 + 0.912765I$ $a = -0.922113 + 0.808358I$ $b = -1.197330 - 0.283008I$	$7.42228 + 2.16128I$	$14.1910 - 6.6073I$
$u = -0.272084 - 0.912765I$ $a = -0.922113 - 0.808358I$ $b = -1.197330 + 0.283008I$	$7.42228 - 2.16128I$	$14.1910 + 6.6073I$
$u = 1.003010 + 0.456220I$ $a = -0.749770 - 0.294796I$ $b = -0.626372 + 0.815843I$	$-3.06393 - 0.63831I$	$2.58541 - 1.90651I$
$u = 1.003010 - 0.456220I$ $a = -0.749770 + 0.294796I$ $b = -0.626372 - 0.815843I$	$-3.06393 + 0.63831I$	$2.58541 + 1.90651I$
$u = -0.828748 + 0.782547I$ $a = 0.346150 + 0.945765I$ $b = -0.01787 + 2.00252I$	$-3.26291 + 4.77226I$	$4.29602 - 3.74649I$
$u = -0.828748 - 0.782547I$ $a = 0.346150 - 0.945765I$ $b = -0.01787 - 2.00252I$	$-3.26291 - 4.77226I$	$4.29602 + 3.74649I$
$u = 0.526156 + 0.620084I$ $a = 1.56323 + 0.05342I$ $b = 0.846136 + 0.322593I$	$5.48166 - 5.74807I$	$-0.1857 + 15.7732I$
$u = 0.526156 - 0.620084I$ $a = 1.56323 - 0.05342I$ $b = 0.846136 - 0.322593I$	$5.48166 + 5.74807I$	$-0.1857 - 15.7732I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.047610 + 0.605260I$ $a = 0.053121 - 0.268632I$ $b = 0.252238 - 0.887116I$	$-1.63945 - 3.87723I$	$-1.59959 + 7.49893I$
$u = 1.047610 - 0.605260I$ $a = 0.053121 + 0.268632I$ $b = 0.252238 + 0.887116I$	$-1.63945 + 3.87723I$	$-1.59959 - 7.49893I$
$u = -0.383656 + 0.566202I$ $a = 0.73253 - 2.19184I$ $b = 1.40131 + 0.23846I$	$6.13703 + 0.75645I$	$-3.60377 + 7.62414I$
$u = -0.383656 - 0.566202I$ $a = 0.73253 + 2.19184I$ $b = 1.40131 - 0.23846I$	$6.13703 - 0.75645I$	$-3.60377 - 7.62414I$
$u = 0.386244 + 1.310810I$ $a = 1.050850 + 0.244714I$ $b = 0.707859 + 0.035635I$	$1.08520 - 2.10072I$	$14.0775 - 6.4865I$
$u = 0.386244 - 1.310810I$ $a = 1.050850 - 0.244714I$ $b = 0.707859 - 0.035635I$	$1.08520 + 2.10072I$	$14.0775 + 6.4865I$
$u = -1.09520 + 0.92992I$ $a = -0.956782 - 0.137648I$ $b = -0.18150 - 1.62676I$	$-7.76232 + 3.90199I$	$15.7592 + 5.7297I$
$u = -1.09520 - 0.92992I$ $a = -0.956782 + 0.137648I$ $b = -0.18150 + 1.62676I$	$-7.76232 - 3.90199I$	$15.7592 - 5.7297I$
$u = 0.163944 + 0.506934I$ $a = 0.56996 - 1.48095I$ $b = -0.967645 + 0.372767I$	$-1.57751 + 1.02438I$	$1.56957 + 0.86124I$
$u = 0.163944 - 0.506934I$ $a = 0.56996 + 1.48095I$ $b = -0.967645 - 0.372767I$	$-1.57751 - 1.02438I$	$1.56957 - 0.86124I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.35297 + 1.42468I$ $a = -0.496185 - 0.273136I$ $b = -0.694607 + 0.009257I$	$5.06460 - 7.92766I$	$13.27575 + 4.34960I$
$u = 0.35297 - 1.42468I$ $a = -0.496185 + 0.273136I$ $b = -0.694607 - 0.009257I$	$5.06460 + 7.92766I$	$13.27575 - 4.34960I$
$u = 0.96431 + 1.10865I$ $a = 0.951698 - 0.597069I$ $b = 0.643637 - 1.122090I$	$0.48555 - 3.80339I$	$13.8920 + 11.0557I$
$u = 0.96431 - 1.10865I$ $a = 0.951698 + 0.597069I$ $b = 0.643637 + 1.122090I$	$0.48555 + 3.80339I$	$13.8920 - 11.0557I$
$u = 0.87973 + 1.24865I$ $a = -0.605082 + 0.439878I$ $b = -0.238958 + 1.129250I$	$-0.74446 - 6.38247I$	$7.05888 + 9.14358I$
$u = 0.87973 - 1.24865I$ $a = -0.605082 - 0.439878I$ $b = -0.238958 - 1.129250I$	$-0.74446 + 6.38247I$	$7.05888 - 9.14358I$
$u = 0.060253 + 0.342971I$ $a = 2.95104 + 3.62529I$ $b = 1.70630 + 0.00056I$	$0.23623 + 5.69463I$	$4.39569 - 4.52257I$
$u = 0.060253 - 0.342971I$ $a = 2.95104 - 3.62529I$ $b = 1.70630 - 0.00056I$	$0.23623 - 5.69463I$	$4.39569 + 4.52257I$

III. $I_3^u = \langle b,\ a-u+1,\ u^2-u+1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ -u+1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ u-1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u-1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 2u-1 \\ 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u-1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u-1 \\ u-1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 2u-1 \\ 1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u-1 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -2 \\ u-1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u-1 \\ u-1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 8u+2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_7 c_{10}, c_{12}	$u^2 - u + 1$
c_2, c_4, c_8	$u^2 + u + 1$
c_3	$(u-1)^2$
c_6, c_9, c_{11}	u^2

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5, c_7, c_8 c_{10}, c_{12}	$y^2 + y + 1$
c_3	$(y-1)^2$
c_6, c_9, c_{11}	y^2

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.500000 + 0.866025I$		
$a = -0.500000 + 0.866025I$	$-4.05977I$	$6.00000 + 6.92820I$
$b = 0$		
$u = 0.500000 - 0.866025I$		
$a = -0.500000 - 0.866025I$	$4.05977I$	$6.00000 - 6.92820I$
$b = 0$		

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^2-u+1)(u^{28}-6u^{27}+\cdots-5u+1)(u^{85}-4u^{84}+\cdots+2u-1)$
c_2	$(u^2+u+1)(u^{28}+6u^{26}+\cdots-3u+1)(u^{85}+30u^{83}+\cdots+26u-1)$
c_3	$((u-1)^2)(u^{28}+2u^{27}+\cdots+u+1)$ $\cdot(u^{85}+u^{84}+\cdots-8586859u-7135679)$
c_4	$(u^2+u+1)(u^{28}+6u^{27}+\cdots+5u+1)(u^{85}-4u^{84}+\cdots+2u-1)$
c_5	$(u^2-u+1)(u^{28}-4u^{27}+\cdots+15u+5)$ $\cdot(u^{85}+10u^{84}+\cdots+4292211u-291526)$
c_6	$u^2(u^{28}+u^{27}+\cdots+28u+28)(u^{85}+2u^{84}+\cdots-564u-172)$
c_7	$(u^2-u+1)(u^{28}+6u^{26}+\cdots+3u+1)(u^{85}+30u^{83}+\cdots+26u-1)$
c_8	$(u^2+u+1)(u^{28}+17u^{27}+\cdots+6u+1)(u^{85}+u^{84}+\cdots+15u+1)$
c_9	$u^2(u^{28}+2u^{27}+\cdots-28u+28)$ $\cdot(u^{85}-3u^{84}+\cdots+5809196u-707552)$
c_{10}	$(u^2-u+1)(u^{28}+4u^{27}+\cdots+3u+1)$ $\cdot(u^{85}-12u^{84}+\cdots+63060030u-7539289)$
c_{11}	$u^2(u^{28}-u^{27}+\cdots-28u+28)(u^{85}+2u^{84}+\cdots-564u-172)$
c_{12}	$(u^2-u+1)(u^{28}+3u^{27}+\cdots+8u+1)$ $\cdot(u^{85}-3u^{84}+\cdots-35799u-3454)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y^2+y+1)(y^{28}+10y^{27}+\cdots+27y+1)(y^{85}+18y^{84}+\cdots-228y-1)$
c_2, c_7	$(y^2+y+1)(y^{28}+12y^{27}+\cdots+15y+1)(y^{85}+60y^{84}+\cdots-140y-1)$
c_3	$((y-1)^2)(y^{28}+6y^{27}+\cdots-5y+1)$ $\cdot(y^{85}+75y^{84}+\cdots-496895527067841y-50917914791041)$
c_5	$(y^2+y+1)(y^{28}-18y^{27}+\cdots+255y+25)$ $\cdot(y^{85}-38y^{84}+\cdots+7819625711645y-84987408676)$
c_6, c_{11}	$y^2(y^{28}-25y^{27}+\cdots-13272y+784)$ $\cdot(y^{85}-50y^{84}+\cdots+783184y-29584)$
c_8	$(y^2+y+1)(y^{28}-15y^{27}+\cdots+2y+1)(y^{85}-15y^{84}+\cdots-11y-1)$
c_9	$y^2(y^{28}+2y^{27}+\cdots-7000y+784)$ $\cdot(y^{85}+77y^{84}+\cdots-9930483397744y-500629832704)$
c_{10}	$(y^2+y+1)(y^{28}-4y^{27}+\cdots-3y+1)$ $\cdot(y^{85}-44y^{84}+\cdots+214383869545346y-56840878625521)$
c_{12}	$(y^2+y+1)(y^{28}-11y^{27}+\cdots+180y^2+1)$ $\cdot(y^{85}+17y^{84}+\cdots-589394319y-11930116)$