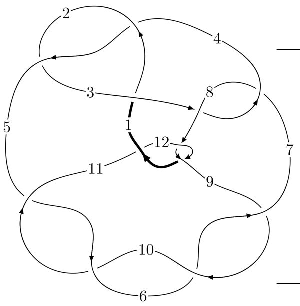
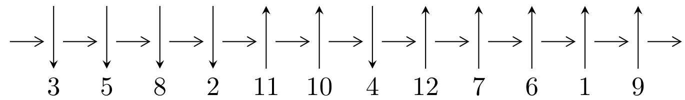
$12a_{0109}$ $(K12a_{0109})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -5.02927 \times 10^{100} u^{87} - 6.39816 \times 10^{100} u^{86} + \cdots + 3.58918 \times 10^{101} b + 2.49262 \times 10^{101},$$
$$7.25285 \times 10^{101} u^{87} + 1.13095 \times 10^{102} u^{86} + \cdots + 2.15351 \times 10^{102} a - 5.93535 \times 10^{102},\ u^{88} + 2u^{87} + \cdots - 40u$$
$$I_2^u = \langle b + 1,\ -4u^4 - 3u^3 - 16u^2 + 3a - 8u - 10,\ u^5 + u^4 + 4u^3 + 3u^2 + 3u + 1 \rangle$$
$$I_3^u = \langle 4a^2u - 6a^2 - 8au + 17b + 12a + 2u - 20,\ 4a^3 + 6a^2u - 8a^2 - 2au - u - 6,\ u^2 + 2 \rangle$$

$$I_1^v = \langle a,\ -v^2 + b + 3v + 1,\ v^3 - 2v^2 - 3v - 1 \rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 102 representations.

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[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. $\boldsymbol{I^u_1 = \langle -5.03 \times 10^{100} u^{87} - 6.40 \times 10^{100} u^{86} + \cdots + 3.59 \times 10^{101} b + 2.49 \times 10^{101},\ 7.25 \times 10^{101} u^{87} + 1.13 \times 10^{102} u^{86} + \cdots + 2.15 \times 10^{102} a - 5.94 \times 10^{102},\ u^{88} + 2u^{87} + \cdots - 40u - 8 \rangle}$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} -0.336792u^{87} - 0.525165u^{86} + \cdots + 5.92456u + 2.75613 \\ 0.140123u^{87} + 0.178262u^{86} + \cdots - 3.22318u - 0.694480 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -0.196669u^{87} - 0.346903u^{86} + \cdots + 2.70138u + 2.06165 \\ 0.140123u^{87} + 0.178262u^{86} + \cdots - 3.22318u - 0.694480 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.0645847u^{87} - 0.103802u^{86} + \cdots - 3.32912u - 1.32103 \\ -0.0244135u^{87} - 0.0970148u^{86} + \cdots + 5.00657u + 1.44969 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.0540904u^{87} - 0.114055u^{86} + \cdots - 2.19327u + 2.15068 \\ -0.157753u^{87} - 0.184210u^{86} + \cdots + 5.70265u + 0.193558 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} -0.0379577u^{87} - 0.0552205u^{86} + \cdots + 5.05922u + 1.39579 \\ 0.00232376u^{87} + 0.0655726u^{86} + \cdots - 3.90590u - 1.43269 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^3 - 2u \\ u^5 + 3u^3 + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.173051u^{87} - 0.352789u^{86} + \cdots + 2.21047u - 0.306496 \\ -0.0357757u^{87} - 0.0453033u^{86} + \cdots + 2.09794u + 0.712500 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.162012u^{87} + 0.0691568u^{86} + \cdots + 10.5321u - 2.78961$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{88} + 43u^{87} + \cdots + 5850u + 81$
c_2, c_4	$u^{88} - 9u^{87} + \cdots + 12u + 9$
c_3, c_7	$u^{88} + 2u^{87} + \cdots - 192u - 288$
c_5, c_6, c_9 c_{10}	$u^{88} + 2u^{87} + \cdots - 40u - 8$
c_8, c_{12}	$u^{88} - 5u^{87} + \cdots - 525u + 49$
c_{11}	$u^{88} - 41u^{87} + \cdots - 246519u + 2401$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{88} + 13y^{87} + \cdots - 26338446y + 6561$
c_2, c_4	$y^{88} - 43y^{87} + \cdots - 5850y + 81$
c_3, c_7	$y^{88} + 42y^{87} + \cdots + 59904y + 82944$
c_5, c_6, c_9 c_{10}	$y^{88} + 104y^{87} + \cdots - 448y + 64$
c_8, c_{12}	$y^{88} - 41y^{87} + \cdots - 246519y + 2401$
c_{11}	$y^{88} + 23y^{87} + \cdots - 42416044391y + 5764801$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.544232 + 0.801981I$ $a = 0.45727 + 1.70633I$ $b = 1.122770 - 0.558543I$	$-1.95733 + 7.43628I$	0
$u = 0.544232 - 0.801981I$ $a = 0.45727 - 1.70633I$ $b = 1.122770 + 0.558543I$	$-1.95733 - 7.43628I$	0
$u = -0.639200 + 0.724714I$ $a = 0.19749 - 2.03333I$ $b = 1.172430 + 0.616645I$	$0.25275 - 13.11110I$	0
$u = -0.639200 - 0.724714I$ $a = 0.19749 + 2.03333I$ $b = 1.172430 - 0.616645I$	$0.25275 + 13.11110I$	0
$u = 0.425748 + 0.993580I$ $a = 0.064085 + 0.159980I$ $b = 0.957165 + 0.380322I$	$-3.21813 + 0.79813I$	0
$u = 0.425748 - 0.993580I$ $a = 0.064085 - 0.159980I$ $b = 0.957165 - 0.380322I$	$-3.21813 - 0.79813I$	0
$u = -0.589414 + 0.668596I$ $a = -0.901108 + 0.955267I$ $b = 0.339571 - 0.905352I$	$2.77273 - 7.53893I$	0
$u = -0.589414 - 0.668596I$ $a = -0.901108 - 0.955267I$ $b = 0.339571 + 0.905352I$	$2.77273 + 7.53893I$	0
$u = 0.521144 + 0.708575I$ $a = 0.09047 - 2.35621I$ $b = -1.035090 + 0.541644I$	$-1.93302 + 6.75586I$	0
$u = 0.521144 - 0.708575I$ $a = 0.09047 + 2.35621I$ $b = -1.035090 - 0.541644I$	$-1.93302 - 6.75586I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.454359 + 0.719803I$ $a = 0.108044 + 0.326009I$ $b = -1.287330 + 0.187629I$	$-2.77018 - 4.12176I$	$0. + 7.16112I$
$u = -0.454359 - 0.719803I$ $a = 0.108044 - 0.326009I$ $b = -1.287330 - 0.187629I$	$-2.77018 + 4.12176I$	$0. - 7.16112I$
$u = 0.189661 + 0.796762I$ $a = -0.421221 + 0.469754I$ $b = -1.170030 - 0.256475I$	$-4.00054 - 0.43094I$	$-4.62005 - 1.23771I$
$u = 0.189661 - 0.796762I$ $a = -0.421221 - 0.469754I$ $b = -1.170030 + 0.256475I$	$-4.00054 + 0.43094I$	$-4.62005 + 1.23771I$
$u = 0.476204 + 0.665286I$ $a = -0.583867 - 0.579072I$ $b = 0.308494 + 0.733628I$	$0.39849 + 2.53090I$	$2.00000 - 3.36549I$
$u = 0.476204 - 0.665286I$ $a = -0.583867 + 0.579072I$ $b = 0.308494 - 0.733628I$	$0.39849 - 2.53090I$	$2.00000 + 3.36549I$
$u = -0.325850 + 0.749057I$ $a = -0.33571 + 2.12266I$ $b = -1.063440 - 0.409718I$	$-3.62884 - 1.93734I$	$-4.67467 + 2.40265I$
$u = -0.325850 - 0.749057I$ $a = -0.33571 - 2.12266I$ $b = -1.063440 + 0.409718I$	$-3.62884 + 1.93734I$	$-4.67467 - 2.40265I$
$u = -0.764680 + 0.260523I$ $a = -1.01456 + 1.01023I$ $b = 1.121010 - 0.587805I$	$1.64540 + 8.43286I$	$2.93830 - 6.25674I$
$u = -0.764680 - 0.260523I$ $a = -1.01456 - 1.01023I$ $b = 1.121010 + 0.587805I$	$1.64540 - 8.43286I$	$2.93830 + 6.25674I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.209318 + 1.208190I$ $a = 0.464577 + 0.697157I$ $b = 0.852854 - 0.450479I$	$-3.00819 + 4.00876I$	0
$u = 0.209318 - 1.208190I$ $a = 0.464577 - 0.697157I$ $b = 0.852854 + 0.450479I$	$-3.00819 - 4.00876I$	0
$u = 0.367904 + 0.650557I$ $a = 1.28515 + 1.07932I$ $b = -0.523066 - 0.570388I$	$-0.39958 + 2.25212I$	$1.06124 - 3.79280I$
$u = 0.367904 - 0.650557I$ $a = 1.28515 - 1.07932I$ $b = -0.523066 + 0.570388I$	$-0.39958 - 2.25212I$	$1.06124 + 3.79280I$
$u = -0.295855 + 1.218520I$ $a = 0.010588 + 0.192785I$ $b = 1.046980 - 0.516890I$	$-3.02122 + 4.63137I$	0
$u = -0.295855 - 1.218520I$ $a = 0.010588 - 0.192785I$ $b = 1.046980 + 0.516890I$	$-3.02122 - 4.63137I$	0
$u = 0.736276 + 0.098653I$ $a = -0.817831 - 0.970106I$ $b = 1.025650 + 0.511792I$	$0.17226 - 3.17277I$	$1.85523 + 2.82339I$
$u = 0.736276 - 0.098653I$ $a = -0.817831 + 0.970106I$ $b = 1.025650 - 0.511792I$	$0.17226 + 3.17277I$	$1.85523 - 2.82339I$
$u = -0.674195 + 0.305262I$ $a = 0.11126 - 1.73615I$ $b = 0.372533 + 0.786143I$	$3.86256 + 3.27144I$	$6.73775 - 1.69394I$
$u = -0.674195 - 0.305262I$ $a = 0.11126 + 1.73615I$ $b = 0.372533 - 0.786143I$	$3.86256 - 3.27144I$	$6.73775 + 1.69394I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.034179 + 0.718127I$ $a = 0.764549 - 0.742243I$ $b = -0.184555 + 0.451760I$	$-1.22278 + 1.55214I$	$-0.78508 - 5.01782I$
$u = 0.034179 - 0.718127I$ $a = 0.764549 + 0.742243I$ $b = -0.184555 - 0.451760I$	$-1.22278 - 1.55214I$	$-0.78508 + 5.01782I$
$u = -0.317676 + 0.640571I$ $a = 1.74066 - 1.75496I$ $b = 1.001370 + 0.622107I$	$3.82065 - 4.46578I$	$2.93072 + 6.78920I$
$u = -0.317676 - 0.640571I$ $a = 1.74066 + 1.75496I$ $b = 1.001370 - 0.622107I$	$3.82065 + 4.46578I$	$2.93072 - 6.78920I$
$u = -0.440566 + 0.518571I$ $a = -1.302340 - 0.305908I$ $b = 0.590084 - 0.713658I$	$5.03768 + 0.64765I$	$6.53702 + 1.45121I$
$u = -0.440566 - 0.518571I$ $a = -1.302340 + 0.305908I$ $b = 0.590084 + 0.713658I$	$5.03768 - 0.64765I$	$6.53702 - 1.45121I$
$u = 0.617215 + 0.203807I$ $a = 1.68584 + 1.45481I$ $b = -1.002130 - 0.427316I$	$-0.43590 - 2.88040I$	$1.88878 + 2.99748I$
$u = 0.617215 - 0.203807I$ $a = 1.68584 - 1.45481I$ $b = -1.002130 + 0.427316I$	$-0.43590 + 2.88040I$	$1.88878 - 2.99748I$
$u = 0.594706 + 0.256396I$ $a = -0.073072 + 1.290030I$ $b = 0.553067 - 0.541679I$	$1.61593 + 1.10166I$	$4.49842 - 4.17125I$
$u = 0.594706 - 0.256396I$ $a = -0.073072 - 1.290030I$ $b = 0.553067 + 0.541679I$	$1.61593 - 1.10166I$	$4.49842 + 4.17125I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.037223 + 1.354310I$ $a = 1.29186 + 1.33974I$ $b = -0.935436 - 0.213125I$	$-4.84743 - 0.66518I$	0
$u = 0.037223 - 1.354310I$ $a = 1.29186 - 1.33974I$ $b = -0.935436 + 0.213125I$	$-4.84743 + 0.66518I$	0
$u = -0.184148 + 1.365040I$ $a = 0.520576 - 0.880021I$ $b = 0.481633 + 0.586417I$	$-1.360140 + 0.220167I$	0
$u = -0.184148 - 1.365040I$ $a = 0.520576 + 0.880021I$ $b = 0.481633 - 0.586417I$	$-1.360140 - 0.220167I$	0
$u = -0.396296 + 0.432190I$ $a = -0.49246 - 1.73630I$ $b = 0.740300 + 0.830855I$	$5.31869 - 3.65991I$	$6.10187 + 9.13654I$
$u = -0.396296 - 0.432190I$ $a = -0.49246 + 1.73630I$ $b = 0.740300 - 0.830855I$	$5.31869 + 3.65991I$	$6.10187 - 9.13654I$
$u = -0.542158 + 0.117917I$ $a = 1.37098 + 1.98919I$ $b = -1.142410 - 0.181756I$	$-1.021790 + 0.705294I$	$3.49954 - 4.37901I$
$u = -0.542158 - 0.117917I$ $a = 1.37098 - 1.98919I$ $b = -1.142410 + 0.181756I$	$-1.021790 - 0.705294I$	$3.49954 + 4.37901I$
$u = 0.03018 + 1.52198I$ $a = -2.04233 - 1.47340I$ $b = -1.045690 + 0.315482I$	$-5.53360 + 1.03148I$	0
$u = 0.03018 - 1.52198I$ $a = -2.04233 + 1.47340I$ $b = -1.045690 - 0.315482I$	$-5.53360 - 1.03148I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.04131 + 1.52824I$ $a = -0.061906 + 0.831333I$ $b = 0.962138 - 0.868668I$	$-1.82017 + 1.37348I$	0
$u = -0.04131 - 1.52824I$ $a = -0.061906 - 0.831333I$ $b = 0.962138 + 0.868668I$	$-1.82017 - 1.37348I$	0
$u = -0.11035 + 1.53163I$ $a = -0.149288 - 0.272362I$ $b = 0.368366 - 0.654466I$	$-1.82032 - 1.29038I$	0
$u = -0.11035 - 1.53163I$ $a = -0.149288 + 0.272362I$ $b = 0.368366 + 0.654466I$	$-1.82032 + 1.29038I$	0
$u = -0.08013 + 1.53516I$ $a = 0.071720 - 0.991753I$ $b = 0.806978 + 0.935865I$	$-1.34895 - 5.18025I$	0
$u = -0.08013 - 1.53516I$ $a = 0.071720 + 0.991753I$ $b = 0.806978 - 0.935865I$	$-1.34895 + 5.18025I$	0
$u = -0.262252 + 0.372162I$ $a = -0.93452 + 1.46801I$ $b = 0.950259 - 0.771844I$	$4.71038 + 2.27505I$	$2.87495 + 6.92818I$
$u = -0.262252 - 0.372162I$ $a = -0.93452 - 1.46801I$ $b = 0.950259 + 0.771844I$	$4.71038 - 2.27505I$	$2.87495 - 6.92818I$
$u = 0.280491 + 0.286926I$ $a = -0.03250 - 5.56793I$ $b = -0.763793 + 0.248992I$	$0.742521 + 0.263079I$	$1.89432 - 10.85247I$
$u = 0.280491 - 0.286926I$ $a = -0.03250 + 5.56793I$ $b = -0.763793 - 0.248992I$	$0.742521 - 0.263079I$	$1.89432 + 10.85247I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.10435 + 1.59638I$ $a = 0.597044 + 0.707359I$ $b = -0.520082 - 0.766678I$	$-8.09429 + 3.99340I$	0
$u = 0.10435 - 1.59638I$ $a = 0.597044 - 0.707359I$ $b = -0.520082 + 0.766678I$	$-8.09429 - 3.99340I$	0
$u = 0.13215 + 1.59776I$ $a = -0.287968 - 0.352186I$ $b = 0.216304 + 0.908312I$	$-7.29353 + 4.75365I$	0
$u = 0.13215 - 1.59776I$ $a = -0.287968 + 0.352186I$ $b = 0.216304 - 0.908312I$	$-7.29353 - 4.75365I$	0
$u = -0.09037 + 1.60143I$ $a = 1.44988 - 0.84143I$ $b = 1.091120 + 0.543357I$	$-3.91219 - 5.96968I$	0
$u = -0.09037 - 1.60143I$ $a = 1.44988 + 0.84143I$ $b = 1.091120 - 0.543357I$	$-3.91219 + 5.96968I$	0
$u = -0.17781 + 1.59504I$ $a = -0.539469 + 0.440389I$ $b = 0.314437 - 0.996490I$	$-4.83782 - 10.38830I$	0
$u = -0.17781 - 1.59504I$ $a = -0.539469 - 0.440389I$ $b = 0.314437 + 0.996490I$	$-4.83782 + 10.38830I$	0
$u = -0.02758 + 1.60517I$ $a = 0.427081 - 0.575629I$ $b = -0.297892 + 0.763089I$	$-9.20407 + 1.33304I$	0
$u = -0.02758 - 1.60517I$ $a = 0.427081 + 0.575629I$ $b = -0.297892 - 0.763089I$	$-9.20407 - 1.33304I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.15240 + 1.60919I$ $a = -0.50275 - 1.61138I$ $b = -1.078540 + 0.619975I$	$-9.79087 + 9.27121I$	0
$u = 0.15240 - 1.60919I$ $a = -0.50275 + 1.61138I$ $b = -1.078540 - 0.619975I$	$-9.79087 - 9.27121I$	0
$u = -0.13042 + 1.61198I$ $a = -0.665204 + 0.200185I$ $b = -1.377650 + 0.211486I$	$-10.71360 - 6.30775I$	0
$u = -0.13042 - 1.61198I$ $a = -0.665204 - 0.200185I$ $b = -1.377650 - 0.211486I$	$-10.71360 + 6.30775I$	0
$u = -0.09497 + 1.61734I$ $a = -0.71777 + 1.37284I$ $b = -1.140320 - 0.532443I$	$-11.73680 - 3.53945I$	0
$u = -0.09497 - 1.61734I$ $a = -0.71777 - 1.37284I$ $b = -1.140320 + 0.532443I$	$-11.73680 + 3.53945I$	0
$u = 0.378309$ $a = 1.75496$ $b = -0.125481$	1.01782	11.4040
$u = 0.06578 + 1.62137I$ $a = -0.858345 + 0.218227I$ $b = -1.316490 - 0.299557I$	$-12.27180 + 0.62227I$	0
$u = 0.06578 - 1.62137I$ $a = -0.858345 - 0.218227I$ $b = -1.316490 + 0.299557I$	$-12.27180 - 0.62227I$	0
$u = -0.19926 + 1.61688I$ $a = 0.81358 - 1.44253I$ $b = 1.218140 + 0.634975I$	$-7.6180 - 16.2777I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.19926 - 1.61688I$ $a = 0.81358 + 1.44253I$ $b = 1.218140 - 0.634975I$	$-7.6180 + 16.2777I$	0
$u = 0.15988 + 1.63933I$ $a = 0.89920 + 1.16202I$ $b = 1.204800 - 0.573189I$	$-10.2649 + 10.1230I$	0
$u = 0.15988 - 1.63933I$ $a = 0.89920 - 1.16202I$ $b = 1.204800 + 0.573189I$	$-10.2649 - 10.1230I$	0
$u = -0.00661 + 1.70566I$ $a = 0.785461 + 0.141099I$ $b = 1.083240 - 0.305675I$	$-13.33910 + 4.11275I$	0
$u = -0.00661 - 1.70566I$ $a = 0.785461 - 0.141099I$ $b = 1.083240 + 0.305675I$	$-13.33910 - 4.11275I$	0
$u = 0.09125 + 1.70355I$ $a = 0.686106 + 0.124440I$ $b = 0.983741 + 0.219632I$	$-12.68530 + 2.74860I$	0
$u = 0.09125 - 1.70355I$ $a = 0.686106 - 0.124440I$ $b = 0.983741 - 0.219632I$	$-12.68530 - 2.74860I$	0
$u = -0.227971$ $a = 3.59324$ $b = -0.877499$	-1.26625	-9.48720

II.

$$\boldsymbol{I_2^u = \langle b+1,\ -4u^4-3u^3-16u^2+3a-8u-10,\ u^5+u^4+4u^3+3u^2+3u+1\rangle}$$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{58}{9}u^4+\frac{13}{3}u^3+\frac{211}{9}u^2+\frac{128}{9}u+\frac{115}{9}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^5$
c_3, c_7	y^5
c_5, c_6, c_9 c_{10}, c_{11}	$y^5 + 7y^4 + 16y^3 + 13y^2 + 3y - 1$
c_8, c_{12}	$y^5 - y^4 + 4y^3 - 3y^2 + 3y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.233677+0.885557I$ $a=-0.162657+0.410020I$ $b=-1.00000$	$-3.46474-2.21397I$	$-2.99716+4.40290I$
$u=-0.233677-0.885557I$ $a=-0.162657-0.410020I$ $b=-1.00000$	$-3.46474+2.21397I$	$-2.99716-4.40290I$
$u=-0.416284$ $a=\ \ 3.11537$ $b=-1.00000$	-0.762751	10.8010
$u=-0.05818+1.69128I$ $a=-0.728361+0.139255I$ $b=-1.00000$	$-12.60320-3.33174I$	$-0.51443+5.79761I$
$u=-0.05818-1.69128I$ $a=-0.728361-0.139255I$ $b=-1.00000$	$-12.60320+3.33174I$	$-0.51443-5.79761I$

III. $\boldsymbol{I_3^u =}$
$\boldsymbol{\langle 4a^2u-6a^2-8au+17b+12a+2u-20,\ 4a^3+6a^2u-8a^2-2au-u-6,\ u^2+2\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}a\\-0.235294a^2u+0.470588au+\cdots-0.705882a+1.17647\end{pmatrix}$$
$$a_6 = \begin{pmatrix}1\\2\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-0.235294a^2u+0.470588au+\cdots+0.294118a+1.17647\\-0.235294a^2u+0.470588au+\cdots-0.705882a+1.17647\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-\frac{1}{2}u\\-0.352941a^2u-0.294118au+\cdots+0.941176a+1.76471\end{pmatrix}$$
$$a_4 = \begin{pmatrix}0.411765a^2u-0.823529au+\cdots+0.235294a-0.0588235\\-0.117647a^2u-0.764706au+\cdots+1.64706a-0.411765\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-u\\-u\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-1\\0\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-\frac{1}{2}u\\-0.352941a^2u-0.294118au+\cdots+0.941176a+1.76471\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0\\-u\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-\frac{1}{2}u\\-0.352941a^2u-0.294118au+\cdots+0.941176a+1.76471\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{16}{17}a^2u+\frac{24}{17}a^2+\frac{32}{17}au-\frac{48}{17}a-\frac{8}{17}u+\frac{80}{17}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$(u^3 - u^2 + 2u - 1)^2$
c_2	$(u^3 + u^2 - 1)^2$
c_3	$(u^3 + u^2 + 2u + 1)^2$
c_4	$(u^3 - u^2 + 1)^2$
c_5, c_6, c_9 c_{10}	$(u^2 + 2)^3$
c_8	$(u - 1)^6$
c_{11}, c_{12}	$(u + 1)^6$

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.414210I$ $a = 0.520153 - 0.983610I$ $b = 0.877439 + 0.744862I$	$-0.26574 - 2.82812I$	$3.50976 + 2.97945I$
$u = 1.414210I$ $a = -0.275030 + 0.506114I$ $b = 0.877439 - 0.744862I$	$-0.26574 + 2.82812I$	$3.50976 - 2.97945I$
$u = 1.414210I$ $a = 1.75488 - 1.64382I$ $b = -0.754878$	-4.40332	$-3.01951 + 0.I$
$u = -1.414210I$ $a = 0.520153 + 0.983610I$ $b = 0.877439 - 0.744862I$	$-0.26574 + 2.82812I$	$3.50976 - 2.97945I$
$u = -1.414210I$ $a = -0.275030 - 0.506114I$ $b = 0.877439 + 0.744862I$	$-0.26574 - 2.82812I$	$3.50976 + 2.97945I$
$u = -1.414210I$ $a = 1.75488 + 1.64382I$ $b = -0.754878$	-4.40332	$-3.01951 + 0.I$

IV. $I_1^v = \langle a,\ -v^2 + b + 3v + 1,\ v^3 - 2v^2 - 3v - 1\rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0 \\ v^2 - 3v - 1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} v^2 - 3v - 1 \\ v^2 - 3v - 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} v^2 - 3v - 1 \\ -v^2 + 2v + 3 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -2v^2 + 5v + 4 \\ -2v^2 + 5v + 3 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -v^2 + 3v + 1 \\ v^2 - 2v - 3 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} v^2 - 2v - 1 \\ -v^2 + 2v + 3 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 8v^2 - 26v - 14$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^3 - u^2 + 2u - 1$
c_2	$u^3 + u^2 - 1$
c_4	$u^3 - u^2 + 1$
c_5, c_6, c_9 c_{10}	u^3
c_7	$u^3 + u^2 + 2u + 1$
c_8, c_{11}	$(u+1)^3$
c_{12}	$(u-1)^3$

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$v = -0.539798 + 0.182582I$ $a = 0$ $b = 0.877439 - 0.744862I$	$4.66906 + 2.82812I$	$2.09911 - 6.32406I$
$v = -0.539798 - 0.182582I$ $a = 0$ $b = 0.877439 + 0.744862I$	$4.66906 - 2.82812I$	$2.09911 + 6.32406I$
$v = 3.07960$ $a = 0$ $b = -0.754878$	0.531480	-18.1980

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^5)(u^3-u^2+2u-1)^3(u^{88}+43u^{87}+\cdots+5850u+81)$
c_2	$((u-1)^5)(u^3+u^2-1)^3(u^{88}-9u^{87}+\cdots+12u+9)$
c_3	$u^5(u^3-u^2+2u-1)(u^3+u^2+2u+1)^2(u^{88}+2u^{87}+\cdots-192u-288)$
c_4	$((u+1)^5)(u^3-u^2+1)^3(u^{88}-9u^{87}+\cdots+12u+9)$
c_5, c_6	$u^3(u^2+2)^3(u^5+u^4+\cdots+3u+1)(u^{88}+2u^{87}+\cdots-40u-8)$
c_7	$u^5(u^3-u^2+2u-1)^2(u^3+u^2+2u+1)(u^{88}+2u^{87}+\cdots-192u-288)$
c_8	$((u-1)^6)(u+1)^3(u^5+u^4+\cdots+u+1)(u^{88}-5u^{87}+\cdots-525u+49)$
c_9, c_{10}	$u^3(u^2+2)^3(u^5-u^4+\cdots+3u-1)(u^{88}+2u^{87}+\cdots-40u-8)$
c_{11}	$(u+1)^9(u^5+u^4+4u^3+3u^2+3u+1)$ $\cdot(u^{88}-41u^{87}+\cdots-246519u+2401)$
c_{12}	$((u-1)^3)(u+1)^6(u^5-u^4+\cdots+u-1)(u^{88}-5u^{87}+\cdots-525u+49)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^5(y^3+3y^2+2y-1)^3$ $\cdot\,(y^{88}+13y^{87}+\cdots-26338446y+6561)$
c_2, c_4	$((y-1)^5)(y^3-y^2+2y-1)^3(y^{88}-43y^{87}+\cdots-5850y+81)$
c_3, c_7	$y^5(y^3+3y^2+2y-1)^3(y^{88}+42y^{87}+\cdots+59904y+82944)$
c_5, c_6, c_9 c_{10}	$y^3(y+2)^6(y^5+7y^4+16y^3+13y^2+3y-1)$ $\cdot\,(y^{88}+104y^{87}+\cdots-448y+64)$
c_8, c_{12}	$(y-1)^9(y^5-y^4+4y^3-3y^2+3y-1)$ $\cdot\,(y^{88}-41y^{87}+\cdots-246519y+2401)$
c_{11}	$(y-1)^9(y^5+7y^4+16y^3+13y^2+3y-1)$ $\cdot\,(y^{88}+23y^{87}+\cdots-42416044391y+5764801)$