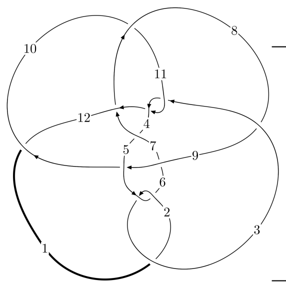
$12n_{0507}$ ($K12n_{0507}$)



A knot diagram[1]

Linearized knot diagam

$$\rightarrow \underset{3}{\downarrow} \rightarrow \underset{5}{\uparrow} \rightarrow \underset{11}{\uparrow} \rightarrow \underset{7}{\downarrow} \rightarrow \underset{2}{\uparrow} \rightarrow \underset{9}{\uparrow} \rightarrow \underset{12}{\uparrow} \rightarrow \underset{3}{\downarrow} \rightarrow \underset{5}{\uparrow} \rightarrow \underset{8}{\uparrow} \rightarrow \underset{4}{\uparrow} \rightarrow \underset{10}{\downarrow} \rightarrow$$

Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle &1.00284 \times 10^{74} u^{51} - 5.06570 \times 10^{74} u^{50} + \cdots + 2.45946 \times 10^{74} b - 5.12443 \times 10^{75},\\
&1.96421 \times 10^{74} u^{51} - 1.03477 \times 10^{75} u^{50} + \cdots + 5.81327 \times 10^{74} a - 1.34829 \times 10^{76},\\
&u^{52} - 6u^{51} + \cdots - 168u + 52\rangle\\
I_2^u = \langle &117054u^{17} - 360970u^{16} + \cdots + 246977b + 230480,\\
&207914u^{17} - 537859u^{16} + \cdots + 740931a - 581924,\ u^{18} - 2u^{17} + \cdots + 8u + 3\rangle\\
I_3^u = \langle &7a^4 + 16a^3 - 4a^2 + 11b - 40a + 8,\ a^5 + 2a^4 - a^3 - 6a^2 + 3a - 1,\ u + 1\rangle
\end{aligned}$$

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

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 77 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. $I_1^u = \langle 1.00\times10^{74}u^{51}-5.07\times10^{74}u^{50}+\cdots+2.46\times10^{74}b-5.12\times10^{75},\ 1.96\times10^{74}u^{51}-1.03\times10^{75}u^{50}+\cdots+5.81\times10^{74}a-1.35\times10^{76},\ u^{52}-6u^{51}+\cdots-168u+52\rangle$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.337885u^{51}+1.78002u^{50}+\cdots-47.5713u+23.1933 \\ -0.407746u^{51}+2.05968u^{50}+\cdots-49.5998u+20.8356 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.231416u^{51}-1.16982u^{50}+\cdots+26.0026u-10.5013 \\ -0.746564u^{51}+3.90831u^{50}+\cdots-98.2781u+45.0657 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.483569u^{51}+2.46254u^{50}+\cdots-59.1117u+30.0174 \\ -0.138554u^{51}+0.761537u^{50}+\cdots-19.4741u+10.6533 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.136698u^{51}-0.735393u^{50}+\cdots+21.0106u-6.84353 \\ 0.189414u^{51}-0.720852u^{50}+\cdots+9.10899u+1.55169 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.924358u^{51}+4.32805u^{50}+\cdots-89.5677u+26.2032 \\ 2.94505u^{51}-14.5616u^{50}+\cdots+329.171u-146.279 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.558793u^{51}+2.71369u^{50}+\cdots-59.1474u+26.7302 \\ 0.449141u^{51}-2.26958u^{50}+\cdots+53.1092u-22.9509 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.805085u^{51}-3.90019u^{50}+\cdots+88.1248u-32.8658 \\ -0.478973u^{51}+2.44395u^{50}+\cdots-58.0052u+27.5740 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.161202u^{51}-0.874376u^{50}+\cdots+20.1820u-9.77912 \\ -0.906833u^{51}+4.71408u^{50}+\cdots-117.353u+53.8080 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -1.43996u^{51}+6.82741u^{50}+\cdots-140.681u+61.5443$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{52} + 79u^{51} + \cdots + 126u + 1$
c_2, c_5	$u^{52} + u^{51} + \cdots - 16u + 1$
c_3, c_{11}	$u^{52} + 6u^{51} + \cdots + 168u + 52$
c_4	$u^{52} - 7u^{51} + \cdots - 729u + 449$
c_6	$u^{52} - u^{51} + \cdots - 32223752u + 2811556$
c_7	$u^{52} - 3u^{51} + \cdots - 97u + 49$
c_8	$u^{52} - u^{51} + \cdots - 248316u + 85849$
c_9	$u^{52} - 2u^{51} + \cdots + 172169u + 39973$
c_{10}	$u^{52} + 11u^{51} + \cdots + 560u + 49$
c_{12}	$u^{52} - 15u^{51} + \cdots - 112029u + 100799$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{52} - 209y^{51} + \cdots + 2042y + 1$
c_2, c_5	$y^{52} + 79y^{51} + \cdots + 126y + 1$
c_3, c_{11}	$y^{52} - 40y^{51} + \cdots - 11792y + 2704$
c_4	$y^{52} + 27y^{51} + \cdots + 5239107y + 201601$
c_6	$y^{52} + 93y^{51} + \cdots - 26572892374864y + 7904847141136$
c_7	$y^{52} - 15y^{51} + \cdots - 35575y + 2401$
c_8	$y^{52} - 15y^{51} + \cdots - 75223432574y + 7370050801$
c_9	$y^{52} + 80y^{51} + \cdots + 24550030999y + 1597840729$
c_{10}	$y^{52} + 7y^{51} + \cdots + 23618y + 2401$
c_{12}	$y^{52} - 45y^{51} + \cdots + 108799403279y + 10160438401$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.072076 + 1.073670I$ $a = 0.422821 + 0.107445I$ $b = -0.157151 + 0.717710I$	$-0.08598 - 3.46440I$	$0. + 3.76930I$
$u = -0.072076 - 1.073670I$ $a = 0.422821 - 0.107445I$ $b = -0.157151 - 0.717710I$	$-0.08598 + 3.46440I$	$0. - 3.76930I$
$u = 1.068700 + 0.176322I$ $a = 0.99400 - 1.18957I$ $b = -0.471542 - 1.119630I$	$-7.77272 + 4.78722I$	$5.62286 - 4.46937I$
$u = 1.068700 - 0.176322I$ $a = 0.99400 + 1.18957I$ $b = -0.471542 + 1.119630I$	$-7.77272 - 4.78722I$	$5.62286 + 4.46937I$
$u = -0.269878 + 0.867397I$ $a = -0.065611 - 0.173550I$ $b = 0.680688 - 0.688393I$	$0.88668 - 2.29079I$	$4.46889 + 2.66895I$
$u = -0.269878 - 0.867397I$ $a = -0.065611 + 0.173550I$ $b = 0.680688 + 0.688393I$	$0.88668 + 2.29079I$	$4.46889 - 2.66895I$
$u = 1.048260 + 0.371285I$ $a = 1.55261 + 0.09090I$ $b = -0.733122 - 0.676797I$	$-0.94506 + 3.54563I$	$1.62965 - 5.75409I$
$u = 1.048260 - 0.371285I$ $a = 1.55261 - 0.09090I$ $b = -0.733122 + 0.676797I$	$-0.94506 - 3.54563I$	$1.62965 + 5.75409I$
$u = 1.104730 + 0.182136I$ $a = 0.839035 - 0.685937I$ $b = -0.615619 + 1.264700I$	$3.12675 + 4.09577I$	$11.1869 - 8.8133I$
$u = 1.104730 - 0.182136I$ $a = 0.839035 + 0.685937I$ $b = -0.615619 - 1.264700I$	$3.12675 - 4.09577I$	$11.1869 + 8.8133I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.132840 + 0.177320I$ $a = -1.42486 + 0.17109I$ $b = 1.32434 - 1.18522I$	$2.29045 - 1.02276I$	$4.00000 + 0.I$
$u = -1.132840 - 0.177320I$ $a = -1.42486 - 0.17109I$ $b = 1.32434 + 1.18522I$	$2.29045 + 1.02276I$	$4.00000 + 0.I$
$u = -0.280215 + 0.778839I$ $a = -0.567039 + 0.203024I$ $b = -0.80247 - 1.29034I$	$-12.44140 + 2.96434I$	$-0.898916 - 0.509328I$
$u = -0.280215 - 0.778839I$ $a = -0.567039 - 0.203024I$ $b = -0.80247 + 1.29034I$	$-12.44140 - 2.96434I$	$-0.898916 + 0.509328I$
$u = 0.495944 + 0.659946I$ $a = -0.93403 + 1.16897I$ $b = -0.782553 + 0.575131I$	$-8.85362 + 2.74417I$	$1.62020 - 2.60444I$
$u = 0.495944 - 0.659946I$ $a = -0.93403 - 1.16897I$ $b = -0.782553 - 0.575131I$	$-8.85362 - 2.74417I$	$1.62020 + 2.60444I$
$u = 0.383796 + 0.722249I$ $a = 0.0394551 + 0.0110081I$ $b = -0.141872 + 0.858570I$	$-3.00681 + 0.54202I$	$-3.07092 - 1.78302I$
$u = 0.383796 - 0.722249I$ $a = 0.0394551 - 0.0110081I$ $b = -0.141872 - 0.858570I$	$-3.00681 - 0.54202I$	$-3.07092 + 1.78302I$
$u = -1.118520 + 0.405885I$ $a = -1.99263 - 0.26808I$ $b = 0.607693 - 0.824065I$	$2.47983 - 5.59777I$	$0. + 7.04199I$
$u = -1.118520 - 0.405885I$ $a = -1.99263 + 0.26808I$ $b = 0.607693 + 0.824065I$	$2.47983 + 5.59777I$	$0. - 7.04199I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.989819 + 0.690556I$ $a = 0.738252 - 1.108280I$ $b = -0.493528 - 1.071940I$	$-7.62938 + 2.46347I$	0
$u = 0.989819 - 0.690556I$ $a = 0.738252 + 1.108280I$ $b = -0.493528 + 1.071940I$	$-7.62938 - 2.46347I$	0
$u = 1.209340 + 0.050765I$ $a = -1.57890 - 0.62627I$ $b = 1.37163 + 1.27972I$	$5.14318 + 1.81368I$	$18.0333 + 0.I$
$u = 1.209340 - 0.050765I$ $a = -1.57890 + 0.62627I$ $b = 1.37163 - 1.27972I$	$5.14318 - 1.81368I$	$18.0333 + 0.I$
$u = -1.142540 + 0.409057I$ $a = 1.98363 - 0.31458I$ $b = -1.28875 + 1.59470I$	$-9.77699 - 7.32778I$	0
$u = -1.142540 - 0.409057I$ $a = 1.98363 + 0.31458I$ $b = -1.28875 - 1.59470I$	$-9.77699 + 7.32778I$	0
$u = 0.038697 + 1.225180I$ $a = 0.060632 - 0.219112I$ $b = -0.787773 - 1.095970I$	$-10.30200 + 8.83554I$	0
$u = 0.038697 - 1.225180I$ $a = 0.060632 + 0.219112I$ $b = -0.787773 + 1.095970I$	$-10.30200 - 8.83554I$	0
$u = -1.298120 + 0.219749I$ $a = 1.57172 + 0.70746I$ $b = -2.01283 - 0.85764I$	$-3.60868 - 5.39855I$	0
$u = -1.298120 - 0.219749I$ $a = 1.57172 - 0.70746I$ $b = -2.01283 + 0.85764I$	$-3.60868 + 5.39855I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.435814 + 0.497980I$ $a = -0.144770 + 1.329400I$ $b = 0.406646 + 0.837607I$	$0.35496 + 1.82856I$	$2.55368 - 2.81717I$
$u = -0.435814 - 0.497980I$ $a = -0.144770 - 1.329400I$ $b = 0.406646 - 0.837607I$	$0.35496 - 1.82856I$	$2.55368 + 2.81717I$
$u = -1.325900 + 0.415407I$ $a = 1.133880 + 0.064846I$ $b = -0.593152 + 0.351949I$	$5.15254 - 2.08012I$	0
$u = -1.325900 - 0.415407I$ $a = 1.133880 - 0.064846I$ $b = -0.593152 - 0.351949I$	$5.15254 + 2.08012I$	0
$u = 0.594624 + 0.117518I$ $a = -2.93422 - 1.82812I$ $b = -0.610865 + 0.355975I$	$-9.27919 - 3.18450I$	$2.07898 - 0.42481I$
$u = 0.594624 - 0.117518I$ $a = -2.93422 + 1.82812I$ $b = -0.610865 - 0.355975I$	$-9.27919 + 3.18450I$	$2.07898 + 0.42481I$
$u = 1.34204 + 0.52912I$ $a = 1.308500 - 0.013301I$ $b = -0.646221 - 0.811256I$	$4.19597 + 9.10494I$	0
$u = 1.34204 - 0.52912I$ $a = 1.308500 + 0.013301I$ $b = -0.646221 + 0.811256I$	$4.19597 - 9.10494I$	0
$u = 1.38606 + 0.43784I$ $a = -1.47210 - 0.00392I$ $b = 1.21303 + 1.00411I$	$5.90548 + 7.10957I$	0
$u = 1.38606 - 0.43784I$ $a = -1.47210 + 0.00392I$ $b = 1.21303 - 1.00411I$	$5.90548 - 7.10957I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.163645 + 0.500729I$ $a = 1.48155 - 0.11869I$ $b = -0.210860 - 0.434892I$	$0.61514 - 1.70536I$	$3.89799 + 3.77276I$
$u = 0.163645 - 0.500729I$ $a = 1.48155 + 0.11869I$ $b = -0.210860 + 0.434892I$	$0.61514 + 1.70536I$	$3.89799 - 3.77276I$
$u = -1.40514 + 0.56979I$ $a = 1.50502 - 0.02569I$ $b = -1.02860 + 1.37422I$	$-5.7801 - 15.0850I$	0
$u = -1.40514 - 0.56979I$ $a = 1.50502 + 0.02569I$ $b = -1.02860 - 1.37422I$	$-5.7801 + 15.0850I$	0
$u = -0.334164 + 0.327190I$ $a = 0.80947 - 1.27346I$ $b = 0.454762 - 0.337305I$	$0.700125 - 1.067100I$	$7.65429 + 6.43905I$
$u = -0.334164 - 0.327190I$ $a = 0.80947 + 1.27346I$ $b = 0.454762 + 0.337305I$	$0.700125 + 1.067100I$	$7.65429 - 6.43905I$
$u = -1.54216 + 0.53974I$ $a = -0.817027 + 0.067290I$ $b = 0.805620 - 0.732243I$	$4.04363 - 5.57601I$	0
$u = -1.54216 - 0.53974I$ $a = -0.817027 - 0.067290I$ $b = 0.805620 + 0.732243I$	$4.04363 + 5.57601I$	0
$u = 1.82542 + 0.12353I$ $a = 0.180716 - 0.464332I$ $b = -0.529222 + 0.477306I$	$-5.59317 + 0.61259I$	0
$u = 1.82542 - 0.12353I$ $a = 0.180716 + 0.464332I$ $b = -0.529222 - 0.477306I$	$-5.59317 - 0.61259I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.70629 + 0.88313I$ $a = 0.040681 - 0.244589I$ $b = -0.458284 + 0.504879I$	$-5.74740 - 1.53118I$	0
$u = 1.70629 - 0.88313I$ $a = 0.040681 + 0.244589I$ $b = -0.458284 - 0.504879I$	$-5.74740 + 1.53118I$	0

II. $\boldsymbol{I_2^u = \langle 1.17 \times 10^5 u^{17} - 3.61 \times 10^5 u^{16} + \cdots + 2.47 \times 10^5 b + 2.30 \times 10^5,\ 2.08 \times 10^5 u^{17} - 5.38 \times 10^5 u^{16} + \cdots + 7.41 \times 10^5 a - 5.82 \times 10^5,\ u^{18} - 2u^{17} + \cdots + 8u + 3 \rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.280612u^{17} + 0.725923u^{16} + \cdots - 3.10639u + 0.785396 \\ -0.473947u^{17} + 1.46155u^{16} + \cdots - 2.24939u - 0.933204 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.237918u^{17} - 0.825679u^{16} + \cdots - 0.381241u + 2.21270 \\ -0.894460u^{17} + 2.94986u^{16} + \cdots - 4.81013u - 2.47683 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.605086u^{17} + 1.13512u^{16} + \cdots - 3.56873u - 1.00410 \\ 0.513671u^{17} - 0.344639u^{16} + \cdots - 4.46092u - 1.91207 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.758081u^{17} - 1.12381u^{16} + \cdots - 3.30368u - 1.75050 \\ -0.800844u^{17} + 1.20535u^{16} + \cdots + 9.72215u + 2.40419 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.210071u^{17} + 1.20477u^{16} + \cdots - 7.21760u - 1.54346 \\ -0.623933u^{17} + 0.206902u^{16} + \cdots + 7.78891u + 2.25446 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.457344u^{17} - 0.485917u^{16} + \cdots + 1.87185u + 1.65301 \\ 0.188467u^{17} + 1.56389u^{16} + \cdots - 12.1388u - 4.59404 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.852110u^{17} - 1.08511u^{16} + \cdots - 3.14348u - 1.73854 \\ -0.894873u^{17} + 1.16664u^{16} + \cdots + 9.56196u + 2.39223 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.132791u^{17} - 0.992322u^{16} + \cdots + 0.0568042u + 2.82047 \\ -0.887350u^{17} + 3.17980u^{16} + \cdots - 5.41258u - 2.96828 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{39445}{246977}u^{17} - \frac{1167483}{246977}u^{16} + \cdots + \frac{8666107}{246977}u + \frac{3104388}{246977}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{18} - 21u^{17} + \cdots - 23u + 1$
c_2	$u^{18} - u^{17} + \cdots + u + 1$
c_3	$u^{18} + 2u^{17} + \cdots - 8u + 3$
c_4	$u^{18} - 5u^{17} + \cdots - 10u + 11$
c_5	$u^{18} + u^{17} + \cdots - u + 1$
c_6	$u^{18} + 4u^{17} + \cdots + 8u + 3$
c_7	$u^{18} - 3u^{17} + \cdots - 22u + 5$
c_8	$u^{18} - u^{17} + \cdots + u + 5$
c_9	$u^{18} + 5u^{16} + \cdots - 4u + 1$
c_{10}	$u^{18} - 9u^{17} + \cdots - u + 1$
c_{11}	$u^{18} - 2u^{17} + \cdots + 8u + 3$
c_{12}	$u^{18} - 7u^{17} + \cdots - 14u + 11$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{18} - 47y^{17} + \cdots - 89y + 1$
c_2, c_5	$y^{18} + 21y^{17} + \cdots + 23y + 1$
c_3, c_{11}	$y^{18} - 20y^{17} + \cdots - 58y + 9$
c_4	$y^{18} + 9y^{17} + \cdots + 956y + 121$
c_6	$y^{18} + 18y^{17} + \cdots + 68y + 9$
c_7	$y^{18} - 5y^{17} + \cdots - 104y + 25$
c_8	$y^{18} + 7y^{17} + \cdots + 29y + 25$
c_9	$y^{18} + 10y^{17} + \cdots - 8y + 1$
c_{10}	$y^{18} - 3y^{17} + \cdots + 3y + 1$
c_{12}	$y^{18} - 15y^{17} + \cdots + 1256y + 121$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.005450 + 0.295263I$ $a = 1.203530 + 0.437285I$ $b = -0.335827 - 0.487120I$	$2.17303 - 3.53081I$	$4.11221 + 3.61845I$
$u = -1.005450 - 0.295263I$ $a = 1.203530 - 0.437285I$ $b = -0.335827 + 0.487120I$	$2.17303 + 3.53081I$	$4.11221 - 3.61845I$
$u = -0.207208 + 0.849001I$ $a = -0.282886 + 0.138697I$ $b = 0.549633 - 0.563104I$	$1.17142 - 3.80180I$	$6.45298 + 6.93246I$
$u = -0.207208 - 0.849001I$ $a = -0.282886 - 0.138697I$ $b = 0.549633 + 0.563104I$	$1.17142 + 3.80180I$	$6.45298 - 6.93246I$
$u = 1.161860 + 0.107310I$ $a = -2.23789 - 0.78537I$ $b = 2.15942 + 1.58054I$	$3.02525 + 1.29728I$	$13.4543 - 5.0288I$
$u = 1.161860 - 0.107310I$ $a = -2.23789 + 0.78537I$ $b = 2.15942 - 1.58054I$	$3.02525 - 1.29728I$	$13.4543 + 5.0288I$
$u = 0.751188 + 0.315078I$ $a = 1.51622 - 2.08382I$ $b = -0.655881 - 0.938092I$	$-9.23443 + 4.41108I$	$1.12625 - 5.00994I$
$u = 0.751188 - 0.315078I$ $a = 1.51622 + 2.08382I$ $b = -0.655881 + 0.938092I$	$-9.23443 - 4.41108I$	$1.12625 + 5.00994I$
$u = -1.218070 + 0.029447I$ $a = -1.184950 + 0.350003I$ $b = 0.820578 - 1.114160I$	$4.34167 - 2.03661I$	$7.20835 + 3.90028I$
$u = -1.218070 - 0.029447I$ $a = -1.184950 - 0.350003I$ $b = 0.820578 + 1.114160I$	$4.34167 + 2.03661I$	$7.20835 - 3.90028I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.38134 + 0.46176I$ $a = -1.399010 + 0.094856I$ $b = 1.182680 + 0.724988I$	$6.00324 + 8.77263I$	$8.55851 - 6.89757I$
$u = 1.38134 - 0.46176I$ $a = -1.399010 - 0.094856I$ $b = 1.182680 - 0.724988I$	$6.00324 - 8.77263I$	$8.55851 + 6.89757I$
$u = -1.40929 + 0.49254I$ $a = -1.140630 - 0.031844I$ $b = 0.703194 - 0.839704I$	$5.15223 - 3.52976I$	$7.05597 + 3.81806I$
$u = -1.40929 - 0.49254I$ $a = -1.140630 + 0.031844I$ $b = 0.703194 + 0.839704I$	$5.15223 + 3.52976I$	$7.05597 - 3.81806I$
$u = -0.282235 + 0.273085I$ $a = 2.34179 - 1.33257I$ $b = 0.414830 - 0.603446I$	$-0.0620604 - 0.0079783I$	$-0.270726 + 0.542760I$
$u = -0.282235 - 0.273085I$ $a = 2.34179 + 1.33257I$ $b = 0.414830 + 0.603446I$	$-0.0620604 + 0.0079783I$	$-0.270726 - 0.542760I$
$u = 1.82787 + 0.56276I$ $a = -0.149506 - 0.193772I$ $b = -0.338633 + 0.304616I$	$-5.99061 - 1.24449I$	$-6.19786 - 0.78651I$
$u = 1.82787 - 0.56276I$ $a = -0.149506 + 0.193772I$ $b = -0.338633 - 0.304616I$	$-5.99061 + 1.24449I$	$-6.19786 + 0.78651I$

III.

$$\boldsymbol{I^u_3 = \langle 7a^4+16a^3-4a^2+11b-40a+8,\ a^5+2a^4-a^3-6a^2+3a-1,\ u+1\rangle}$$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} a \\ -0.636364a^4-1.45455a^3+\cdots+3.63636a-0.727273 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.636364a^4+1.45455a^3+\cdots-3.63636a+0.727273 \\ -1.27273a^4-2.90909a^3+\cdots+8.27273a-1.45455 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.181818a^4-0.272727a^3+\cdots+1.18182a-1.63636 \\ 0.545455a^4+0.818182a^3+\cdots-3.54545a+2.90909 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.636364a^4-1.45455a^3+\cdots+4.63636a-0.727273 \\ 1.27273a^4+2.90909a^3+\cdots-8.27273a+1.45455 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.636364a^4-1.45455a^3+\cdots+3.63636a-0.727273 \\ 1.27273a^4+2.90909a^3+\cdots-8.27273a+1.45455 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.181818a^4-0.272727a^3+\cdots+1.18182a+0.363636 \\ -0.181818a^4-0.272727a^3+\cdots+1.18182a-1.63636 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} a \\ 0.636364a^4+1.45455a^3+\cdots-4.63636a+0.727273 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.636364a^4+1.45455a^3+\cdots-3.63636a+0.727273 \\ -1.27273a^4-2.90909a^3+\cdots+8.27273a-1.45455 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_9 c_{10}	$y^5 + 2y^4 + 3y^3 + 6y^2 + 5y - 1$
c_2, c_5, c_{12}	$y^5 + 2y^4 + 3y^3 + 2y^2 + y - 1$
c_3, c_{11}	$(y-1)^5$
c_6	y^5
c_7, c_8	$y^5 + 2y^4 - y^3 - 6y^2 + 9y - 4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_3	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = \quad 1.30084$ $b = -0.405620$	1.64493	6.00000
$u = -1.00000$ $a = \quad 0.234877 + 0.318507I$ $b = \quad 0.208008 + 1.191750I$	1.64493	6.00000
$u = -1.00000$ $a = \quad 0.234877 - 0.318507I$ $b = \quad 0.208008 - 1.191750I$	1.64493	6.00000
$u = -1.00000$ $a = -1.88529 + 1.16368I$ $b = \quad 0.994802 - 0.833601I$	1.64493	6.00000
$u = -1.00000$ $a = -1.88529 - 1.16368I$ $b = \quad 0.994802 + 0.833601I$	1.64493	6.00000

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

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0 \\ b \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -b \\ b \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -b + 2 \\ b - 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 2b \\ -b \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -b \\ b \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ b - 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} b \\ -b \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -b \\ b \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5 c_{10}	$u^2 - u + 1$
c_2, c_7, c_8 c_9, c_{12}	$u^2 + u + 1$
c_3, c_6, 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_9, c_{10}, c_{12}	$y^2 + y + 1$
c_3, c_6, c_{11}	y^2

(vi) Complex Volumes and Cusp Shapes

	Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v =$	1.00000		
$a =$	0	0	0
$b =$	$0.500000 + 0.866025I$		
$v =$	1.00000		
$a =$	0	0	0
$b =$	$0.500000 - 0.866025I$		

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^2-u+1)(u^5+2u^4+\cdots+u-1)(u^{18}-21u^{17}+\cdots-23u+1)$ $\cdot(u^{52}+79u^{51}+\cdots+126u+1)$
c_2	$(u^2+u+1)(u^5+u^3+u-1)(u^{18}-u^{17}+\cdots+u+1)$ $\cdot(u^{52}+u^{51}+\cdots-16u+1)$
c_3	$u^2(u-1)^5(u^{18}+2u^{17}+\cdots-8u+3)(u^{52}+6u^{51}+\cdots+168u+52)$
c_4	$(u^2-u+1)(u^5+2u^4+\cdots+u-1)(u^{18}-5u^{17}+\cdots-10u+11)$ $\cdot(u^{52}-7u^{51}+\cdots-729u+449)$
c_5	$(u^2-u+1)(u^5+u^3+u-1)(u^{18}+u^{17}+\cdots-u+1)$ $\cdot(u^{52}+u^{51}+\cdots-16u+1)$
c_6	$u^7(u^{18}+4u^{17}+\cdots+8u+3)(u^{52}-u^{51}+\cdots-3.22238\times10^7u+2811556)$
c_7	$(u^2+u+1)(u^5+u^3+2u^2-u-2)(u^{18}-3u^{17}+\cdots-22u+5)$ $\cdot(u^{52}-3u^{51}+\cdots-97u+49)$
c_8	$(u^2+u+1)(u^5+u^3+2u^2-u-2)(u^{18}-u^{17}+\cdots+u+5)$ $\cdot(u^{52}-u^{51}+\cdots-248316u+85849)$
c_9	$(u^2+u+1)(u^5+2u^4+\cdots+u-1)(u^{18}+5u^{16}+\cdots-4u+1)$ $\cdot(u^{52}-2u^{51}+\cdots+172169u+39973)$
c_{10}	$(u^2-u+1)(u^5-2u^4+\cdots+u+1)(u^{18}-9u^{17}+\cdots-u+1)$ $\cdot(u^{52}+11u^{51}+\cdots+560u+49)$
c_{11}	$u^2(u-1)^5(u^{18}-2u^{17}+\cdots+8u+3)(u^{52}+6u^{51}+\cdots+168u+52)$
c_{12}	$(u^2+u+1)(u^5+u^3+u-1)(u^{18}-7u^{17}+\cdots-14u+11)$ $\cdot(u^{52}-15u^{51}+\cdots-112029u+100799)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^2+y+1)(y^5+2y^4+\cdots+5y-1)(y^{18}-47y^{17}+\cdots-89y+1)$ $\cdot(y^{52}-209y^{51}+\cdots+2042y+1)$
c_2, c_5	$(y^2+y+1)(y^5+2y^4+\cdots+y-1)(y^{18}+21y^{17}+\cdots+23y+1)$ $\cdot(y^{52}+79y^{51}+\cdots+126y+1)$
c_3, c_{11}	$y^2(y-1)^5(y^{18}-20y^{17}+\cdots-58y+9)$ $\cdot(y^{52}-40y^{51}+\cdots-11792y+2704)$
c_4	$(y^2+y+1)(y^5+2y^4+3y^3+6y^2+5y-1)$ $\cdot(y^{18}+9y^{17}+\cdots+956y+121)$ $\cdot(y^{52}+27y^{51}+\cdots+5239107y+201601)$
c_6	$y^7(y^{18}+18y^{17}+\cdots+68y+9)$ $\cdot(y^{52}+93y^{51}+\cdots-26572892374864y+7904847141136)$
c_7	$(y^2+y+1)(y^5+2y^4+\cdots+9y-4)(y^{18}-5y^{17}+\cdots-104y+25)$ $\cdot(y^{52}-15y^{51}+\cdots-35575y+2401)$
c_8	$(y^2+y+1)(y^5+2y^4+\cdots+9y-4)(y^{18}+7y^{17}+\cdots+29y+25)$ $\cdot(y^{52}-15y^{51}+\cdots-75223432574y+7370050801)$
c_9	$(y^2+y+1)(y^5+2y^4+\cdots+5y-1)(y^{18}+10y^{17}+\cdots-8y+1)$ $\cdot(y^{52}+80y^{51}+\cdots+24550030999y+1597840729)$
c_{10}	$(y^2+y+1)(y^5+2y^4+\cdots+5y-1)(y^{18}-3y^{17}+\cdots+3y+1)$ $\cdot(y^{52}+7y^{51}+\cdots+23618y+2401)$
c_{12}	$(y^2+y+1)(y^5+2y^4+3y^3+2y^2+y-1)$ $\cdot(y^{18}-15y^{17}+\cdots+1256y+121)$ $\cdot(y^{52}-45y^{51}+\cdots+108799403279y+10160438401)$