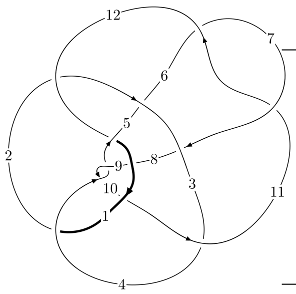
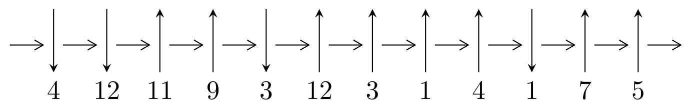
$12n_{0798}$ $(K12n_{0798})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 1283u^{12} - 662u^{11} + \cdots + 5739b + 1160,\ -630u^{12} + 3164u^{11} + \cdots + 1913a - 753, \\
& u^{13} - 3u^{12} + 8u^{11} - 20u^{10} + 36u^9 - 61u^8 + 84u^7 - 97u^6 + 97u^5 - 68u^4 + 41u^3 - 13u^2 + 3u + 1\rangle \\
I_2^u = \langle & -1.18123 \times 10^{153}u^{55} - 4.51937 \times 10^{153}u^{54} + \cdots + 2.08930 \times 10^{155}b - 7.05789 \times 10^{155}, \\
& 8.87232 \times 10^{153}u^{55} + 3.38341 \times 10^{154}u^{54} + \cdots + 6.26789 \times 10^{155}a + 3.97690 \times 10^{156}, \\
& u^{56} + 4u^{55} + \cdots + 1346u + 111\rangle \\
I_3^u = \langle & -135214u^{15} + 515373u^{14} + \cdots + 267063b + 30946, \\
& -570167u^{15} + 1972254u^{14} + \cdots + 1335315a - 4248919,\ u^{16} - 4u^{15} + \cdots - u + 1\rangle \\
I_4^u = \langle & -u^3 + u^2 + b - u,\ u^2 + a - u + 2,\ u^4 - u^3 + 2u^2 + 1\rangle \\
I_5^u = \langle & -u^2 + b + u,\ a + u,\ u^4 - u^3 + u^2 - u + 1\rangle
\end{aligned}$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 93 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. $\boldsymbol{I^u_1 = \langle 1283u^{12} - 662u^{11} + \cdots + 5739b + 1160,\ -630u^{12} + 3164u^{11} + \cdots + 1913a - 753,\ u^{13} - 3u^{12} + \cdots + 3u + 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_{10} = \begin{pmatrix} 0.329326u^{12} - 1.65395u^{11} + \cdots - 12.3325u + 0.393623 \\ -0.223558u^{12} + 0.115351u^{11} + \cdots - 2.77749u - 0.202126 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.552884u^{12} - 1.76930u^{11} + \cdots - 9.55497u + 0.595748 \\ -0.223558u^{12} + 0.115351u^{11} + \cdots - 2.77749u - 0.202126 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.744555u^{12} + 1.43562u^{11} + \cdots - 4.66423u + 0.635477 \\ -0.238021u^{12} + 0.958355u^{11} + \cdots + 3.13870u + 0.798048 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.329326u^{12} - 1.65395u^{11} + \cdots - 12.3325u + 0.393623 \\ -0.499042u^{12} + 1.07667u^{11} + \cdots - 1.10890u + 0.463844 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1.02248u^{12} - 2.20178u^{11} + \cdots + 4.08207u - 1.12075 \\ -0.110646u^{12} + 0.148284u^{11} + \cdots - 1.06290u - 0.552884 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.905558u^{12} - 2.55532u^{11} + \cdots - 1.63164u - 1.70971 \\ -0.659697u^{12} + 2.22426u^{11} + \cdots + 3.05646u + 0.706743 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.828367u^{12} - 2.73062u^{11} + \cdots - 11.2236u - 0.0702213 \\ -0.499042u^{12} + 1.07667u^{11} + \cdots - 1.10890u + 0.463844 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1.44642u^{12} - 3.28646u^{11} + \cdots - 1.18400u + 1.06691 \\ 0.158564u^{12} - 1.31486u^{11} + \cdots - 7.38230u - 1.25492 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.364523u^{12} + 1.83813u^{11} + \cdots + 7.51403u + 3.57066 \\ 0.798048u^{12} - 2.15612u^{11} + \cdots - 2.86914u - 0.744555 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{27061}{5739}u^{12} - \frac{84808}{5739}u^{11} + \cdots - \frac{197266}{5739}u + \frac{6865}{5739}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$u^{13} + 3u^{12} + \cdots + 3u - 1$
c_3, c_{12}	$u^{13} + u^{12} + \cdots - 3u - 1$
c_4, c_6, c_9 c_{11}	$u^{13} - 2u^{12} + \cdots + 7u^3 - 1$
c_5, c_{10}	$u^{13} - u^{12} + \cdots + 3u - 3$
c_7, c_8	$u^{13} + 3u^{12} + \cdots - 8u - 3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2	$y^{13} + 7y^{12} + \cdots + 35y - 1$
c_3, c_{12}	$y^{13} + 7y^{12} + \cdots + 3y - 1$
c_4, c_6, c_9 c_{11}	$y^{13} + 4y^{11} + \cdots - 2y^2 - 1$
c_5, c_{10}	$y^{13} + 15y^{12} + \cdots + 39y - 9$
c_7, c_8	$y^{13} - 3y^{12} + \cdots + 34y - 9$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.125889 + 0.791075I$ $a = -0.42819 + 1.60424I$ $b = 0.06421 + 1.99251I$	$3.78832 - 0.68098I$	$3.18600 + 10.56387I$
$u = 0.125889 - 0.791075I$ $a = -0.42819 - 1.60424I$ $b = 0.06421 - 1.99251I$	$3.78832 + 0.68098I$	$3.18600 - 10.56387I$
$u = 0.435895 + 1.153550I$ $a = -0.166988 - 0.397762I$ $b = -1.101790 - 0.664354I$	$-1.60930 - 2.98509I$	$6.45992 + 2.62910I$
$u = 0.435895 - 1.153550I$ $a = -0.166988 + 0.397762I$ $b = -1.101790 + 0.664354I$	$-1.60930 + 2.98509I$	$6.45992 - 2.62910I$
$u = 0.405751 + 0.538490I$ $a = -1.29934 - 1.45999I$ $b = 0.613689 - 0.351552I$	$-8.20006 - 2.65719I$	$-7.53293 + 6.11651I$
$u = 0.405751 - 0.538490I$ $a = -1.29934 + 1.45999I$ $b = 0.613689 + 0.351552I$	$-8.20006 + 2.65719I$	$-7.53293 - 6.11651I$
$u = -0.21582 + 1.42915I$ $a = 0.743610 + 0.701361I$ $b = 0.17608 + 1.54701I$	$9.07015 + 0.94105I$	$7.27747 - 1.09961I$
$u = -0.21582 - 1.42915I$ $a = 0.743610 - 0.701361I$ $b = 0.17608 - 1.54701I$	$9.07015 - 0.94105I$	$7.27747 + 1.09961I$
$u = 1.52678 + 0.05294I$ $a = 0.101352 + 0.424061I$ $b = -0.310928 + 0.347924I$	$-3.37050 + 0.66803I$	$1.81891 - 10.95758I$
$u = 1.52678 - 0.05294I$ $a = 0.101352 - 0.424061I$ $b = -0.310928 - 0.347924I$	$-3.37050 - 0.66803I$	$1.81891 + 10.95758I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.70010+1.56807I$ $a=\ 0.383909-0.789778I$ $b=\ 0.82111-1.72051I$	$7.2980+16.4758I$	$4.42093-8.40539I$
$u=-0.70010-1.56807I$ $a=\ 0.383909+0.789778I$ $b=\ 0.82111+1.72051I$	$7.2980-16.4758I$	$4.42093+8.40539I$
$u=-0.156796$ $a=\ 3.33128$ $b=\ 0.475252$	0.851273	11.7390

II. $\boldsymbol{I_2^u = \langle -1.18 \times 10^{153} u^{55} - 4.52 \times 10^{153} u^{54} + \cdots + 2.09 \times 10^{155} b - 7.06 \times 10^{155},\ 8.87 \times 10^{153} u^{55} + 3.38 \times 10^{154} u^{54} + \cdots + 6.27 \times 10^{155} a + 3.98 \times 10^{156},\ u^{56} + 4u^{55} + \cdots + 1346u + 111 \rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.0141552u^{55} - 0.0539800u^{54} + \cdots - 28.3025u - 6.34487 \\ 0.00565370u^{55} + 0.0216310u^{54} + \cdots + 16.5561u + 3.37812 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.0198089u^{55} - 0.0756110u^{54} + \cdots - 44.8585u - 9.72299 \\ 0.00565370u^{55} + 0.0216310u^{54} + \cdots + 16.5561u + 3.37812 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.0144678u^{55} + 0.0586721u^{54} + \cdots + 73.1975u + 12.4499 \\ -0.00267933u^{55} - 0.00908580u^{54} + \cdots - 12.7090u - 3.57215 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.0141552u^{55} - 0.0539800u^{54} + \cdots - 28.3025u - 6.34487 \\ 0.00718179u^{55} + 0.0273575u^{54} + \cdots + 14.5728u + 3.08499 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.00877254u^{55} - 0.0387439u^{54} + \cdots - 48.2032u - 6.38465 \\ 0.00314979u^{55} + 0.0134163u^{54} + \cdots + 18.1770u + 2.89867 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.0116448u^{55} - 0.0480523u^{54} + \cdots - 48.8452u + 1.49968 \\ 0.00331140u^{55} + 0.0134797u^{54} + \cdots + 33.1904u + 2.23101 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.0213370u^{55} - 0.0813374u^{54} + \cdots - 42.8753u - 9.42987 \\ 0.00718179u^{55} + 0.0273575u^{54} + \cdots + 14.5728u + 3.08499 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.0106076u^{55} + 0.0439229u^{54} + \cdots + 51.7711u + 2.93855 \\ -0.00286600u^{55} - 0.0111012u^{54} + \cdots - 25.2269u - 2.36948 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.00420227u^{55} - 0.0147886u^{54} + \cdots - 32.7418u - 2.34305 \\ 0.00309502u^{55} + 0.0110761u^{54} + \cdots + 17.1401u + 2.03269 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.000431876u^{55} - 0.00131056u^{54} + \cdots - 42.1688u + 5.52954$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$u^{56} - 4u^{55} + \cdots - 1346u + 111$
c_3, c_{12}	$u^{56} + 2u^{54} + \cdots + 907u + 193$
c_4, c_6, c_9 c_{11}	$u^{56} + u^{55} + \cdots + 13u + 3$
c_5, c_{10}	$u^{56} + 2u^{55} + \cdots + 82u + 37$
c_7, c_8	$u^{56} - u^{55} + \cdots + 29361u + 1951$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2	$y^{56} + 50y^{55} + \cdots - 249724y + 12321$
c_3, c_{12}	$y^{56} + 4y^{55} + \cdots - 242491y + 37249$
c_4, c_6, c_9 c_{11}	$y^{56} + 15y^{55} + \cdots + 275y + 9$
c_5, c_{10}	$y^{56} + 52y^{55} + \cdots - 39284y + 1369$
c_7, c_8	$y^{56} - 31y^{55} + \cdots - 114413905y + 3806401$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.973175 + 0.358698I$ $a = 0.223686 + 0.715699I$ $b = -0.141495 - 0.212809I$	$-2.35105 - 1.37665I$	$0. + 4.49216I$
$u = 0.973175 - 0.358698I$ $a = 0.223686 - 0.715699I$ $b = -0.141495 + 0.212809I$	$-2.35105 + 1.37665I$	$0. - 4.49216I$
$u = -0.847096 + 0.638226I$ $a = -0.404462 + 0.469747I$ $b = 0.15766 + 1.46714I$	$1.93596 + 5.90600I$	$0. - 3.51945I$
$u = -0.847096 - 0.638226I$ $a = -0.404462 - 0.469747I$ $b = 0.15766 - 1.46714I$	$1.93596 - 5.90600I$	$0. + 3.51945I$
$u = -0.561985 + 0.926870I$ $a = 0.331742 - 1.143620I$ $b = 0.25987 - 1.69030I$	$-3.01211 + 5.08083I$	$8.72700 + 0.I$
$u = -0.561985 - 0.926870I$ $a = 0.331742 + 1.143620I$ $b = 0.25987 + 1.69030I$	$-3.01211 - 5.08083I$	$8.72700 + 0.I$
$u = -0.401455 + 0.819963I$ $a = 0.524050 - 0.252083I$ $b = -0.232565 - 1.287120I$	$3.14992 - 0.89303I$	$3.36391 + 1.60851I$
$u = -0.401455 - 0.819963I$ $a = 0.524050 + 0.252083I$ $b = -0.232565 + 1.287120I$	$3.14992 + 0.89303I$	$3.36391 - 1.60851I$
$u = 0.428842 + 0.782748I$ $a = 1.39747 + 0.43456I$ $b = -0.093467 - 0.473397I$	$-2.65912 - 0.69416I$	$5.49287 + 3.59719I$
$u = 0.428842 - 0.782748I$ $a = 1.39747 - 0.43456I$ $b = -0.093467 + 0.473397I$	$-2.65912 + 0.69416I$	$5.49287 - 3.59719I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.293234+1.071580I$ $a=-0.398636+1.032790I$ $b=\ \ 0.105708+1.267210I$	$3.14992+0.89303I$	$4.00000+0.I$
$u=-0.293234-1.071580I$ $a=-0.398636-1.032790I$ $b=\ \ 0.105708-1.267210I$	$3.14992-0.89303I$	$4.00000+0.I$
$u=-0.087731+1.118910I$ $a=-0.686073+0.991907I$ $b=\ \ 0.06046+1.60533I$	$3.57949+0.97368I$	$7.35348-5.23167I$
$u=-0.087731-1.118910I$ $a=-0.686073-0.991907I$ $b=\ \ 0.06046-1.60533I$	$3.57949-0.97368I$	$7.35348+5.23167I$
$u=\ \ 0.683985+0.326867I$ $a=\ \ 0.76677+1.25863I$ $b=-0.876249-0.500129I$	$-4.38515-0.94897I$	$-10.21959+1.75938I$
$u=\ \ 0.683985-0.326867I$ $a=\ \ 0.76677-1.25863I$ $b=-0.876249+0.500129I$	$-4.38515+0.94897I$	$-10.21959-1.75938I$
$u=-0.463157+1.179820I$ $a=-0.692781-0.317187I$ $b=-0.447756-0.568276I$	$-2.65912-0.69416I$	0
$u=-0.463157-1.179820I$ $a=-0.692781+0.317187I$ $b=-0.447756+0.568276I$	$-2.65912+0.69416I$	0
$u=-1.250640+0.306528I$ $a=\ \ 0.350610+0.608692I$ $b=-0.076204+0.243308I$	$3.22350+2.16516I$	0
$u=-1.250640-0.306528I$ $a=\ \ 0.350610-0.608692I$ $b=-0.076204-0.243308I$	$3.22350-2.16516I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.150720 + 1.306260I$ $a = 0.728240 + 0.063856I$ $b = 1.105270 + 0.474638I$	$-0.60047 - 5.02443I$	0
$u = -0.150720 - 1.306260I$ $a = 0.728240 - 0.063856I$ $b = 1.105270 - 0.474638I$	$-0.60047 + 5.02443I$	0
$u = 0.118150 + 1.326950I$ $a = 0.824150 + 0.704249I$ $b = -0.25793 + 1.46755I$	7.25514	0
$u = 0.118150 - 1.326950I$ $a = 0.824150 - 0.704249I$ $b = -0.25793 - 1.46755I$	7.25514	0
$u = 0.855631 + 1.049130I$ $a = -0.036172 - 0.766616I$ $b = -0.62639 - 1.44617I$	$-0.60047 - 5.02443I$	0
$u = 0.855631 - 1.049130I$ $a = -0.036172 + 0.766616I$ $b = -0.62639 + 1.44617I$	$-0.60047 + 5.02443I$	0
$u = 0.110352 + 0.636373I$ $a = -2.55589 - 0.04098I$ $b = -0.423182 + 0.031837I$	$-3.01211 + 5.08083I$	$8.72700 - 0.16788I$
$u = 0.110352 - 0.636373I$ $a = -2.55589 + 0.04098I$ $b = -0.423182 - 0.031837I$	$-3.01211 - 5.08083I$	$8.72700 + 0.16788I$
$u = -0.002625 + 1.377270I$ $a = 0.508986 - 0.612116I$ $b = -0.09477 - 1.51750I$	$3.22350 - 2.16516I$	0
$u = -0.002625 - 1.377270I$ $a = 0.508986 + 0.612116I$ $b = -0.09477 + 1.51750I$	$3.22350 + 2.16516I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.150210 + 0.569344I$ $a = -0.824610 - 0.889775I$ $b = -1.046740 + 0.070502I$	$-2.35105 - 1.37665I$	$-0.14056 + 4.49216I$
$u = 0.150210 - 0.569344I$ $a = -0.824610 + 0.889775I$ $b = -1.046740 - 0.070502I$	$-2.35105 + 1.37665I$	$-0.14056 - 4.49216I$
$u = -0.23885 + 1.42021I$ $a = -0.724589 - 0.727418I$ $b = 0.07102 - 1.58823I$	$8.32665 + 8.69653I$	0
$u = -0.23885 - 1.42021I$ $a = -0.724589 + 0.727418I$ $b = 0.07102 + 1.58823I$	$8.32665 - 8.69653I$	0
$u = 0.46400 + 1.40989I$ $a = 0.467280 + 0.871972I$ $b = 0.93856 + 1.51643I$	$2.96962 - 6.50699I$	0
$u = 0.46400 - 1.40989I$ $a = 0.467280 - 0.871972I$ $b = 0.93856 - 1.51643I$	$2.96962 + 6.50699I$	0
$u = 0.12171 + 1.48953I$ $a = -0.732149 - 0.618254I$ $b = 0.02724 - 1.64380I$	$8.61168 - 6.87817I$	0
$u = 0.12171 - 1.48953I$ $a = -0.732149 + 0.618254I$ $b = 0.02724 + 1.64380I$	$8.61168 + 6.87817I$	0
$u = 0.46868 + 1.43810I$ $a = 0.529642 + 0.769097I$ $b = 0.656517 + 1.172790I$	$1.93596 - 5.90600I$	0
$u = 0.46868 - 1.43810I$ $a = 0.529642 - 0.769097I$ $b = 0.656517 - 1.172790I$	$1.93596 + 5.90600I$	0

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.61255 + 1.47138I$ $a = -0.411818 + 0.844957I$ $b = -0.66961 + 1.79906I$	$8.32665 + 8.69653I$	0
$u = -0.61255 - 1.47138I$ $a = -0.411818 - 0.844957I$ $b = -0.66961 - 1.79906I$	$8.32665 - 8.69653I$	0
$u = 0.57163 + 1.63667I$ $a = -0.425730 - 0.627977I$ $b = -0.67894 - 1.58354I$	$2.19558 - 8.29138I$	0
$u = 0.57163 - 1.63667I$ $a = -0.425730 + 0.627977I$ $b = -0.67894 + 1.58354I$	$2.19558 + 8.29138I$	0
$u = -0.021719 + 0.263335I$ $a = 0.31401 + 2.13706I$ $b = -1.29778 - 0.84140I$	$3.57949 - 0.97368I$	$7.35348 + 5.23167I$
$u = -0.021719 - 0.263335I$ $a = 0.31401 - 2.13706I$ $b = -1.29778 + 0.84140I$	$3.57949 + 0.97368I$	$7.35348 - 5.23167I$
$u = -0.37410 + 1.70455I$ $a = 0.285913 - 0.668539I$ $b = 0.58599 - 1.56113I$	9.99346	0
$u = -0.37410 - 1.70455I$ $a = 0.285913 + 0.668539I$ $b = 0.58599 + 1.56113I$	9.99346	0
$u = -1.78299 + 0.07540I$ $a = -0.258059 - 0.376840I$ $b = 0.170261 + 0.007329I$	$2.19558 + 8.29138I$	0
$u = -1.78299 - 0.07540I$ $a = -0.258059 + 0.376840I$ $b = 0.170261 - 0.007329I$	$2.19558 - 8.29138I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.47184+1.75013I$ $a=-0.252592+0.650075I$ $b=-0.71080+1.36535I$	$8.61168+6.87817I$	0
$u=-0.47184-1.75013I$ $a=-0.252592-0.650075I$ $b=-0.71080-1.36535I$	$8.61168-6.87817I$	0
$u=0.76269+1.66617I$ $a=0.168983+0.041887I$ $b=0.580641+0.363782I$	$-4.38515-0.94897I$	0
$u=0.76269-1.66617I$ $a=0.168983-0.041887I$ $b=0.580641-0.363782I$	$-4.38515+0.94897I$	0
$u=-0.148356+0.045126I$ $a=-3.00896-2.49575I$ $b=1.95470+0.87168I$	$2.96962+6.50699I$	$13.7787-5.9700I$
$u=-0.148356-0.045126I$ $a=-3.00896+2.49575I$ $b=1.95470-0.87168I$	$2.96962-6.50699I$	$13.7787+5.9700I$

III.

$$\boldsymbol{I^u_3 = \langle -1.35\times 10^5 u^{15} + 5.15\times 10^5 u^{14} + \cdots + 2.67\times 10^5 b + 3.09\times 10^4,\ -5.70\times 10^5 u^{15} + 1.97\times 10^6 u^{14} + \cdots + 1.34\times 10^6 a - 4.25\times 10^6,\ u^{16} - 4u^{15} + \cdots - u + 1\rangle}$$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.426991u^{15} - 1.47700u^{14} + \cdots - 1.64833u + 3.18196 \\ 0.506300u^{15} - 1.92978u^{14} + \cdots + 0.204210u - 0.115875 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.0793094u^{15} + 0.452785u^{14} + \cdots - 1.85254u + 3.29784 \\ 0.506300u^{15} - 1.92978u^{14} + \cdots + 0.204210u - 0.115875 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -1.66162u^{15} + 5.75525u^{14} + \cdots - 9.16104u - 0.00841824 \\ -0.194335u^{15} + 1.26058u^{14} + \cdots - 0.801647u + 0.663182 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.426991u^{15} - 1.47700u^{14} + \cdots - 1.64833u + 3.18196 \\ 0.510721u^{15} - 1.77893u^{14} + \cdots + 0.00818683u - 0.346843 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1.53255u^{15} - 6.54843u^{14} + \cdots + 13.1760u - 1.49836 \\ 0.0802492u^{15} - 0.689561u^{14} + \cdots + 1.26250u - 0.425375 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -1.07106u^{15} + 2.28793u^{14} + \cdots + 12.6165u - 5.85293 \\ -0.0709555u^{15} + 0.340250u^{14} + \cdots + 2.32523u - 1.20232 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.0837301u^{15} + 0.301938u^{14} + \cdots - 1.65651u + 3.52880 \\ 0.510721u^{15} - 1.77893u^{14} + \cdots + 0.00818683u - 0.346843 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.636679u^{15} - 3.36717u^{14} + \cdots + 10.0876u - 2.20527 \\ 0.0721897u^{15} - 0.414518u^{14} + \cdots + 1.95733u - 0.879098 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.445408u^{15} + 0.788567u^{14} + \cdots + 7.00998u - 1.98390 \\ 0.287778u^{15} - 1.19976u^{14} + \cdots + 1.25399u - 0.670117 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{1668929}{445105}u^{15} + \frac{8331783}{445105}u^{14} + \cdots - \frac{10787371}{445105}u + \frac{3576652}{445105}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{16} - 4u^{15} + \cdots - u + 1$
c_2	$u^{16} + 4u^{15} + \cdots + u + 1$
c_3	$u^{16} + 2u^{15} + \cdots + 2u + 1$
c_4, c_6	$u^{16} + u^{15} + \cdots - 4u + 1$
c_5	$u^{16} - u^{15} + \cdots + 9u + 9$
c_7	$u^{16} + u^{15} + \cdots - u + 1$
c_8	$u^{16} - u^{15} + \cdots + u + 1$
c_9, c_{11}	$u^{16} - u^{15} + \cdots + 4u + 1$
c_{10}	$u^{16} + u^{15} + \cdots - 9u + 9$
c_{12}	$u^{16} - 2u^{15} + \cdots - 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2	$y^{16} + 10y^{15} + \cdots + 11y + 1$
c_3, c_{12}	$y^{16} + 12y^{15} + \cdots + 4y + 1$
c_4, c_6, c_9 c_{11}	$y^{16} + 7y^{15} + \cdots + 2y + 1$
c_5, c_{10}	$y^{16} + 13y^{15} + \cdots - 927y + 81$
c_7, c_8	$y^{16} - y^{15} + \cdots + 27y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.626932 + 0.939202I$ $a = 0.245461 + 1.107320I$ $b = 0.45758 + 1.67741I$	$-3.44371 - 5.36963I$	$-4.65919 + 8.71627I$
$u = 0.626932 - 0.939202I$ $a = 0.245461 - 1.107320I$ $b = 0.45758 - 1.67741I$	$-3.44371 + 5.36963I$	$-4.65919 - 8.71627I$
$u = 0.561928 + 0.646656I$ $a = 1.122090 + 0.719975I$ $b = -0.824183 - 0.541509I$	$-3.98555 - 1.28538I$	$1.78219 + 9.46171I$
$u = 0.561928 - 0.646656I$ $a = 1.122090 - 0.719975I$ $b = -0.824183 + 0.541509I$	$-3.98555 + 1.28538I$	$1.78219 - 9.46171I$
$u = -0.044845 + 0.844688I$ $a = 0.201470 - 1.383010I$ $b = -0.35203 - 1.95828I$	4.11885	$12.68263 + 0.I$
$u = -0.044845 - 0.844688I$ $a = 0.201470 + 1.383010I$ $b = -0.35203 + 1.95828I$	4.11885	$12.68263 + 0.I$
$u = -0.770410 + 0.331199I$ $a = 0.236785 + 0.596788I$ $b = 1.06833 + 1.33459I$	$2.42763 + 6.73512I$	$1.81921 - 10.54756I$
$u = -0.770410 - 0.331199I$ $a = 0.236785 - 0.596788I$ $b = 1.06833 - 1.33459I$	$2.42763 - 6.73512I$	$1.81921 + 10.54756I$
$u = 1.134980 + 0.398912I$ $a = -0.326610 - 0.608866I$ $b = -0.471617 + 0.101971I$	-3.98521	$-7.56704 + 0.I$
$u = 1.134980 - 0.398912I$ $a = -0.326610 + 0.608866I$ $b = -0.471617 - 0.101971I$	-3.98521	$-7.56704 + 0.I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.44558 + 1.49412I$ $a = -0.522013 - 0.746739I$ $b = -0.87827 - 1.36350I$	$2.42763 - 6.73512I$	$1.81921 + 10.54756I$
$u = 0.44558 - 1.49412I$ $a = -0.522013 + 0.746739I$ $b = -0.87827 + 1.36350I$	$2.42763 + 6.73512I$	$1.81921 - 10.54756I$
$u = -0.117840 + 0.420370I$ $a = 3.38072 - 1.31571I$ $b = 0.798526 - 0.197831I$	$-3.44371 + 5.36963I$	$-4.65919 - 8.71627I$
$u = -0.117840 - 0.420370I$ $a = 3.38072 + 1.31571I$ $b = 0.798526 + 0.197831I$	$-3.44371 - 5.36963I$	$-4.65919 + 8.71627I$
$u = 0.16367 + 1.77202I$ $a = 0.162097 + 0.279051I$ $b = 0.701667 + 0.382156I$	$-3.98555 - 1.28538I$	$1.78219 + 9.46171I$
$u = 0.16367 - 1.77202I$ $a = 0.162097 - 0.279051I$ $b = 0.701667 - 0.382156I$	$-3.98555 + 1.28538I$	$1.78219 - 9.46171I$

IV. $\boldsymbol{I_4^u = \langle -u^3 + u^2 + b - u,\ u^2 + a - u + 2,\ u^4 - u^3 + 2u^2 + 1 \rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u^3 + 3u^2 + 4u + 7$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2	$y^4 + 3y^3 + 6y^2 + 4y + 1$
c_3, c_{12}	$y^4 + 7y^3 + 18y^2 + 20y + 9$
c_4, c_6, c_9 c_{11}	$y^4 + 4y^3 + 6y^2 + 3y + 1$
c_5, c_{10}	$y^4 - y^3 + 2y^2 + 1$
c_7, c_8	$y^4 - 3y^3 + 5y^2 + 5y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.175098 + 0.691825I$ $a = -1.72714 + 0.93410I$ $b = 0.518913 + 0.666610I$	$-7.71788 + 2.37936I$	$5.93992 + 0.97052I$
$u = -0.175098 - 0.691825I$ $a = -1.72714 - 0.93410I$ $b = 0.518913 - 0.666610I$	$-7.71788 - 2.37936I$	$5.93992 - 0.97052I$
$u = 0.675098 + 1.227920I$ $a = -0.272864 - 0.430014I$ $b = -1.018910 - 0.602565I$	$-2.15173 - 3.38562I$	$-4.43992 + 9.19530I$
$u = 0.675098 - 1.227920I$ $a = -0.272864 + 0.430014I$ $b = -1.018910 + 0.602565I$	$-2.15173 + 3.38562I$	$-4.43992 - 9.19530I$

V. $I_5^u = \langle -u^2+b+u,\ a+u,\ u^4-u^3+u^2-u+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 6u^3-6u^2-1$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.309017+0.951057I$ $a=\ \ 0.309017-0.951057I$ $b=-0.50000-1.53884I$	3.94784	$8.70820+0.I$
$u=-0.309017-0.951057I$ $a=\ \ 0.309017+0.951057I$ $b=-0.50000+1.53884I$	3.94784	$8.70820+0.I$
$u=\ \ 0.809017+0.587785I$ $a=-0.809017-0.587785I$ $b=-0.500000+0.363271I$	-3.94784	$-4.70820+0.I$
$u=\ \ 0.809017-0.587785I$ $a=-0.809017+0.587785I$ $b=-0.500000-0.363271I$	-3.94784	$-4.70820+0.I$

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^4-u^3+u^2-u+1)(u^4-u^3+2u^2+1)(u^{13}+3u^{12}+\cdots+3u-1)$ $\cdot(u^{16}-4u^{15}+\cdots-u+1)(u^{56}-4u^{55}+\cdots-1346u+111)$
c_2	$(u^4+u^3+u^2+u+1)(u^4+u^3+2u^2+1)(u^{13}+3u^{12}+\cdots+3u-1)$ $\cdot(u^{16}+4u^{15}+\cdots+u+1)(u^{56}-4u^{55}+\cdots-1346u+111)$
c_3	$(u^4-u^3+u^2-u+1)(u^4+u^3+4u^2+2u+3)(u^{13}+u^{12}+\cdots-3u-1)$ $\cdot(u^{16}+2u^{15}+\cdots+2u+1)(u^{56}+2u^{54}+\cdots+907u+193)$
c_4, c_6	$(u^4+2u^2+u+1)(u^4+u^3+u^2+u+1)(u^{13}-2u^{12}+\cdots+7u^3-1)$ $\cdot(u^{16}+u^{15}+\cdots-4u+1)(u^{56}+u^{55}+\cdots+13u+3)$
c_5	$(u^4+u^3+1)(u^4+2u^3+\cdots+3u+1)(u^{13}-u^{12}+\cdots+3u-3)$ $\cdot(u^{16}-u^{15}+\cdots+9u+9)(u^{56}+2u^{55}+\cdots+82u+37)$
c_7	$(u^4-3u^3+3u^2-u+1)(u^4+3u^3+4u^2+2u+1)$ $\cdot(u^{13}+3u^{12}+\cdots-8u-3)(u^{16}+u^{15}+\cdots-u+1)$ $\cdot(u^{56}-u^{55}+\cdots+29361u+1951)$
c_8	$(u^4-3u^3+4u^2-2u+1)(u^4+3u^3+3u^2+u+1)$ $\cdot(u^{13}+3u^{12}+\cdots-8u-3)(u^{16}-u^{15}+\cdots+u+1)$ $\cdot(u^{56}-u^{55}+\cdots+29361u+1951)$
c_9, c_{11}	$(u^4+2u^2-u+1)(u^4-u^3+u^2-u+1)(u^{13}-2u^{12}+\cdots+7u^3-1)$ $\cdot(u^{16}-u^{15}+\cdots+4u+1)(u^{56}+u^{55}+\cdots+13u+3)$
c_{10}	$(u^4-2u^3+\cdots-3u+1)(u^4-u^3+1)(u^{13}-u^{12}+\cdots+3u-3)$ $\cdot(u^{16}+u^{15}+\cdots-9u+9)(u^{56}+2u^{55}+\cdots+82u+37)$
c_{12}	$(u^4-u^3+4u^2-2u+3)(u^4+u^3+u^2+u+1)(u^{13}+u^{12}+\cdots-3u-1)$ $\cdot(u^{16}-2u^{15}+\cdots-2u+1)(u^{56}+2u^{54}+\cdots+907u+193)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2	$(y^4+y^3+y^2+y+1)(y^4+3y^3+6y^2+4y+1)$ $\cdot(y^{13}+7y^{12}+\cdots+35y-1)(y^{16}+10y^{15}+\cdots+11y+1)$ $\cdot(y^{56}+50y^{55}+\cdots-249724y+12321)$
c_3, c_{12}	$(y^4+y^3+y^2+y+1)(y^4+7y^3+18y^2+20y+9)$ $\cdot(y^{13}+7y^{12}+\cdots+3y-1)(y^{16}+12y^{15}+\cdots+4y+1)$ $\cdot(y^{56}+4y^{55}+\cdots-242491y+37249)$
c_4, c_6, c_9 c_{11}	$(y^4+y^3+y^2+y+1)(y^4+4y^3+\cdots+3y+1)(y^{13}+4y^{11}+\cdots-2y^2-1)$ $\cdot(y^{16}+7y^{15}+\cdots+2y+1)(y^{56}+15y^{55}+\cdots+275y+9)$
c_5, c_{10}	$(y^4-y^3+2y^2+1)(y^4+4y^3+6y^2-y+1)(y^{13}+15y^{12}+\cdots+39y-9)$ $\cdot(y^{16}+13y^{15}+\cdots-927y+81)(y^{56}+52y^{55}+\cdots-39284y+1369)$
c_7, c_8	$(y^4-3y^3+5y^2+5y+1)(y^4-y^3+6y^2+4y+1)$ $\cdot(y^{13}-3y^{12}+\cdots+34y-9)(y^{16}-y^{15}+\cdots+27y+1)$ $\cdot(y^{56}-31y^{55}+\cdots-114413905y+3806401)$