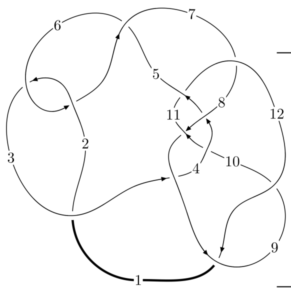
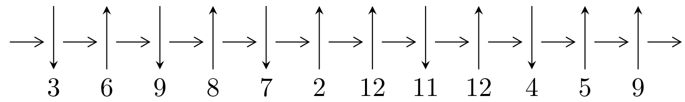
$12n_{0460}$ ($K12n_{0460}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -1248355972972u^{23} - 21816995305526u^{22} + \cdots + 15213911151543b - 18832007879252, \\
& -18832007879252u^{23} - 332734361961676u^{22} + \cdots + 7606955757715a - 305928879409436, \\
& u^{24} + 18u^{23} + \cdots + 63u + 5\rangle \\
I_2^u = \langle & -u^{13} + 3u^{12} - 2u^{11} - 9u^{10} + 22u^9 - 16u^8 - 20u^7 + 55u^6 - 50u^5 - u^4 + 46u^3 - 53u^2 + b + 28u - 8, \\
& 8u^{13} - 69u^{12} + \cdots + 13a - 164,\ u^{14} - 7u^{13} + \cdots - 66u + 13\rangle \\
I_3^u = \langle & u^{11} - 3u^{10} + 5u^9 - 4u^8 + 4u^7 - 5u^6 + 7u^5 - 4u^4 + 3u^3 - 2au - 3u^2 + 2b + 5u - 4, \\
& -4u^{11}a + u^{11} + \cdots + 4a + 24, \\
& u^{12} - 3u^{11} + 7u^{10} - 10u^9 + 16u^8 - 19u^7 + 25u^6 - 22u^5 + 23u^4 - 15u^3 + 15u^2 - 6u + 4\rangle
\end{aligned}$$

$$\begin{aligned}
I_1^v &= \langle a,\ v^2 + b - 2v + 2,\ v^4 - 3v^3 + 5v^2 - 3v + 1\rangle \\
I_2^v &= \langle a,\ b + 1,\ v - 1\rangle
\end{aligned}$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 67 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. $I_1^u = \langle -1.25 \times 10^{12}u^{23} - 2.18 \times 10^{13}u^{22} + \cdots + 1.52 \times 10^{12}b - 1.88 \times 10^{13},\ -1.88 \times 10^{13}u^{23} - 3.33 \times 10^{14}u^{22} + \cdots + 7.61 \times 10^{12}a - 3.06 \times 10^{14},\ u^{24} + 18u^{23} + \cdots + 63u + 5 \rangle$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} 2.47563u^{23} + 43.7408u^{22} + \cdots + 399.917u + 40.2170 \\ 0.820536u^{23} + 14.3402u^{22} + \cdots + 115.748u + 12.3781 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.136050u^{23} + 2.29322u^{22} + \cdots + 6.95177u + 1.65823 \\ 0.155672u^{23} + 2.68503u^{22} + \cdots + 7.91289u + 0.680248 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.174665u^{23} + 2.79784u^{22} + \cdots + 5.73760u + 1.56012 \\ 0.452229u^{23} + 7.79322u^{22} + \cdots + 19.7188u + 1.63255 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1.65509u^{23} + 29.4006u^{22} + \cdots + 284.170u + 27.8388 \\ 0.820536u^{23} + 14.3402u^{22} + \cdots + 115.748u + 12.3781 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 2.38937u^{23} + 42.1061u^{22} + \cdots + 383.557u + 38.2617 \\ 1.17675u^{23} + 20.7176u^{22} + \cdots + 144.303u + 14.9358 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.812939u^{23} - 13.6447u^{22} + \cdots - 40.9787u - 2.36243 \\ -1.10529u^{23} - 18.9019u^{22} + \cdots - 56.9798u - 4.84305 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.822628u^{23} + 13.5628u^{22} + \cdots + 65.4774u + 5.93289 \\ 2.10151u^{23} + 36.5939u^{22} + \cdots + 173.676u + 16.6453 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.778150u^{23} + 13.1980u^{22} + \cdots + 46.3607u + 3.84960 \\ 1.56119u^{23} + 26.8336u^{22} + \cdots + 93.3811u + 7.91527 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.0582376u^{23} - 0.896432u^{22} + \cdots + 2.25306u + 1.07610 \\ 0.0386155u^{23} + 0.504620u^{22} + \cdots - 1.21417u - 0.0981103 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= \frac{12998513265738}{1521391151543}u^{23} + \frac{228690626935746}{1521391151543}u^{22} + \cdots + \frac{1512678087445189}{1521391151543}u + \frac{140722368482773}{1521391151543}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{24} + 5u^{23} + \cdots + 4u + 25$
c_2, c_6	$u^{24} - 5u^{23} + \cdots - 24u + 5$
c_3	$u^{24} + 32u^{22} + \cdots + 3u + 1$
c_4, c_{11}	$u^{24} + u^{23} + \cdots + 4u + 1$
c_7	$u^{24} - 27u^{23} + \cdots - 6144u + 1024$
c_8	$u^{24} - 18u^{23} + \cdots - 63u + 5$
c_9, c_{12}	$u^{24} - 26u^{22} + \cdots + 17u + 1$
c_{10}	$u^{24} + 12u^{22} + \cdots + 19u + 16$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{24} + 33y^{23} + \cdots - 7216y + 625$
c_2, c_6	$y^{24} + 5y^{23} + \cdots + 4y + 25$
c_3	$y^{24} + 64y^{23} + \cdots + 7y + 1$
c_4, c_{11}	$y^{24} - 9y^{23} + \cdots - 16y + 1$
c_7	$y^{24} - 15y^{23} + \cdots + 29884416y^2 + 1048576$
c_8	$y^{24} + 50y^{22} + \cdots + 101y + 25$
c_9, c_{12}	$y^{24} - 52y^{23} + \cdots - 117y + 1$
c_{10}	$y^{24} + 24y^{23} + \cdots + 4311y + 256$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.401173 + 1.000390I$ $a = 0.287799 - 1.279530I$ $b = -1.164570 - 0.801223I$	$4.97730 + 3.76182I$	$7.47515 - 2.42928I$
$u = -0.401173 - 1.000390I$ $a = 0.287799 + 1.279530I$ $b = -1.164570 + 0.801223I$	$4.97730 - 3.76182I$	$7.47515 + 2.42928I$
$u = -0.895129 + 0.707186I$ $a = -0.642012 - 0.323894I$ $b = -0.803737 + 0.164096I$	$3.40541 + 0.54338I$	$9.96762 + 0.I$
$u = -0.895129 - 0.707186I$ $a = -0.642012 + 0.323894I$ $b = -0.803737 - 0.164096I$	$3.40541 - 0.54338I$	$9.96762 + 0.I$
$u = -0.634153 + 0.969164I$ $a = -0.099094 + 1.257220I$ $b = 1.15561 + 0.89330I$	$3.19488 + 9.64059I$	$5.12102 - 7.65493I$
$u = -0.634153 - 0.969164I$ $a = -0.099094 - 1.257220I$ $b = 1.15561 - 0.89330I$	$3.19488 - 9.64059I$	$5.12102 + 7.65493I$
$u = -0.388319 + 0.539618I$ $a = -0.22109 + 1.74704I$ $b = 0.856878 + 0.797713I$	$-1.96075 + 3.03649I$	$1.72656 - 2.94326I$
$u = -0.388319 - 0.539618I$ $a = -0.22109 - 1.74704I$ $b = 0.856878 - 0.797713I$	$-1.96075 - 3.03649I$	$1.72656 + 2.94326I$
$u = 0.264551 + 0.575187I$ $a = -0.414815 + 0.746478I$ $b = 0.539104 + 0.041115I$	$-0.61911 - 1.60676I$	$-1.07516 + 5.36024I$
$u = 0.264551 - 0.575187I$ $a = -0.414815 - 0.746478I$ $b = 0.539104 - 0.041115I$	$-0.61911 + 1.60676I$	$-1.07516 - 5.36024I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.666916 + 1.239860I$ $a = \ \ 0.329991 + 0.358310I$ $b = \ \ 0.664331 - 0.170181I$	$3.42032 - 4.04799I$	$0. + 7.82789I$
$u = -0.666916 - 1.239860I$ $a = \ \ 0.329991 - 0.358310I$ $b = \ \ 0.664331 + 0.170181I$	$3.42032 + 4.04799I$	$0. - 7.82789I$
$u = -0.053583 + 0.452097I$ $a = \ \ 0.55903 - 2.05204I$ $b = -0.897767 - 0.362690I$	$1.51247 + 0.42081I$	$8.19848 - 1.31600I$
$u = -0.053583 - 0.452097I$ $a = \ \ 0.55903 + 2.05204I$ $b = -0.897767 + 0.362690I$	$1.51247 - 0.42081I$	$8.19848 + 1.31600I$
$u = -0.359542 + 0.101893I$ $a = -0.10927 + 2.29685I$ $b = \ \ 0.194744 + 0.836947I$	$0.17995 - 2.31205I$	$-1.12278 + 4.62522I$
$u = -0.359542 - 0.101893I$ $a = -0.10927 - 2.29685I$ $b = \ \ 0.194744 - 0.836947I$	$0.17995 + 2.31205I$	$-1.12278 - 4.62522I$
$u = -0.93950 + 1.42997I$ $a = \ \ 0.065784 - 0.924691I$ $b = -1.26048 - 0.96281I$	$15.4724 + 7.4151I$	0
$u = -0.93950 - 1.42997I$ $a = \ \ 0.065784 + 0.924691I$ $b = -1.26048 + 0.96281I$	$15.4724 - 7.4151I$	0
$u = -1.02696 + 1.40305I$ $a = -0.027606 + 0.911387I$ $b = \ \ 1.25037 + 0.97469I$	$15.0388 + 14.5096I$	0
$u = -1.02696 - 1.40305I$ $a = -0.027606 - 0.911387I$ $b = \ \ 1.25037 - 0.97469I$	$15.0388 - 14.5096I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.96069+1.10463I$ $a=-0.366729+0.020741I$ $b=-0.696132+0.445764I$	$12.99680+2.23230I$	0
$u=-1.96069-1.10463I$ $a=-0.366729-0.020741I$ $b=-0.696132-0.445764I$	$12.99680-2.23230I$	0
$u=-1.93859+1.28607I$ $a=0.338018+0.004948I$ $b=0.661642-0.425123I$	$13.11360-4.55126I$	0
$u=-1.93859-1.28607I$ $a=0.338018-0.004948I$ $b=0.661642+0.425123I$	$13.11360+4.55126I$	0

II. $\boldsymbol{I_2^u = \langle -u^{13} + 3u^{12} + \cdots + b - 8,\ 8u^{13} - 69u^{12} + \cdots + 13a - 164,\ u^{14} - 7u^{13} + \cdots - 66u + 13\rangle}$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} -0.615385u^{13} + 5.30769u^{12} + \cdots - 54.0769u + 12.6154 \\ u^{13} - 3u^{12} + \cdots - 28u + 8 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.923077u^{13} + 5.46154u^{12} + \cdots - 40.6154u + 6.92308 \\ -u^{13} + 6u^{12} + \cdots - 53u + 12 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.923077u^{13} + 5.46154u^{12} + \cdots - 39.6154u + 5.92308 \\ -u^{13} + 6u^{12} + \cdots - 53u + 12 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -1.61538u^{13} + 8.30769u^{12} + \cdots - 26.0769u + 4.61538 \\ u^{13} - 3u^{12} + \cdots - 28u + 8 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 3.38462u^{13} - 18.6923u^{12} + \cdots + 122.923u - 26.3846 \\ 11u^{13} - 64u^{12} + \cdots + 435u - 96 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1.92308u^{13} - 12.4615u^{12} + \cdots + 134.615u - 31.9231 \\ -u^{12} + 5u^{11} + \cdots + 40u - 12 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -4.38462u^{13} + 20.6923u^{12} + \cdots - 6.92308u - 5.61538 \\ -19u^{13} + 111u^{12} + \cdots - 752u + 161 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.923077u^{13} - 6.46154u^{12} + \cdots + 80.6154u - 20.9231 \\ -2u^{12} + 10u^{11} + \cdots + 82u - 25 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.0769231u^{13} - 0.538462u^{12} + \cdots + 13.3846u - 4.07692 \\ u - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -14u^{13} + 87u^{12} - 228u^{11} + 253u^{10} + 151u^9 - 946u^8 + 1451u^7 - 907u^6 - 571u^5 + 1908u^4 - 2143u^3 + 1430u^2 - 580u + 122$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{14} - 4u^{13} + \cdots - 11u + 1$
c_2	$u^{14} - 2u^{13} + \cdots - u + 1$
c_3	$u^{14} - u^{13} + \cdots - 4u + 1$
c_4, c_{11}	$u^{14} + u^{12} + \cdots + u + 1$
c_6	$u^{14} + 2u^{13} + \cdots + u + 1$
c_7	$u^{14} - 5u^{13} + \cdots + 2u + 1$
c_8	$u^{14} - 7u^{13} + \cdots - 66u + 13$
c_9	$u^{14} + 7u^{13} + \cdots + 2u + 1$
c_{10}	$u^{14} - u^{13} + \cdots + u^2 + 1$
c_{12}	$u^{14} - 7u^{13} + \cdots - 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{14} + 16y^{13} + \cdots - 29y + 1$
c_2, c_6	$y^{14} + 4y^{13} + \cdots + 11y + 1$
c_3	$y^{14} + 7y^{13} + \cdots - 2y + 1$
c_4, c_{11}	$y^{14} + 2y^{13} + \cdots + 7y + 1$
c_7	$y^{14} - 15y^{13} + \cdots - 6y + 1$
c_8	$y^{14} - 5y^{13} + \cdots + 168y + 169$
c_9, c_{12}	$y^{14} - 5y^{13} + \cdots + 14y + 1$
c_{10}	$y^{14} + 7y^{13} + \cdots + 2y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.849111 + 0.715901I$ $a = 0.019947 + 1.052460I$ $b = -0.736521 + 0.907937I$	$-3.07370 - 3.80425I$	$-5.63446 + 5.71514I$
$u = 0.849111 - 0.715901I$ $a = 0.019947 - 1.052460I$ $b = -0.736521 - 0.907937I$	$-3.07370 + 3.80425I$	$-5.63446 - 5.71514I$
$u = 0.313761 + 1.089880I$ $a = -0.549742 - 0.549016I$ $b = 0.425872 - 0.771411I$	$1.77746 - 4.05505I$	$3.41727 + 6.24011I$
$u = 0.313761 - 1.089880I$ $a = -0.549742 + 0.549016I$ $b = 0.425872 + 0.771411I$	$1.77746 + 4.05505I$	$3.41727 - 6.24011I$
$u = 0.311775 + 0.708424I$ $a = 0.892105 + 0.945635I$ $b = -0.391774 + 0.926814I$	$0.73793 + 1.30082I$	$2.62476 + 1.43148I$
$u = 0.311775 - 0.708424I$ $a = 0.892105 - 0.945635I$ $b = -0.391774 - 0.926814I$	$0.73793 - 1.30082I$	$2.62476 - 1.43148I$
$u = 1.119030 + 0.593759I$ $a = -0.391744 + 0.935712I$ $b = -0.993957 + 0.814483I$	$1.54894 - 8.36056I$	$3.10198 + 6.93573I$
$u = 1.119030 - 0.593759I$ $a = -0.391744 - 0.935712I$ $b = -0.993957 - 0.814483I$	$1.54894 + 8.36056I$	$3.10198 - 6.93573I$
$u = 1.189000 + 0.649257I$ $a = 0.371944 - 0.816978I$ $b = 0.972669 - 0.729899I$	$2.10101 - 2.72257I$	$4.91037 + 2.51501I$
$u = 1.189000 - 0.649257I$ $a = 0.371944 + 0.816978I$ $b = 0.972669 + 0.729899I$	$2.10101 + 2.72257I$	$4.91037 - 2.51501I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.381310 + 0.146372I$ $a = -0.063316 + 0.461767I$ $b = 0.019869 - 0.647110I$	$12.91060 - 3.47104I$	$5.96925 + 1.99685I$
$u = -1.381310 - 0.146372I$ $a = -0.063316 - 0.461767I$ $b = 0.019869 + 0.647110I$	$12.91060 + 3.47104I$	$5.96925 - 1.99685I$
$u = 1.09864 + 1.09539I$ $a = 0.028499 - 0.613967I$ $b = 0.703842 - 0.643310I$	$-1.19786 - 3.68086I$	$-0.88917 + 6.15653I$
$u = 1.09864 - 1.09539I$ $a = 0.028499 + 0.613967I$ $b = 0.703842 + 0.643310I$	$-1.19786 + 3.68086I$	$-0.88917 - 6.15653I$

III. $I_3^u =$
$\langle u^{11}-3u^{10}+\cdots+2b-4,\ -4u^{11}a+u^{11}+\cdots+4a+24,\ u^{12}-3u^{11}+\cdots-6u+4\rangle$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} a \\ -\frac{1}{2}u^{11} + \frac{3}{2}u^{10} + \cdots - \frac{5}{2}u + 2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} \frac{1}{2}u^{11}a - \frac{1}{4}u^{11} + \cdots - 2a + \frac{1}{2} \\ 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{3}{2}u^{11}a - \frac{1}{4}u^{11} + \cdots - 2a + \frac{3}{2} \\ -u^{11}a + 3u^{10}a + \cdots - 4au + 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} \frac{1}{2}u^{11} - \frac{3}{2}u^{10} + \cdots + a - 2 \\ -\frac{1}{2}u^{11} + \frac{3}{2}u^{10} + \cdots - \frac{5}{2}u + 2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^{11} - 3u^{10} + \cdots + a + 2u \\ -\frac{1}{2}u^{11} + \frac{3}{2}u^{10} + \cdots - \frac{9}{2}u + 2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} \frac{1}{2}u^{11}a - \frac{1}{4}u^{11} + \cdots - 2a + \frac{3}{2} \\ 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -\frac{1}{2}u^{11}a + \frac{1}{2}u^{11} + \cdots + 2a - \frac{1}{2} \\ au \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^{10}a - \frac{1}{4}u^{11} + \cdots - 4a + \frac{3}{2} \\ -\frac{1}{2}u^{11} + \frac{3}{2}u^{10} + \cdots + 2a + 2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} \frac{3}{2}u^{11}a - \frac{1}{4}u^{11} + \cdots - 2a + \frac{1}{2} \\ -u^{11}a + 3u^{10}a + \cdots + u - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -\frac{1}{2}u^{11} + \frac{5}{2}u^{10} - \frac{5}{2}u^9 + 4u^8 - 2u^7 + \frac{19}{2}u^6 - \frac{7}{2}u^5 + 12u^4 - \frac{3}{2}u^3 + \frac{29}{2}u^2 - \frac{5}{2}u + 16$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$(u^{12} + 2u^{11} + \cdots + 6u + 1)^2$
c_2, c_6	$(u^{12} + 2u^{11} + \cdots + 2u + 1)^2$
c_3	$u^{24} + 20u^{22} + \cdots - 1035u + 22$
c_4, c_{11}	$u^{24} + 2u^{23} + \cdots - 7u + 16$
c_7	$(u + 1)^{24}$
c_8	$(u^{12} + 3u^{11} + \cdots + 6u + 4)^2$
c_9, c_{12}	$u^{24} - 5u^{23} + \cdots + 8613u + 4448$
c_{10}	$u^{24} + 2u^{23} + \cdots + 1443u + 5011$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$(y^{12} + 18y^{11} + \cdots + 6y + 1)^2$
c_2, c_6	$(y^{12} + 2y^{11} + \cdots + 6y + 1)^2$
c_3	$y^{24} + 40y^{23} + \cdots - 489721y + 484$
c_4, c_{11}	$y^{24} + 38y^{22} + \cdots - 2737y + 256$
c_7	$(y-1)^{24}$
c_8	$(y^{12} + 5y^{11} + \cdots + 84y + 16)^2$
c_9, c_{12}	$y^{24} - 37y^{23} + \cdots + 4661479y + 19784704$
c_{10}	$y^{24} + 20y^{23} + \cdots + 194809963y + 25110121$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.595557 + 0.863954I$ $a = -0.141148 - 0.929948I$ $b = 1.07056 - 1.49446I$	$13.6814 + 5.8161I$	$7.09681 - 5.45294I$
$u = -0.595557 + 0.863954I$ $a = 1.75162 + 0.03168I$ $b = -0.887493 - 0.431892I$	$13.6814 + 5.8161I$	$7.09681 - 5.45294I$
$u = -0.595557 - 0.863954I$ $a = -0.141148 + 0.929948I$ $b = 1.07056 + 1.49446I$	$13.6814 - 5.8161I$	$7.09681 + 5.45294I$
$u = -0.595557 - 0.863954I$ $a = 1.75162 - 0.03168I$ $b = -0.887493 + 0.431892I$	$13.6814 - 5.8161I$	$7.09681 + 5.45294I$
$u = -0.521857 + 0.963930I$ $a = 0.105818 + 0.886399I$ $b = -1.08284 + 1.48890I$	$14.05920 - 1.29677I$	$8.02075 - 0.64369I$
$u = -0.521857 + 0.963930I$ $a = -1.66482 - 0.22205I$ $b = 0.909648 + 0.360572I$	$14.05920 - 1.29677I$	$8.02075 - 0.64369I$
$u = -0.521857 - 0.963930I$ $a = 0.105818 - 0.886399I$ $b = -1.08284 - 1.48890I$	$14.05920 + 1.29677I$	$8.02075 + 0.64369I$
$u = -0.521857 - 0.963930I$ $a = -1.66482 + 0.22205I$ $b = 0.909648 - 0.360572I$	$14.05920 + 1.29677I$	$8.02075 + 0.64369I$
$u = 0.380152 + 1.069420I$ $a = -0.102983 + 0.676971I$ $b = -1.04377 + 1.20002I$	$3.57471 - 4.01356I$	$9.35409 + 5.50726I$
$u = 0.380152 + 1.069420I$ $a = -0.688213 - 1.220660I$ $b = 0.763114 - 0.147220I$	$3.57471 - 4.01356I$	$9.35409 + 5.50726I$

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.380152 - 1.069420I$ $a = -0.102983 - 0.676971I$ $b = -1.04377 - 1.20002I$	$3.57471 + 4.01356I$	$9.35409 - 5.50726I$
$u = 0.380152 - 1.069420I$ $a = -0.688213 + 1.220660I$ $b = 0.763114 + 0.147220I$	$3.57471 + 4.01356I$	$9.35409 - 5.50726I$
$u = 0.246665 + 0.748766I$ $a = 0.218149 - 0.727778I$ $b = 1.29103 - 1.21568I$	$2.20338 + 1.32744I$	$9.73221 + 1.32386I$
$u = 0.246665 + 0.748766I$ $a = 0.95223 + 2.03791I$ $b = -0.598745 + 0.016175I$	$2.20338 + 1.32744I$	$9.73221 + 1.32386I$
$u = 0.246665 - 0.748766I$ $a = 0.218149 + 0.727778I$ $b = 1.29103 + 1.21568I$	$2.20338 - 1.32744I$	$9.73221 - 1.32386I$
$u = 0.246665 - 0.748766I$ $a = 0.95223 - 2.03791I$ $b = -0.598745 - 0.016175I$	$2.20338 - 1.32744I$	$9.73221 - 1.32386I$
$u = 1.005850 + 0.842159I$ $a = -0.170941 + 0.863353I$ $b = -0.453719 + 0.571135I$	$-1.51202 - 2.72726I$	$-2.43929 - 0.47681I$
$u = 1.005850 + 0.842159I$ $a = -0.014301 - 0.555838I$ $b = 0.899022 - 0.724448I$	$-1.51202 - 2.72726I$	$-2.43929 - 0.47681I$
$u = 1.005850 - 0.842159I$ $a = -0.170941 - 0.863353I$ $b = -0.453719 - 0.571135I$	$-1.51202 + 2.72726I$	$-2.43929 + 0.47681I$
$u = 1.005850 - 0.842159I$ $a = -0.014301 + 0.555838I$ $b = 0.899022 + 0.724448I$	$-1.51202 + 2.72726I$	$-2.43929 + 0.47681I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.98474 + 1.10667I$ $a = -0.168174 - 0.749804I$ $b = 0.797372 - 0.556358I$	$-0.75285 - 4.59014I$	$2.73542 + 11.41867I$
$u = 0.98474 + 1.10667I$ $a = -0.077239 + 0.651782I$ $b = -0.664181 + 0.924478I$	$-0.75285 - 4.59014I$	$2.73542 + 11.41867I$
$u = 0.98474 - 1.10667I$ $a = -0.168174 + 0.749804I$ $b = 0.797372 + 0.556358I$	$-0.75285 + 4.59014I$	$2.73542 - 11.41867I$
$u = 0.98474 - 1.10667I$ $a = -0.077239 - 0.651782I$ $b = -0.664181 - 0.924478I$	$-0.75285 + 4.59014I$	$2.73542 - 11.41867I$

IV. $I_1^v = \langle a,\ v^2 + b - 2v + 2,\ v^4 - 3v^3 + 5v^2 - 3v + 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -7v^3 + 21v^2 - 28v + 14$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 0.378256 + 0.440597I$ $a = 0$ $b = -1.192440 + 0.547877I$	$1.64493 + 2.02988I$	$3.50000 - 6.06218I$
$v = 0.378256 - 0.440597I$ $a = 0$ $b = -1.192440 - 0.547877I$	$1.64493 - 2.02988I$	$3.50000 + 6.06218I$
$v = 1.12174 + 1.30662I$ $a = 0$ $b = 0.692440 - 0.318148I$	$1.64493 - 2.02988I$	$3.50000 + 6.06218I$
$v = 1.12174 - 1.30662I$ $a = 0$ $b = 0.692440 + 0.318148I$	$1.64493 + 2.02988I$	$3.50000 - 6.06218I$

V. $I_2^v = \langle a,\ b+1,\ v-1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 1.00000$ $a = 0$ $b = -1.00000$	1.64493	6.00000

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_5	$u(u^2-u+1)^2(u^{12}+2u^{11}+\cdots+6u+1)^2$ $\cdot(u^{14}-4u^{13}+\cdots-11u+1)(u^{24}+5u^{23}+\cdots+4u+25)$
c_2	$u(u^2+u+1)^2(u^{12}+2u^{11}+\cdots+2u+1)^2(u^{14}-2u^{13}+\cdots-u+1)$ $\cdot(u^{24}-5u^{23}+\cdots-24u+5)$
c_3	$(u-1)(u^4-u^3-u^2+u+1)(u^{14}-u^{13}+\cdots-4u+1)$ $\cdot(u^{24}+20u^{22}+\cdots-1035u+22)(u^{24}+32u^{22}+\cdots+3u+1)$
c_4, c_{11}	$(u-1)(u^4-u^3-u^2+u+1)(u^{14}+u^{12}+\cdots+u+1)$ $\cdot(u^{24}+u^{23}+\cdots+4u+1)(u^{24}+2u^{23}+\cdots-7u+16)$
c_6	$u(u^2-u+1)^2(u^{12}+2u^{11}+\cdots+2u+1)^2(u^{14}+2u^{13}+\cdots+u+1)$ $\cdot(u^{24}-5u^{23}+\cdots-24u+5)$
c_7	$(u-1)(u+1)^{28}(u^{14}-5u^{13}+\cdots+2u+1)$ $\cdot(u^{24}-27u^{23}+\cdots-6144u+1024)$
c_8	$u^5(u^{12}+3u^{11}+\cdots+6u+4)^2(u^{14}-7u^{13}+\cdots-66u+13)$ $\cdot(u^{24}-18u^{23}+\cdots-63u+5)$
c_9	$(u-1)(u+1)^4(u^{14}+7u^{13}+\cdots+2u+1)(u^{24}-26u^{22}+\cdots+17u+1)$ $\cdot(u^{24}-5u^{23}+\cdots+8613u+4448)$
c_{10}	$(u-1)(u^4-u^3-u^2+u+1)(u^{14}-u^{13}+\cdots+u^2+1)$ $\cdot(u^{24}+12u^{22}+\cdots+19u+16)(u^{24}+2u^{23}+\cdots+1443u+5011)$
c_{12}	$((u-1)^5)(u^{14}-7u^{13}+\cdots-2u+1)(u^{24}-26u^{22}+\cdots+17u+1)$ $\cdot(u^{24}-5u^{23}+\cdots+8613u+4448)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y(y^2+y+1)^2(y^{12}+18y^{11}+\cdots+6y+1)^2$ $\cdot(y^{14}+16y^{13}+\cdots-29y+1)(y^{24}+33y^{23}+\cdots-7216y+625)$
c_2, c_6	$y(y^2+y+1)^2(y^{12}+2y^{11}+\cdots+6y+1)^2$ $\cdot(y^{14}+4y^{13}+\cdots+11y+1)(y^{24}+5y^{23}+\cdots+4y+25)$
c_3	$(y-1)(y^4-3y^3+\cdots-3y+1)(y^{14}+7y^{13}+\cdots-2y+1)$ $\cdot(y^{24}+40y^{23}+\cdots-489721y+484)(y^{24}+64y^{23}+\cdots+7y+1)$
c_4, c_{11}	$(y-1)(y^4-3y^3+\cdots-3y+1)(y^{14}+2y^{13}+\cdots+7y+1)$ $\cdot(y^{24}+38y^{22}+\cdots-2737y+256)(y^{24}-9y^{23}+\cdots-16y+1)$
c_7	$((y-1)^{29})(y^{14}-15y^{13}+\cdots-6y+1)$ $\cdot(y^{24}-15y^{23}+\cdots+29884416y^2+1048576)$
c_8	$y^5(y^{12}+5y^{11}+\cdots+84y+16)^2(y^{14}-5y^{13}+\cdots+168y+169)$ $\cdot(y^{24}+50y^{22}+\cdots+101y+25)$
c_9, c_{12}	$((y-1)^5)(y^{14}-5y^{13}+\cdots+14y+1)(y^{24}-52y^{23}+\cdots-117y+1)$ $\cdot(y^{24}-37y^{23}+\cdots+4661479y+19784704)$
c_{10}	$(y-1)(y^4-3y^3+\cdots-3y+1)(y^{14}+7y^{13}+\cdots+2y+1)$ $\cdot(y^{24}+20y^{23}+\cdots+194809963y+25110121)$ $\cdot(y^{24}+24y^{23}+\cdots+4311y+256)$