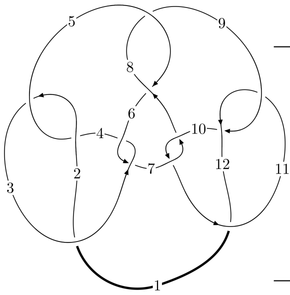
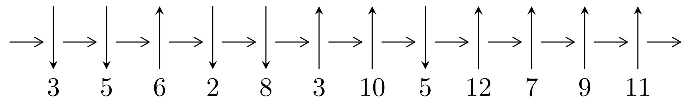
$12n_{0085}$ $(K12n_{0085})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -8.01204\times 10^{90}u^{45} + 1.50405\times 10^{91}u^{44} + \cdots + 3.33019\times 10^{91}b - 2.86123\times 10^{92}, \\
& -5.16653\times 10^{90}u^{45} + 9.63398\times 10^{90}u^{44} + \cdots + 3.33019\times 10^{91}a - 3.97217\times 10^{92}, \\
& u^{46} - 2u^{45} + \cdots + 32u + 32\rangle \\
I_2^u = \langle & u^8 - 2u^7 + 3u^6 - 3u^5 + 4u^4 - 4u^3 + 3u^2 + b - 2u + 1, \\
& 3u^8 - 4u^7 + 8u^6 - 7u^5 + 13u^4 - 9u^3 + 11u^2 + a - 6u + 6,\ u^9 - u^8 + 2u^7 - u^6 + 3u^5 - u^4 + 2u^3 + u + 1\rangle
\end{aligned}$$

$$I_1^v = \langle a,\ -16v^4 + 47v^3 - 36v^2 + 29b + 104v + 5,\ v^5 - 3v^4 + 3v^3 - 8v^2 + v - 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 60 representations.

[1] The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

[2] All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I. $\boldsymbol{I_1^u = \langle -8.01 \times 10^{90} u^{45} + 1.50 \times 10^{91} u^{44} + \cdots + 3.33 \times 10^{91} b - 2.86 \times 10^{92},\ -5.17 \times 10^{90} u^{45} + 9.63 \times 10^{90} u^{44} + \cdots + 3.33 \times 10^{91} a - 3.97 \times 10^{92},\ u^{46} - 2u^{45} + \cdots + 32u + 32 \rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 0.155142u^{45} - 0.289292u^{44} + \cdots + 3.45866u + 11.9278 \\ 0.240588u^{45} - 0.451642u^{44} + \cdots + 31.6377u + 8.59181 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.180370u^{45} - 0.347609u^{44} + \cdots + 22.1880u + 3.90329 \\ 0.00906533u^{45} - 0.0528530u^{44} + \cdots - 1.97758u - 5.86471 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.189435u^{45} - 0.400462u^{44} + \cdots + 20.2104u - 1.96143 \\ 0.00906533u^{45} - 0.0528530u^{44} + \cdots - 1.97758u - 5.86471 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.0972359u^{45} - 0.101045u^{44} + \cdots + 18.1876u + 12.7399 \\ 0.0831514u^{45} - 0.0596108u^{44} + \cdots + 23.5834u + 14.7786 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.0216467u^{45} - 0.00784512u^{44} + \cdots + 11.4970u + 5.02842 \\ 0.118455u^{45} - 0.115438u^{44} + \cdots + 27.8576u + 16.6339 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.0465827u^{45} + 0.0735841u^{44} + \cdots - 26.1646u + 6.17270 \\ 0.203398u^{45} - 0.521213u^{44} + \cdots + 12.7874u - 10.4351 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0140845u^{45} - 0.0414345u^{44} + \cdots - 5.39582u - 2.03877 \\ -0.0959655u^{45} + 0.0891363u^{44} + \cdots - 23.6096u - 14.3541 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.422424u^{45} - 0.812824u^{44} + \cdots + 41.9060u + 18.8214 \\ -0.0860042u^{45} + 0.279668u^{44} + \cdots - 6.21471u + 14.2803 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 2.27338u^{45} - 5.41938u^{44} + \cdots + 115.558u - 6.90034$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{46} + 61u^{45} + \cdots + 62504u + 1$
c_2, c_4	$u^{46} - 11u^{45} + \cdots + 260u - 1$
c_3, c_6	$u^{46} + 8u^{45} + \cdots + 9216u + 512$
c_5, c_8	$u^{46} - 3u^{45} + \cdots + 2u - 1$
c_7, c_{10}	$u^{46} + 2u^{45} + \cdots - 32u + 32$
c_9, c_{11}	$u^{46} + 7u^{45} + \cdots + 4u + 1$
c_{12}	$u^{46} - 17u^{45} + \cdots - 22u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{46} - 141y^{45} + \cdots - 3903085204y + 1$
c_2, c_4	$y^{46} - 61y^{45} + \cdots - 62504y + 1$
c_3, c_6	$y^{46} + 60y^{45} + \cdots - 71827456y + 262144$
c_5, c_8	$y^{46} - y^{45} + \cdots - 32y + 1$
c_7, c_{10}	$y^{46} + 36y^{45} + \cdots + 8704y + 1024$
c_9, c_{11}	$y^{46} - 17y^{45} + \cdots - 22y + 1$
c_{12}	$y^{46} + 31y^{45} + \cdots + 246y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.378169 + 0.944081I$ $a = 0.311249 - 0.267542I$ $b = 0.391023 - 0.209753I$	$0.00959 - 1.79095I$	$3.07595 + 1.44696I$
$u = -0.378169 - 0.944081I$ $a = 0.311249 + 0.267542I$ $b = 0.391023 + 0.209753I$	$0.00959 + 1.79095I$	$3.07595 - 1.44696I$
$u = 0.733270 + 0.623347I$ $a = 0.092842 + 0.753829I$ $b = -0.073700 + 0.162456I$	$3.69426 - 1.19679I$	$10.96091 + 0.32680I$
$u = 0.733270 - 0.623347I$ $a = 0.092842 - 0.753829I$ $b = -0.073700 - 0.162456I$	$3.69426 + 1.19679I$	$10.96091 - 0.32680I$
$u = -0.172617 + 1.096660I$ $a = 0.353108 - 0.099187I$ $b = -0.924288 - 0.155002I$	$-2.08149 - 2.37209I$	$2.00000 + 4.29323I$
$u = -0.172617 - 1.096660I$ $a = 0.353108 + 0.099187I$ $b = -0.924288 + 0.155002I$	$-2.08149 + 2.37209I$	$2.00000 - 4.29323I$
$u = 0.863631 + 0.008081I$ $a = 0.668878 - 0.492509I$ $b = 0.385328 + 1.024490I$	$-1.00247 + 2.85719I$	$-1.18117 - 7.51903I$
$u = 0.863631 - 0.008081I$ $a = 0.668878 + 0.492509I$ $b = 0.385328 - 1.024490I$	$-1.00247 - 2.85719I$	$-1.18117 + 7.51903I$
$u = 0.681454 + 1.055760I$ $a = 0.120812 + 0.262349I$ $b = 0.266053 - 0.121547I$	$2.40464 + 6.60583I$	0
$u = 0.681454 - 1.055760I$ $a = 0.120812 - 0.262349I$ $b = 0.266053 + 0.121547I$	$2.40464 - 6.60583I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.668016 + 0.132668I$ $a = 2.07679 - 1.43704I$ $b = 0.55122 - 1.51352I$	$-0.282269 + 0.067141I$	$-3.72609 - 3.28540I$
$u = -0.668016 - 0.132668I$ $a = 2.07679 + 1.43704I$ $b = 0.55122 + 1.51352I$	$-0.282269 - 0.067141I$	$-3.72609 + 3.28540I$
$u = -0.023048 + 1.365510I$ $a = -0.38400 - 1.87511I$ $b = 0.22263 + 1.67589I$	$-8.03047 + 4.15846I$	0
$u = -0.023048 - 1.365510I$ $a = -0.38400 + 1.87511I$ $b = 0.22263 - 1.67589I$	$-8.03047 - 4.15846I$	0
$u = -0.114821 + 0.599864I$ $a = 2.68162 + 4.45685I$ $b = -0.366474 - 1.006750I$	$0.67146 + 1.37994I$	$-4.76488 - 1.12257I$
$u = -0.114821 - 0.599864I$ $a = 2.68162 - 4.45685I$ $b = -0.366474 + 1.006750I$	$0.67146 - 1.37994I$	$-4.76488 + 1.12257I$
$u = -0.112394 + 1.389540I$ $a = -0.32079 - 1.75033I$ $b = 0.52928 + 2.75631I$	$-5.00017 - 2.00257I$	0
$u = -0.112394 - 1.389540I$ $a = -0.32079 + 1.75033I$ $b = 0.52928 - 2.75631I$	$-5.00017 + 2.00257I$	0
$u = -0.33097 + 1.38999I$ $a = 0.40326 + 1.52193I$ $b = 0.86712 - 2.24790I$	$-4.56947 - 3.99633I$	0
$u = -0.33097 - 1.38999I$ $a = 0.40326 - 1.52193I$ $b = 0.86712 + 2.24790I$	$-4.56947 + 3.99633I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.43559 + 0.20920I$ $a = 0.0826736 - 0.0873667I$ $b = -0.35430 + 1.77050I$	$-9.88679 - 7.22887I$	0
$u = 1.43559 - 0.20920I$ $a = 0.0826736 + 0.0873667I$ $b = -0.35430 - 1.77050I$	$-9.88679 + 7.22887I$	0
$u = -1.44123 + 0.24926I$ $a = 0.0867294 - 0.0859579I$ $b = -0.05866 + 1.66324I$	$-9.81126 - 1.05399I$	0
$u = -1.44123 - 0.24926I$ $a = 0.0867294 + 0.0859579I$ $b = -0.05866 - 1.66324I$	$-9.81126 + 1.05399I$	0
$u = -0.059330 + 0.523960I$ $a = 0.581860 - 0.155990I$ $b = 0.354786 - 0.661801I$	$-0.00303 - 1.48232I$	$-0.37531 + 3.95565I$
$u = -0.059330 - 0.523960I$ $a = 0.581860 + 0.155990I$ $b = 0.354786 + 0.661801I$	$-0.00303 + 1.48232I$	$-0.37531 - 3.95565I$
$u = -0.518539$ $a = 1.22775$ $b = 0.266871$	1.19409	8.46120
$u = 0.468629 + 0.218617I$ $a = 2.90732 - 0.59799I$ $b = -0.422461 + 0.238430I$	$-2.59187 - 0.05584I$	$-4.82458 - 1.57408I$
$u = 0.468629 - 0.218617I$ $a = 2.90732 + 0.59799I$ $b = -0.422461 - 0.238430I$	$-2.59187 + 0.05584I$	$-4.82458 + 1.57408I$
$u = -0.036031 + 0.497495I$ $a = 0.0857590 - 0.0907207I$ $b = -0.486106 + 1.121140I$	$-4.57386 - 4.46577I$	$-14.2933 + 6.3376I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.036031 - 0.497495I$ $a = 0.0857590 + 0.0907207I$ $b = -0.486106 - 1.121140I$	$-4.57386 + 4.46577I$	$-14.2933 - 6.3376I$
$u = -0.01432 + 1.50322I$ $a = 0.01812 - 1.61025I$ $b = -0.329831 + 1.321610I$	$-6.74889 - 1.48702I$	0
$u = -0.01432 - 1.50322I$ $a = 0.01812 + 1.61025I$ $b = -0.329831 - 1.321610I$	$-6.74889 + 1.48702I$	0
$u = 0.42976 + 1.47936I$ $a = -0.49516 + 1.50593I$ $b = -0.55785 - 1.32892I$	$-5.92831 + 7.90364I$	0
$u = 0.42976 - 1.47936I$ $a = -0.49516 - 1.50593I$ $b = -0.55785 + 1.32892I$	$-5.92831 - 7.90364I$	0
$u = -0.454217$ $a = 13.1649$ $b = 2.50456$	-0.417366	104.440
$u = 0.22265 + 1.54878I$ $a = -0.805531 - 0.171147I$ $b = -0.575158 + 0.178603I$	$-8.83417 + 3.29298I$	0
$u = 0.22265 - 1.54878I$ $a = -0.805531 + 0.171147I$ $b = -0.575158 - 0.178603I$	$-8.83417 - 3.29298I$	0
$u = 0.75835 + 1.48548I$ $a = 0.71873 - 1.30334I$ $b = 0.71630 + 1.88752I$	$-13.8837 + 14.9590I$	0
$u = 0.75835 - 1.48548I$ $a = 0.71873 + 1.30334I$ $b = 0.71630 - 1.88752I$	$-13.8837 - 14.9590I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.78780+1.48222I$ $a=-0.848946-0.878958I$ $b=-0.33270+1.50685I$	$-13.6512-6.7959I$	0
$u=-0.78780-1.48222I$ $a=-0.848946+0.878958I$ $b=-0.33270-1.50685I$	$-13.6512+6.7959I$	0
$u=-0.49918+1.64813I$ $a=\ \ 0.36892+1.38078I$ $b=\ \ 0.51136-1.96440I$	$-16.0716-8.0734I$	0
$u=-0.49918-1.64813I$ $a=\ \ 0.36892-1.38078I$ $b=\ \ 0.51136+1.96440I$	$-16.0716+8.0734I$	0
$u=\ \ 0.53098+1.64910I$ $a=-0.650566+1.090820I$ $b=-0.19927-1.71975I$	$-15.9425-0.1123I$	0
$u=\ \ 0.53098-1.64910I$ $a=-0.650566-1.090820I$ $b=-0.19927+1.71975I$	$-15.9425+0.1123I$	0

II. $\boldsymbol{I_2^u = \langle u^8 - 2u^7 + \cdots + b + 1,\ 3u^8 - 4u^7 + \cdots + a + 6,\ u^9 - u^8 + 2u^7 - u^6 + 3u^5 - u^4 + 2u^3 + u + 1\rangle}$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -3u^8 + 4u^7 - 8u^6 + 7u^5 - 13u^4 + 9u^3 - 11u^2 + 6u - 6 \\ -u^8 + 2u^7 - 3u^6 + 3u^5 - 4u^4 + 4u^3 - 3u^2 + 2u - 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^4 + u^2 + 1 \\ u^4 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^6 - u^4 - 2u^2 - 1 \\ -u^8 - 2u^6 - 2u^4 - 2u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -3u^8 + 4u^7 - 8u^6 + 7u^5 - 13u^4 + 9u^3 - 12u^2 + 6u - 7 \\ -u^8 + 2u^7 - 3u^6 + 3u^5 - 4u^4 + 4u^3 - 4u^2 + 2u - 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2 - 1 \\ -u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -3u^8 + 4u^7 - 8u^6 + 7u^5 - 13u^4 + 9u^3 - 11u^2 + 6u - 6 \\ -u^8 + 2u^7 - 3u^6 + 3u^5 - 4u^4 + 4u^3 - 3u^2 + 2u - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= -45u^8 + 63u^7 - 119u^6 + 104u^5 - 184u^4 + 133u^3 - 157u^2 + 83u - 85$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u-1)^9$
c_3, c_6	u^9
c_4	$(u+1)^9$
c_5	$u^9 - 3u^8 + 8u^7 - 13u^6 + 17u^5 - 17u^4 + 12u^3 - 6u^2 + u + 1$
c_7	$u^9 - u^8 + 2u^7 - u^6 + 3u^5 - u^4 + 2u^3 + u + 1$
c_8	$u^9 + 3u^8 + 8u^7 + 13u^6 + 17u^5 + 17u^4 + 12u^3 + 6u^2 + u - 1$
c_9	$u^9 - u^8 - 2u^7 + 3u^6 + u^5 - 3u^4 + 2u^3 - u + 1$
c_{10}	$u^9 + u^8 + 2u^7 + u^6 + 3u^5 + u^4 + 2u^3 + u - 1$
c_{11}	$u^9 + u^8 - 2u^7 - 3u^6 + u^5 + 3u^4 + 2u^3 - u - 1$
c_{12}	$u^9 - 5u^8 + 12u^7 - 15u^6 + 9u^5 + u^4 - 4u^3 + 2u^2 + u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^9$
c_3, c_6	y^9
c_5, c_8	$y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1$
c_7, c_{10}	$y^9 + 3y^8 + 8y^7 + 13y^6 + 17y^5 + 17y^4 + 12y^3 + 6y^2 + y - 1$
c_9, c_{11}	$y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1$
c_{12}	$y^9 - y^8 + 12y^7 - 7y^6 + 37y^5 + y^4 - 10y^2 + 5y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.140343+0.966856I$ $a=-0.920144+0.598375I$ $b=\ \ 1.004430-0.297869I$	$-3.42837-2.09337I$	$-5.34027+4.50528I$
$u=-0.140343-0.966856I$ $a=-0.920144-0.598375I$ $b=\ \ 1.004430+0.297869I$	$-3.42837+2.09337I$	$-5.34027-4.50528I$
$u=-0.628449+0.875112I$ $a=\ \ 0.590648+0.449402I$ $b=\ \ 0.275254-0.816341I$	$-1.02799-2.45442I$	$-2.30315+4.13179I$
$u=-0.628449-0.875112I$ $a=\ \ 0.590648-0.449402I$ $b=\ \ 0.275254+0.816341I$	$-1.02799+2.45442I$	$-2.30315-4.13179I$
$u=\ \ 0.796005+0.733148I$ $a=\ \ 0.719281+0.119276I$ $b=-0.070080+0.850995I$	$2.72642-1.33617I$	$1.00050+1.13735I$
$u=\ \ 0.796005-0.733148I$ $a=\ \ 0.719281-0.119276I$ $b=-0.070080-0.850995I$	$2.72642+1.33617I$	$1.00050-1.13735I$
$u=\ \ 0.728966+0.986295I$ $a=\ \ 0.365868-0.247975I$ $b=\ \ 0.195086+0.635552I$	$1.95319+7.08493I$	$-0.39190-10.48669I$
$u=\ \ 0.728966-0.986295I$ $a=\ \ 0.365868+0.247975I$ $b=\ \ 0.195086-0.635552I$	$1.95319-7.08493I$	$-0.39190+10.48669I$
$u=-0.512358$ $a=-14.5113$ $b=-3.80937$	-0.446489	-205.930

III.

$\boldsymbol{I_1^v = \langle a,\ -16v^4 + 47v^3 - 36v^2 + 29b + 104v + 5,\ v^5 - 3v^4 + 3v^3 - 8v^2 + v - 1\rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} v \\ 0 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0 \\ 0.551724v^4 - 1.62069v^3 + \cdots - 3.58621v - 0.172414 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 1 \\ -0.344828v^4 + 1.13793v^3 + \cdots + 3.24138v - 1.51724 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.344828v^4 + 1.13793v^3 + \cdots + 3.24138v - 0.517241 \\ -0.344828v^4 + 1.13793v^3 + \cdots + 3.24138v - 1.51724 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.655172v^4 - 1.86207v^3 + \cdots - 4.75862v + 0.482759 \\ v^4 - 3v^3 + 3v^2 - 8v + 1 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.655172v^4 + 1.86207v^3 + \cdots + 5.75862v - 0.482759 \\ -v^4 + 3v^3 - 3v^2 + 8v - 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.655172v^4 + 1.86207v^3 + \cdots + 4.75862v - 0.482759 \\ -0.137931v^4 + 0.655172v^3 + \cdots + 1.89655v - 2.20690 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.655172v^4 + 1.86207v^3 + \cdots + 4.75862v - 0.482759 \\ -v^4 + 3v^3 - 3v^2 + 8v - 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.551724v^4 - 1.62069v^3 + \cdots - 3.58621v - 0.172414 \\ 0.0344828v^4 - 0.413793v^3 + \cdots - 0.724138v + 1.55172 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{7}{29}v^4 - \frac{26}{29}v^3 + \frac{23}{29}v^2 - \frac{147}{29}v + \frac{257}{29}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^5 - 5u^4 + 8u^3 - 3u^2 - u - 1$
c_2	$u^5 + u^4 - 2u^3 - u^2 + u - 1$
c_3	$u^5 - u^4 + 2u^3 - u^2 + u - 1$
c_4	$u^5 - u^4 - 2u^3 + u^2 + u + 1$
c_5	$u^5 - 3u^4 + 4u^3 - u^2 - u + 1$
c_6	$u^5 + u^4 + 2u^3 + u^2 + u + 1$
c_7, c_{10}	u^5
c_8	$u^5 + 3u^4 + 4u^3 + u^2 - u - 1$
c_9	$(u + 1)^5$
c_{11}, c_{12}	$(u - 1)^5$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^5 - 9y^4 + 32y^3 - 35y^2 - 5y - 1$
c_2, c_4	$y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1$
c_3, c_6	$y^5 + 3y^4 + 4y^3 + y^2 - y - 1$
c_5, c_8	$y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1$
c_7, c_{10}	y^5
c_9, c_{11}, c_{12}	$(y-1)^5$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 0.01014 + 1.59703I$ $a = 0$ $b = 0.339110 + 0.822375I$	$1.31583 + 1.53058I$	$8.42731 - 4.45807I$
$v = 0.01014 - 1.59703I$ $a = 0$ $b = 0.339110 - 0.822375I$	$1.31583 - 1.53058I$	$8.42731 + 4.45807I$
$v = 0.043806 + 0.365575I$ $a = 0$ $b = -0.455697 - 1.200150I$	$-4.22763 + 4.40083I$	$8.55516 - 1.78781I$
$v = 0.043806 - 0.365575I$ $a = 0$ $b = -0.455697 + 1.200150I$	$-4.22763 - 4.40083I$	$8.55516 + 1.78781I$
$v = 2.89210$ $a = 0$ $b = -0.766826$	-0.756147	-3.96490

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^9)(u^5-5u^4+\cdots-u-1)(u^{46}+61u^{45}+\cdots+62504u+1)$
c_2	$((u-1)^9)(u^5+u^4+\cdots+u-1)(u^{46}-11u^{45}+\cdots+260u-1)$
c_3	$u^9(u^5-u^4+\cdots+u-1)(u^{46}+8u^{45}+\cdots+9216u+512)$
c_4	$((u+1)^9)(u^5-u^4+\cdots+u+1)(u^{46}-11u^{45}+\cdots+260u-1)$
c_5	$(u^5-3u^4+4u^3-u^2-u+1)$ $\cdot(u^9-3u^8+8u^7-13u^6+17u^5-17u^4+12u^3-6u^2+u+1)$ $\cdot(u^{46}-3u^{45}+\cdots+2u-1)$
c_6	$u^9(u^5+u^4+\cdots+u+1)(u^{46}+8u^{45}+\cdots+9216u+512)$
c_7	$u^5(u^9-u^8+2u^7-u^6+3u^5-u^4+2u^3+u+1)$ $\cdot(u^{46}+2u^{45}+\cdots-32u+32)$
c_8	$(u^5+3u^4+4u^3+u^2-u-1)$ $\cdot(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)$ $\cdot(u^{46}-3u^{45}+\cdots+2u-1)$
c_9	$(u+1)^5(u^9-u^8-2u^7+3u^6+u^5-3u^4+2u^3-u+1)$ $\cdot(u^{46}+7u^{45}+\cdots+4u+1)$
c_{10}	$u^5(u^9+u^8+2u^7+u^6+3u^5+u^4+2u^3+u-1)$ $\cdot(u^{46}+2u^{45}+\cdots-32u+32)$
c_{11}	$(u-1)^5(u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1)$ $\cdot(u^{46}+7u^{45}+\cdots+4u+1)$
c_{12}	$(u-1)^5(u^9-5u^8+12u^7-15u^6+9u^5+u^4-4u^3+2u^2+u-1)$ $\cdot(u^{46}-17u^{45}+\cdots-22u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^9(y^5-9y^4+32y^3-35y^2-5y-1)$ $\cdot(y^{46}-141y^{45}+\cdots-3903085204y+1)$
c_2, c_4	$((y-1)^9)(y^5-5y^4+\cdots-y-1)(y^{46}-61y^{45}+\cdots-62504y+1)$
c_3, c_6	$y^9(y^5+3y^4+4y^3+y^2-y-1)$ $\cdot(y^{46}+60y^{45}+\cdots-71827456y+262144)$
c_5, c_8	$(y^5-y^4+8y^3-3y^2+3y-1)$ $\cdot(y^9+7y^8+20y^7+25y^6+5y^5-15y^4+22y^2+13y-1)$ $\cdot(y^{46}-y^{45}+\cdots-32y+1)$
c_7, c_{10}	$y^5(y^9+3y^8+8y^7+13y^6+17y^5+17y^4+12y^3+6y^2+y-1)$ $\cdot(y^{46}+36y^{45}+\cdots+8704y+1024)$
c_9, c_{11}	$(y-1)^5(y^9-5y^8+12y^7-15y^6+9y^5+y^4-4y^3+2y^2+y-1)$ $\cdot(y^{46}-17y^{45}+\cdots-22y+1)$
c_{12}	$(y-1)^5(y^9-y^8+12y^7-7y^6+37y^5+y^4-10y^2+5y-1)$ $\cdot(y^{46}+31y^{45}+\cdots+246y+1)$