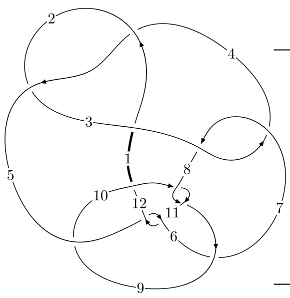
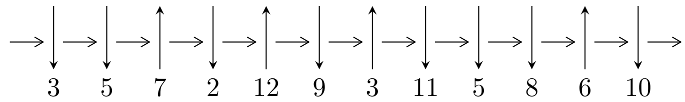
$12n_{0205}$ $(K12n_{0205})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 1.70976 \times 10^{62} u^{52} - 3.03954 \times 10^{60} u^{51} + \cdots + 8.90112 \times 10^{63} b - 1.06077 \times 10^{64}, \\
& - 1.10028 \times 10^{63} u^{52} - 1.18132 \times 10^{64} u^{51} + \cdots + 9.89014 \times 10^{62} a - 1.33065 \times 10^{64}, \\
& u^{53} + 11u^{52} + \cdots + 27u + 1 \rangle \\
I_2^u = \langle & a^6 + 2a^4 + 3a^2 + b + 2,\ a^9 - a^8 + 2a^7 - a^6 + 3a^5 - a^4 + 2a^3 + a + 1,\ u - 1 \rangle \\
I_3^u = \langle & u^5 + 4u^4 + 3u^3 - 2u^2 + 3b - 3u - 1,\ a,\ u^6 + u^5 - u^4 - 2u^3 + u + 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 68 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. $I_1^u = \langle 1.71 \times 10^{62} u^{52} - 3.04 \times 10^{60} u^{51} + \cdots + 8.90 \times 10^{63} b - 1.06 \times 10^{64},\ -1.10 \times 10^{63} u^{52} - 1.18 \times 10^{64} u^{51} + \cdots + 9.89 \times 10^{62} a - 1.33 \times 10^{64},\ u^{53} + 11u^{52} + \cdots + 27u + 1 \rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1.11250u^{52} + 11.9444u^{51} + \cdots + 116.277u + 13.4543 \\ -0.0192084u^{52} + 0.000341478u^{51} + \cdots + 15.5915u + 1.19173 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1.11250u^{52} + 11.9444u^{51} + \cdots + 116.277u + 13.4543 \\ -0.382334u^{52} - 3.37450u^{51} + \cdots + 8.79186u + 0.898684 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.851461u^{52} - 9.05934u^{51} + \cdots - 65.4023u - 7.59764 \\ 0.902652u^{52} + 8.13404u^{51} + \cdots + 10.0567u - 0.0126855 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.0355732u^{52} - 0.584596u^{51} + \cdots + 13.1513u - 0.387998 \\ 0.349645u^{52} + 3.23765u^{51} + \cdots + 1.90889u + 0.0261483 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.130529u^{52} + 1.68645u^{51} + \cdots + 35.4466u + 5.88903 \\ 0.154225u^{52} + 1.43278u^{51} + \cdots + 4.53267u + 0.381154 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.284754u^{52} - 3.11922u^{51} + \cdots - 39.9792u - 6.27018 \\ 0.427550u^{52} + 3.88507u^{51} + \cdots - 1.47440u - 0.445947 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.284754u^{52} + 3.11922u^{51} + \cdots + 39.9792u + 6.27018 \\ 0.154225u^{52} + 1.43278u^{51} + \cdots + 4.53267u + 0.381154 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.225150u^{52} - 2.33690u^{51} + \cdots - 27.9440u - 9.85542$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{53} + 63u^{52} + \cdots + 371u + 1$
c_2, c_4	$u^{53} - 11u^{52} + \cdots + 27u - 1$
c_3, c_7	$u^{53} - 2u^{52} + \cdots + 2560u + 512$
c_5, c_{11}	$u^{53} + 3u^{52} + \cdots + 3u + 1$
c_6	$9(9u^{53} - 30u^{52} + \cdots - 9820u - 5144)$
c_8, c_{10}	$u^{53} - 8u^{52} + \cdots + 936u - 81$
c_9	$u^{53} + 2u^{52} + \cdots + 22464u - 5184$
c_{12}	$9(9u^{53} - 6u^{52} + \cdots + 279223u - 329)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{53} - 135y^{52} + \cdots + 162995y - 1$
c_2, c_4	$y^{53} - 63y^{52} + \cdots + 371y - 1$
c_3, c_7	$y^{53} + 54y^{52} + \cdots + 6815744y - 262144$
c_5, c_{11}	$y^{53} + 37y^{52} + \cdots + 11y - 1$
c_6	$81(81y^{53} - 3132y^{52} + \cdots + 2.63839 \times 10^{8}y - 2.64607 \times 10^{7})$
c_8, c_{10}	$y^{53} - 54y^{52} + \cdots + 624672y - 6561$
c_9	$y^{53} - 36y^{52} + \cdots - 140341248y - 26873856$
c_{12}	$81(81y^{53} - 4590y^{52} + \cdots + 7.81268 \times 10^{10}y - 108241)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.740987 + 0.599213I$ $a = 1.57596 - 0.73751I$ $b = 0.321377 - 0.617776I$	$-4.33713 - 4.43867I$	$-10.24927 + 6.85756I$
$u = 0.740987 - 0.599213I$ $a = 1.57596 + 0.73751I$ $b = 0.321377 + 0.617776I$	$-4.33713 + 4.43867I$	$-10.24927 - 6.85756I$
$u = 1.029610 + 0.245825I$ $a = 0.125397 + 0.344874I$ $b = 0.310362 + 0.858643I$	$-2.07856 - 0.90512I$	0
$u = 1.029610 - 0.245825I$ $a = 0.125397 - 0.344874I$ $b = 0.310362 - 0.858643I$	$-2.07856 + 0.90512I$	0
$u = 1.014220 + 0.368097I$ $a = 0.17089 + 1.53157I$ $b = 1.88007 - 0.54448I$	$-7.18708 - 1.12498I$	$-14.8807 + 0.I$
$u = 1.014220 - 0.368097I$ $a = 0.17089 - 1.53157I$ $b = 1.88007 + 0.54448I$	$-7.18708 + 1.12498I$	$-14.8807 + 0.I$
$u = 1.14783$ $a = 0.526566$ $b = 2.18865$	-2.44483	0
$u = 0.822832 + 0.202810I$ $a = 0.184579 - 0.579850I$ $b = 0.34533 + 2.28724I$	$-3.14584 - 0.60875I$	$-6.43020 - 7.79756I$
$u = 0.822832 - 0.202810I$ $a = 0.184579 + 0.579850I$ $b = 0.34533 - 2.28724I$	$-3.14584 + 0.60875I$	$-6.43020 + 7.79756I$
$u = -0.724671 + 0.356426I$ $a = -0.056116 + 0.976114I$ $b = 0.178762 + 0.417119I$	$0.78284 - 1.50580I$	$1.85337 + 3.47450I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.724671 - 0.356426I$ $a = -0.056116 - 0.976114I$ $b = 0.178762 - 0.417119I$	$0.78284 + 1.50580I$	$1.85337 - 3.47450I$
$u = 1.229490 + 0.119531I$ $a = -1.077010 + 0.000602I$ $b = -2.50917 + 2.03905I$	$-5.64518 + 2.18249I$	0
$u = 1.229490 - 0.119531I$ $a = -1.077010 - 0.000602I$ $b = -2.50917 - 2.03905I$	$-5.64518 - 2.18249I$	0
$u = 0.578578 + 0.484586I$ $a = -1.018420 + 0.280436I$ $b = -0.415921 + 0.414378I$	$-0.90481 - 1.57510I$	$-3.08858 + 5.02134I$
$u = 0.578578 - 0.484586I$ $a = -1.018420 - 0.280436I$ $b = -0.415921 - 0.414378I$	$-0.90481 + 1.57510I$	$-3.08858 - 5.02134I$
$u = -0.708934 + 0.120407I$ $a = -0.92683 - 1.44462I$ $b = -0.469500 - 0.468379I$	$-4.72794 - 6.87040I$	$-1.05460 + 3.48446I$
$u = -0.708934 - 0.120407I$ $a = -0.92683 + 1.44462I$ $b = -0.469500 + 0.468379I$	$-4.72794 + 6.87040I$	$-1.05460 - 3.48446I$
$u = -1.188110 + 0.522041I$ $a = -0.065515 - 0.516096I$ $b = -0.181732 - 0.422617I$	$-1.55881 + 5.25423I$	0
$u = -1.188110 - 0.522041I$ $a = -0.065515 + 0.516096I$ $b = -0.181732 + 0.422617I$	$-1.55881 - 5.25423I$	0
$u = 0.713723 + 1.108540I$ $a = -1.145180 + 0.691529I$ $b = -1.004520 + 0.127758I$	$-11.4354 - 9.7069I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.713723 - 1.108540I$ $a = -1.145180 - 0.691529I$ $b = -1.004520 - 0.127758I$	$-11.4354 + 9.7069I$	0
$u = 0.645363 + 1.159150I$ $a = -0.411472 + 1.090720I$ $b = -0.475717 + 0.405091I$	$-11.21080 + 2.39200I$	0
$u = 0.645363 - 1.159150I$ $a = -0.411472 - 1.090720I$ $b = -0.475717 - 0.405091I$	$-11.21080 - 2.39200I$	0
$u = 0.536755 + 0.402568I$ $a = 0.923406 - 0.659788I$ $b = 0.89484 - 1.39101I$	$-3.70920 + 0.68240I$	$-10.13112 + 2.63548I$
$u = 0.536755 - 0.402568I$ $a = 0.923406 + 0.659788I$ $b = 0.89484 + 1.39101I$	$-3.70920 - 0.68240I$	$-10.13112 - 2.63548I$
$u = 0.709864 + 1.162520I$ $a = 0.713217 - 0.733177I$ $b = 0.685394 - 0.156529I$	$-6.83584 - 3.76717I$	0
$u = 0.709864 - 1.162520I$ $a = 0.713217 + 0.733177I$ $b = 0.685394 + 0.156529I$	$-6.83584 + 3.76717I$	0
$u = -0.190058 + 0.453543I$ $a = -1.217760 + 0.413382I$ $b = -0.101388 + 0.374695I$	$1.01456 - 1.24993I$	$3.91266 + 3.38096I$
$u = -0.190058 - 0.453543I$ $a = -1.217760 - 0.413382I$ $b = -0.101388 - 0.374695I$	$1.01456 + 1.24993I$	$3.91266 - 3.38096I$
$u = -1.63891 + 0.08655I$ $a = -0.523277 - 0.000961I$ $b = -2.42482 - 0.70129I$	$-11.54620 + 0.81534I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.63891 - 0.08655I$ $a = -0.523277 + 0.000961I$ $b = -2.42482 + 0.70129I$	$-11.54620 - 0.81534I$	0
$u = -1.65289 + 0.15939I$ $a = 0.875260 - 0.410425I$ $b = 2.21311 - 0.23469I$	$-8.77075 + 4.08365I$	0
$u = -1.65289 - 0.15939I$ $a = 0.875260 + 0.410425I$ $b = 2.21311 + 0.23469I$	$-8.77075 - 4.08365I$	0
$u = -1.70501 + 0.03615I$ $a = -0.395981 - 0.689977I$ $b = -1.41927 + 0.04910I$	$-12.33890 + 1.47775I$	0
$u = -1.70501 - 0.03615I$ $a = -0.395981 + 0.689977I$ $b = -1.41927 - 0.04910I$	$-12.33890 - 1.47775I$	0
$u = -1.70201 + 0.18739I$ $a = -1.42791 + 0.60902I$ $b = -2.95092 + 0.61814I$	$-12.9006 + 7.5876I$	0
$u = -1.70201 - 0.18739I$ $a = -1.42791 - 0.60902I$ $b = -2.95092 - 0.61814I$	$-12.9006 - 7.5876I$	0
$u = -0.276292 + 0.038780I$ $a = 3.14779 - 2.19159I$ $b = 0.509597 - 0.650771I$	$-1.03321 + 2.55519I$	$0.02559 - 3.47308I$
$u = -0.276292 - 0.038780I$ $a = 3.14779 + 2.19159I$ $b = 0.509597 + 0.650771I$	$-1.03321 - 2.55519I$	$0.02559 + 3.47308I$
$u = 1.73015 + 0.03085I$ $a = 0.952566 - 0.310448I$ $b = 2.31647 - 0.61550I$	$-13.7945 + 6.0358I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.73015 - 0.03085I$ $a = 0.952566 + 0.310448I$ $b = 2.31647 + 0.61550I$	$-13.7945 - 6.0358I$	0
$u = -1.69334 + 0.39921I$ $a = 1.073220 - 0.496311I$ $b = 2.64306 - 0.19760I$	$-19.2132 + 15.4269I$	0
$u = -1.69334 - 0.39921I$ $a = 1.073220 + 0.496311I$ $b = 2.64306 + 0.19760I$	$-19.2132 - 15.4269I$	0
$u = -1.70276 + 0.44597I$ $a = 0.904826 - 0.036221I$ $b = 1.90592 + 0.31921I$	$-18.7129 + 3.6964I$	0
$u = -1.70276 - 0.44597I$ $a = 0.904826 + 0.036221I$ $b = 1.90592 - 0.31921I$	$-18.7129 - 3.6964I$	0
$u = -1.71139 + 0.41302I$ $a = -0.918462 + 0.320773I$ $b = -2.22054 + 0.11225I$	$-14.6527 + 9.7412I$	0
$u = -1.71139 - 0.41302I$ $a = -0.918462 - 0.320773I$ $b = -2.22054 - 0.11225I$	$-14.6527 - 9.7412I$	0
$u = 1.76059$ $a = -0.828656$ $b = -2.05351$	-9.31076	0
$u = -1.76959 + 0.06263I$ $a = 1.07789 + 1.41573I$ $b = 1.99778 + 1.80741I$	$-17.5158 + 2.8823I$	0
$u = -1.76959 - 0.06263I$ $a = 1.07789 - 1.41573I$ $b = 1.99778 - 1.80741I$	$-17.5158 - 2.8823I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.016819+0.167581I$ $a=-4.99549-3.00427I$ $b=-1.226480+0.616758I$	$-4.36101-1.13066I$	$-3.77707+1.04050I$
$u=-0.016819-0.167581I$ $a=-4.99549+3.00427I$ $b=-1.226480-0.616758I$	$-4.36101+1.13066I$	$-3.77707-1.04050I$
$u=-0.0499663$ $a=\quad 9.21094$ $b=\quad 0.593977$	-1.26040	-8.84480

II.

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4a^8+8a^7-13a^6+9a^5-17a^4+16a^3-13a^2+4a-16$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u-1)^9$
c_3, c_7	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_6	$u^9 - 5u^8 + 12u^7 - 15u^6 + 9u^5 + u^4 - 4u^3 + 2u^2 + u - 1$
c_8	$u^9 + u^8 - 2u^7 - 3u^6 + u^5 + 3u^4 + 2u^3 - u - 1$
c_9, c_{12}	$u^9 - u^8 + 2u^7 - u^6 + 3u^5 - u^4 + 2u^3 + u + 1$
c_{10}	$u^9 - u^8 - 2u^7 + 3u^6 + u^5 - 3u^4 + 2u^3 - u + 1$
c_{11}	$u^9 - 3u^8 + 8u^7 - 13u^6 + 17u^5 - 17u^4 + 12u^3 - 6u^2 + u + 1$

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -0.140343 + 0.966856I$ $b = -0.218072 + 0.482572I$	$0.13850 + 2.09337I$	$-4.94317 - 6.62869I$
$u = 1.00000$ $a = -0.140343 - 0.966856I$ $b = -0.218072 - 0.482572I$	$0.13850 - 2.09337I$	$-4.94317 + 6.62869I$
$u = 1.00000$ $a = -0.628449 + 0.875112I$ $b = -0.037875 + 0.791187I$	$-2.26187 + 2.45442I$	$-8.11682 - 3.00529I$
$u = 1.00000$ $a = -0.628449 - 0.875112I$ $b = -0.037875 - 0.791187I$	$-2.26187 - 2.45442I$	$-8.11682 + 3.00529I$
$u = 1.00000$ $a = 0.796005 + 0.733148I$ $b = 0.80973 - 2.39258I$	$-6.01628 + 1.33617I$	$-10.09079 + 3.07774I$
$u = 1.00000$ $a = 0.796005 - 0.733148I$ $b = 0.80973 + 2.39258I$	$-6.01628 - 1.33617I$	$-10.09079 - 3.07774I$
$u = 1.00000$ $a = 0.728966 + 0.986295I$ $b = 0.417942 + 0.357732I$	$-5.24306 - 7.08493I$	$-14.1334 + 8.8789I$
$u = 1.00000$ $a = 0.728966 - 0.986295I$ $b = 0.417942 - 0.357732I$	$-5.24306 + 7.08493I$	$-14.1334 - 8.8789I$
$u = 1.00000$ $a = -0.512358$ $b = -2.94345$	-2.84338	-25.4320

III. $I_3^u = \langle u^5+4u^4+3u^3-2u^2+3b-3u-1,\ a,\ u^6+u^5-u^4-2u^3+u+1\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2+1 \\ -u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u \\ -u^3+u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ -\frac{1}{3}u^5-\frac{4}{3}u^4+\cdots+u+\frac{1}{3} \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ -\frac{1}{3}u^5-\frac{4}{3}u^4+\cdots+u+\frac{1}{3} \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^2+1 \\ -\frac{7}{9}u^5-\frac{14}{9}u^4+\cdots+\frac{11}{9}u+\frac{5}{9} \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^5-2u^3+u \\ \frac{2}{3}u^5-\frac{4}{9}u^4+\cdots+\frac{8}{9}u+\frac{1}{9} \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^5-2u^3+u \\ u^5-u^3+u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -2u^5+3u^3-2u \\ -\frac{4}{3}u^5-\frac{4}{3}u^4+\frac{2}{3}u^2+\frac{1}{3} \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 2u^5-3u^3+2u \\ u^5-u^3+u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{1}{9}u^5+\frac{47}{9}u^4-\frac{4}{3}u^3-\frac{19}{9}u^2-\frac{20}{3}u-\frac{80}{9}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^6 - 3u^5 + 5u^4 - 4u^3 + 2u^2 - u + 1$
c_2, c_7	$u^6 + u^5 - u^4 - 2u^3 + u + 1$
c_3, c_4	$u^6 - u^5 - u^4 + 2u^3 - u + 1$
c_6	$9(9u^6 - 12u^5 + 2u^4 + u^3 + 4u^2 - 4u + 1)$
c_8	$(u - 1)^6$
c_9	u^6
c_{10}	$(u + 1)^6$
c_{11}	$u^6 + 3u^5 + 5u^4 + 4u^3 + 2u^2 + u + 1$
c_{12}	$9(9u^6 + 30u^5 + 41u^4 + 30u^3 + 15u^2 + 5u + 1)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_{11}	$y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1$
c_2, c_3, c_4 c_7	$y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1$
c_6	$81(81y^6 - 108y^5 + 100y^4 - 63y^3 + 28y^2 - 8y + 1)$
c_8, c_{10}	$(y-1)^6$
c_9	y^6
c_{12}	$81(81y^6 - 162y^5 + 151y^4 + 48y^3 + 7y^2 + 5y + 1)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.002190 + 0.295542I$ $a = 0$ $b = 0.49282 - 2.03411I$	$-3.53554 - 0.92430I$	$-15.9578 + 1.1630I$
$u = 1.002190 - 0.295542I$ $a = 0$ $b = 0.49282 + 2.03411I$	$-3.53554 + 0.92430I$	$-15.9578 - 1.1630I$
$u = -0.428243 + 0.664531I$ $a = 0$ $b = -0.384438 - 0.080017I$	$0.245672 - 0.924305I$	$-7.47464 - 1.75692I$
$u = -0.428243 - 0.664531I$ $a = 0$ $b = -0.384438 + 0.080017I$	$0.245672 + 0.924305I$	$-7.47464 + 1.75692I$
$u = -1.073950 + 0.558752I$ $a = 0$ $b = 0.391622 + 0.105509I$	$-1.64493 + 5.69302I$	$-7.2342 - 14.2758I$
$u = -1.073950 - 0.558752I$ $a = 0$ $b = 0.391622 - 0.105509I$	$-1.64493 - 5.69302I$	$-7.2342 + 14.2758I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^9(u^6-3u^5+5u^4-4u^3+2u^2-u+1)$ $\cdot(u^{53}+63u^{52}+\cdots+371u+1)$
c_2	$((u-1)^9)(u^6+u^5+\cdots+u+1)(u^{53}-11u^{52}+\cdots+27u-1)$
c_3	$u^9(u^6-u^5+\cdots-u+1)(u^{53}-2u^{52}+\cdots+2560u+512)$
c_4	$((u+1)^9)(u^6-u^5+\cdots-u+1)(u^{53}-11u^{52}+\cdots+27u-1)$
c_5	$(u^6-3u^5+5u^4-4u^3+2u^2-u+1)$ $\cdot(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)$ $\cdot(u^{53}+3u^{52}+\cdots+3u+1)$
c_6	$81(9u^6-12u^5+2u^4+u^3+4u^2-4u+1)$ $\cdot(u^9-5u^8+12u^7-15u^6+9u^5+u^4-4u^3+2u^2+u-1)$ $\cdot(9u^{53}-30u^{52}+\cdots-9820u-5144)$
c_7	$u^9(u^6+u^5+\cdots+u+1)(u^{53}-2u^{52}+\cdots+2560u+512)$
c_8	$(u-1)^6(u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1)$ $\cdot(u^{53}-8u^{52}+\cdots+936u-81)$
c_9	$u^6(u^9-u^8+2u^7-u^6+3u^5-u^4+2u^3+u+1)$ $\cdot(u^{53}+2u^{52}+\cdots+22464u-5184)$
c_{10}	$(u+1)^6(u^9-u^8-2u^7+3u^6+u^5-3u^4+2u^3-u+1)$ $\cdot(u^{53}-8u^{52}+\cdots+936u-81)$
c_{11}	$(u^6+3u^5+5u^4+4u^3+2u^2+u+1)$ $\cdot(u^9-3u^8+8u^7-13u^6+17u^5-17u^4+12u^3-6u^2+u+1)$ $\cdot(u^{53}+3u^{52}+\cdots+3u+1)$
c_{12}	$81(9u^6+30u^5+41u^4+30u^3+15u^2+5u+1)$ $\cdot(u^9-u^8+2u^7-u^6+3u^5-u^4+2u^3+u+1)$ $\cdot(9u^{53}-6u^{52}+\cdots+279223u-329)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^9(y^6+y^5+5y^4+6y^2+3y+1)$ $\cdot\,(y^{53}-135y^{52}+\cdots+162995y-1)$
c_2, c_4	$(y-1)^9(y^6-3y^5+5y^4-4y^3+2y^2-y+1)$ $\cdot\,(y^{53}-63y^{52}+\cdots+371y-1)$
c_3, c_7	$y^9(y^6-3y^5+5y^4-4y^3+2y^2-y+1)$ $\cdot\,(y^{53}+54y^{52}+\cdots+6815744y-262144)$
c_5, c_{11}	$(y^6+y^5+5y^4+6y^2+3y+1)$ $\cdot\,(y^9+7y^8+20y^7+25y^6+5y^5-15y^4+22y^2+13y-1)$ $\cdot\,(y^{53}+37y^{52}+\cdots+11y-1)$
c_6	$6561(81y^6-108y^5+100y^4-63y^3+28y^2-8y+1)$ $\cdot\,(y^9-y^8+12y^7-7y^6+37y^5+y^4-10y^2+5y-1)$ $\cdot\,(81y^{53}-3132y^{52}+\cdots+263838736y-26460736)$
c_8, c_{10}	$(y-1)^6(y^9-5y^8+12y^7-15y^6+9y^5+y^4-4y^3+2y^2+y-1)$ $\cdot\,(y^{53}-54y^{52}+\cdots+624672y-6561)$
c_9	$y^6(y^9+3y^8+8y^7+13y^6+17y^5+17y^4+12y^3+6y^2+y-1)$ $\cdot\,(y^{53}-36y^{52}+\cdots-140341248y-26873856)$
c_{12}	$6561(81y^6-162y^5+151y^4+48y^3+7y^2+5y+1)$ $\cdot\,(y^9+3y^8+8y^7+13y^6+17y^5+17y^4+12y^3+6y^2+y-1)$ $\cdot\,(81y^{53}-4590y^{52}+\cdots+78126767425y-108241)$