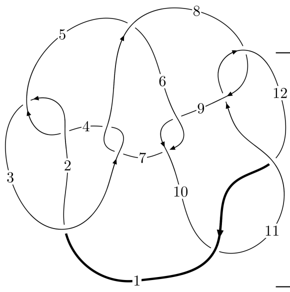
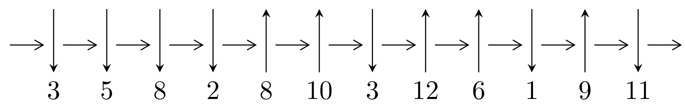
$12n_{0069}$ ($K12n_{0069}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle &-1.25022 \times 10^{15} u^{50} + 6.32707 \times 10^{15} u^{49} + \cdots + 5.27740 \times 10^{14} b + 1.09741 \times 10^{15}, \\
&- 315570811462394 u^{50} + 885003680032642 u^{49} + \cdots + 263870210392814 a - 2615309819180911, \\
&u^{51} - 5u^{50} + \cdots + 12u + 1 \rangle \\
I_2^u = \langle &-u^6 + u^5 - u^4 - u^2 + b,\ -u^4 + u^3 - u^2 + a - 1,\ u^9 - u^8 + 2u^7 - u^6 + 3u^5 - u^4 + 2u^3 + u + 1 \rangle \\
I_3^u = \langle &-a^2 u - au + b + u,\ a^3 - a^2 u + 2a^2 - au - a + u - 2,\ u^2 + u + 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 66 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. $I^u_1 = \langle -1.25\times10^{15}u^{50} + 6.33\times10^{15}u^{49} + \cdots + 5.28\times10^{14}b + 1.10\times10^{15},\ -3.16\times10^{14}u^{50} + 8.85\times10^{14}u^{49} + \cdots + 2.64\times10^{14}a - 2.62\times10^{15},\ u^{51} - 5u^{50} + \cdots + 12u + 1\rangle$

(i) Arc colorings

$$a_9 = \begin{pmatrix}1\\0\end{pmatrix}$$

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

$$a_3 = \begin{pmatrix}1.19593u^{50} - 3.35394u^{49} + \cdots + 22.7516u + 9.91135\\2.36901u^{50} - 11.9890u^{49} + \cdots - 33.0652u - 2.07945\end{pmatrix}$$

$$a_8 = \begin{pmatrix}1\\u^2\end{pmatrix}$$

$$a_4 = \begin{pmatrix}2.03208u^{50} - 6.11447u^{49} + \cdots + 23.1122u + 9.36508\\3.57786u^{50} - 18.1788u^{49} + \cdots - 50.9440u - 3.49968\end{pmatrix}$$

$$a_7 = \begin{pmatrix}-0.655866u^{50} + 0.100505u^{49} + \cdots - 30.5833u - 5.33675\\-2.04168u^{50} + 11.1347u^{49} + \cdots + 35.7500u + 2.53294\end{pmatrix}$$

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

$$a_1 = \begin{pmatrix}-u^3\\u^3 + u\end{pmatrix}$$

$$a_2 = \begin{pmatrix}2.38515u^{50} - 7.53764u^{49} + \cdots + 6.70994u + 6.22567\\4.11391u^{50} - 20.5592u^{49} + \cdots - 49.6817u - 3.68437\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-0.280392u^{50} - 0.591852u^{49} + \cdots - 1.39584u + 2.65716\\-2.25255u^{50} + 11.2149u^{49} + \cdots + 29.5667u + 2.69754\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-u^5 - u\\u^5 + u^3 + u\end{pmatrix}$$

$$a_6 = \begin{pmatrix}0.694241u^{50} - 0.897617u^{49} + \cdots - 3.96472u - 3.36089\\2.79370u^{50} - 14.0251u^{49} + \cdots - 36.9379u - 3.27732\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -\frac{255965214862211}{131935105196407}u^{50} + \frac{1522307809078135}{263870210392814}u^{49} + \cdots - \frac{27473893946107\,87}{131935105196407}u - \frac{1408076674646089}{131935105196407}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{51} + 10u^{50} + \cdots - 5u + 1$
c_2, c_4	$u^{51} - 12u^{50} + \cdots - 9u + 1$
c_3, c_7	$u^{51} - 3u^{50} + \cdots - 512u + 512$
c_5	$u^{51} + 4u^{50} + \cdots - u + 1$
c_6, c_9	$u^{51} - 2u^{50} + \cdots + 32u + 64$
c_8, c_{11}	$u^{51} + 5u^{50} + \cdots + 12u - 1$
c_{10}, c_{12}	$u^{51} + 15u^{50} + \cdots + 132u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{51} + 74y^{50} + \cdots - 5y - 1$
c_2, c_4	$y^{51} - 10y^{50} + \cdots - 5y - 1$
c_3, c_7	$y^{51} + 63y^{50} + \cdots - 1310720y - 262144$
c_5	$y^{51} - 66y^{50} + \cdots + 55y - 1$
c_6, c_9	$y^{51} - 40y^{50} + \cdots + 33792y - 4096$
c_8, c_{11}	$y^{51} + 15y^{50} + \cdots + 132y - 1$
c_{10}, c_{12}	$y^{51} + 47y^{50} + \cdots + 21000y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.536812 + 0.848543I$ $a = -3.28628 - 1.11420I$ $b = 0.02773 + 3.59095I$	$-1.34634 - 2.15686I$	$-38.8808 - 5.4252I$
$u = -0.536812 - 0.848543I$ $a = -3.28628 + 1.11420I$ $b = 0.02773 - 3.59095I$	$-1.34634 + 2.15686I$	$-38.8808 + 5.4252I$
$u = -0.094060 + 1.010250I$ $a = -0.112437 + 0.884543I$ $b = 0.240148 - 0.241280I$	$-2.30980 - 2.34904I$	$-1.63391 + 4.30826I$
$u = -0.094060 - 1.010250I$ $a = -0.112437 - 0.884543I$ $b = 0.240148 + 0.241280I$	$-2.30980 + 2.34904I$	$-1.63391 - 4.30826I$
$u = 0.742640 + 0.708697I$ $a = -0.254347 - 0.182338I$ $b = 0.276012 + 0.545830I$	$3.40321 - 2.16441I$	$5.02879 + 4.36220I$
$u = 0.742640 - 0.708697I$ $a = -0.254347 + 0.182338I$ $b = 0.276012 - 0.545830I$	$3.40321 + 2.16441I$	$5.02879 - 4.36220I$
$u = -0.671229 + 0.780928I$ $a = -0.409812 - 0.918047I$ $b = -0.370682 + 1.062140I$	$1.10678 - 2.18307I$	$1.75585 + 4.26435I$
$u = -0.671229 - 0.780928I$ $a = -0.409812 + 0.918047I$ $b = -0.370682 - 1.062140I$	$1.10678 + 2.18307I$	$1.75585 - 4.26435I$
$u = -0.343157 + 0.972562I$ $a = -1.52133 + 0.33833I$ $b = 0.746603 + 0.561119I$	$-0.84537 - 2.80643I$	$0.19319 + 7.33231I$
$u = -0.343157 - 0.972562I$ $a = -1.52133 - 0.33833I$ $b = 0.746603 - 0.561119I$	$-0.84537 + 2.80643I$	$0.19319 - 7.33231I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.906899+0.049738I$ $a=-0.05164+1.55010I$ $b=-0.207366-0.576620I$	$10.08960-3.82704I$	$3.71077+2.41179I$
$u=-0.906899-0.049738I$ $a=-0.05164-1.55010I$ $b=-0.207366+0.576620I$	$10.08960+3.82704I$	$3.71077-2.41179I$
$u=-0.634734+0.940518I$ $a=-1.031740-0.008845I$ $b=\ \ 0.734442+0.646858I$	$0.59171-2.88116I$	$1.02571+2.36792I$
$u=-0.634734-0.940518I$ $a=-1.031740+0.008845I$ $b=\ \ 0.734442-0.646858I$	$0.59171+2.88116I$	$1.02571-2.36792I$
$u=-0.231781+0.820128I$ $a=\ \ 1.19571+1.76809I$ $b=\ \ 0.08039-2.15413I$	$-2.70466-1.62087I$	$-0.49766+1.58102I$
$u=-0.231781-0.820128I$ $a=\ \ 1.19571-1.76809I$ $b=\ \ 0.08039+2.15413I$	$-2.70466+1.62087I$	$-0.49766-1.58102I$
$u=\ \ 0.281941+0.765767I$ $a=\ \ 2.01085+0.32244I$ $b=-0.827511-0.669898I$	$2.53081+4.23664I$	$-4.52353+0.13902I$
$u=\ \ 0.281941-0.765767I$ $a=\ \ 2.01085-0.32244I$ $b=-0.827511+0.669898I$	$2.53081-4.23664I$	$-4.52353-0.13902I$
$u=\ \ 0.946253+0.718970I$ $a=\ \ 0.29613+1.52046I$ $b=-2.57630-0.83741I$	$14.2145-8.1932I$	$2.56257+3.05589I$
$u=\ \ 0.946253-0.718970I$ $a=\ \ 0.29613-1.52046I$ $b=-2.57630+0.83741I$	$14.2145+8.1932I$	$2.56257-3.05589I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.818205 + 0.870861I$ $a = 0.71161 + 1.65346I$ $b = -1.57668 - 0.05628I$	$3.54064 + 1.51067I$	$0. - 2.09785I$
$u = 0.818205 - 0.870861I$ $a = 0.71161 - 1.65346I$ $b = -1.57668 + 0.05628I$	$3.54064 - 1.51067I$	$0. + 2.09785I$
$u = 0.869595 + 0.828375I$ $a = 0.627708 + 0.017566I$ $b = -1.261280 + 0.334121I$	$7.00223 - 0.65691I$	$3.27323 + 0.I$
$u = 0.869595 - 0.828375I$ $a = 0.627708 - 0.017566I$ $b = -1.261280 - 0.334121I$	$7.00223 + 0.65691I$	$3.27323 + 0.I$
$u = 0.703781 + 0.984612I$ $a = 0.766481 + 0.030963I$ $b = -0.309574 + 0.323070I$	$2.57944 + 7.69347I$	$4.07652 - 9.82403I$
$u = 0.703781 - 0.984612I$ $a = 0.766481 - 0.030963I$ $b = -0.309574 - 0.323070I$	$2.57944 - 7.69347I$	$4.07652 + 9.82403I$
$u = -0.839716 + 0.871954I$ $a = -1.06327 + 2.00567I$ $b = 3.24142 - 0.39313I$	$9.25314 + 0.69544I$	0
$u = -0.839716 - 0.871954I$ $a = -1.06327 - 2.00567I$ $b = 3.24142 + 0.39313I$	$9.25314 - 0.69544I$	0
$u = -0.277519 + 1.189370I$ $a = -1.44184 - 0.41933I$ $b = 1.239660 - 0.206290I$	$5.79395 - 7.83565I$	$0. + 5.73327I$
$u = -0.277519 - 1.189370I$ $a = -1.44184 + 0.41933I$ $b = 1.239660 + 0.206290I$	$5.79395 + 7.83565I$	$0. - 5.73327I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.803600 + 0.919882I$ $a = -0.473301 - 0.798618I$ $b = 1.99513 + 0.47998I$	$3.38835 + 4.55859I$	$0. - 3.21833I$
$u = 0.803600 - 0.919882I$ $a = -0.473301 + 0.798618I$ $b = 1.99513 - 0.47998I$	$3.38835 - 4.55859I$	$0. + 3.21833I$
$u = 0.951705 + 0.774303I$ $a = -0.44896 - 1.74202I$ $b = 2.48425 + 0.81897I$	$15.3068 - 0.2972I$	0
$u = 0.951705 - 0.774303I$ $a = -0.44896 + 1.74202I$ $b = 2.48425 - 0.81897I$	$15.3068 + 0.2972I$	0
$u = -0.348613 + 1.179410I$ $a = 0.874337 + 0.615537I$ $b = -0.753430 + 0.266431I$	$6.24476 - 0.53865I$	0
$u = -0.348613 - 1.179410I$ $a = 0.874337 - 0.615537I$ $b = -0.753430 - 0.266431I$	$6.24476 + 0.53865I$	0
$u = -0.817892 + 0.928643I$ $a = 1.28285 - 2.22579I$ $b = -3.27673 + 0.29519I$	$9.07395 - 6.87436I$	$0. + 4.69588I$
$u = -0.817892 - 0.928643I$ $a = 1.28285 + 2.22579I$ $b = -3.27673 - 0.29519I$	$9.07395 + 6.87436I$	$0. - 4.69588I$
$u = 0.815253 + 0.972044I$ $a = -0.129107 - 1.389170I$ $b = 0.894314 + 0.620552I$	$6.55249 + 6.91504I$	0
$u = 0.815253 - 0.972044I$ $a = -0.129107 + 1.389170I$ $b = 0.894314 - 0.620552I$	$6.55249 - 6.91504I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.382213 + 0.598227I$ $a = -1.50501 - 0.47756I$ $b = 0.588819 + 0.737449I$	$3.06808 - 1.61207I$	$-0.16491 + 5.64429I$
$u = 0.382213 - 0.598227I$ $a = -1.50501 + 0.47756I$ $b = 0.588819 - 0.737449I$	$3.06808 + 1.61207I$	$-0.16491 - 5.64429I$
$u = 0.793119 + 1.061710I$ $a = -1.78595 - 1.61228I$ $b = 2.94405 - 0.44989I$	$13.1325 + 14.5878I$	0
$u = 0.793119 - 1.061710I$ $a = -1.78595 + 1.61228I$ $b = 2.94405 + 0.44989I$	$13.1325 - 14.5878I$	0
$u = 0.827403 + 1.041820I$ $a = 1.65771 + 1.36481I$ $b = -2.86877 + 0.33442I$	$14.4581 + 6.8314I$	0
$u = 0.827403 - 1.041820I$ $a = 1.65771 - 1.36481I$ $b = -2.86877 - 0.33442I$	$14.4581 - 6.8314I$	0
$u = -0.105235 + 0.624758I$ $a = 1.54589 + 1.13818I$ $b = 0.324601 - 0.482306I$	$-1.65146 - 0.02846I$	$-5.98427 + 0.19920I$
$u = -0.105235 - 0.624758I$ $a = 1.54589 - 1.13818I$ $b = 0.324601 + 0.482306I$	$-1.65146 + 0.02846I$	$-5.98427 - 0.19920I$
$u = -0.586526 + 0.208462I$ $a = -0.208700 - 0.246043I$ $b = -0.565071 + 0.589283I$	$1.50163 - 0.56025I$	$5.46794 + 1.34072I$
$u = -0.586526 - 0.208462I$ $a = -0.208700 + 0.246043I$ $b = -0.565071 - 0.589283I$	$1.50163 + 0.56025I$	$5.46794 - 1.34072I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.0830715$ $a = \quad 8.50895$ $b = \quad 0.551653$	-1.20993	-9.33730

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 2u^8 - 7u^7 + 8u^6 - 8u^5 + 8u^4 - 12u^3 + 6u^2 - 2u - 2$

(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	$u^9+5u^8+12u^7+15u^6+9u^5-u^4-4u^3-2u^2+u+1$
c_6	$u^9-u^8-2u^7+3u^6+u^5-3u^4+2u^3-u+1$
c_8	$u^9-u^8+2u^7-u^6+3u^5-u^4+2u^3+u+1$
c_9	$u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1$
c_{10}	$u^9-3u^8+8u^7-13u^6+17u^5-17u^4+12u^3-6u^2+u+1$
c_{11}	$u^9+u^8+2u^7+u^6+3u^5+u^4+2u^3+u-1$
c_{12}	$u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1$

(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	$y^9 - y^8 + 12y^7 - 7y^6 + 37y^5 + y^4 - 10y^2 + 5y - 1$
c_6, c_9	$y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1$
c_8, c_{11}	$y^9 + 3y^8 + 8y^7 + 13y^6 + 17y^5 + 17y^4 + 12y^3 + 6y^2 + y - 1$
c_{10}, c_{12}	$y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.140343 + 0.966856I$ $a = 0.457852 + 1.072010I$ $b = -0.128062 - 1.105260I$	$-3.42837 - 2.09337I$	$-9.96342 + 4.61282I$
$u = -0.140343 - 0.966856I$ $a = 0.457852 - 1.072010I$ $b = -0.128062 + 1.105260I$	$-3.42837 + 2.09337I$	$-9.96342 - 4.61282I$
$u = -0.628449 + 0.875112I$ $a = -1.63880 - 0.65075I$ $b = -0.10799 + 2.04391I$	$-1.02799 - 2.45442I$	$-3.17587 + 4.82524I$
$u = -0.628449 - 0.875112I$ $a = -1.63880 + 0.65075I$ $b = -0.10799 - 2.04391I$	$-1.02799 + 2.45442I$	$-3.17587 - 4.82524I$
$u = 0.796005 + 0.733148I$ $a = 0.522253 + 0.392004I$ $b = -0.407341 + 0.647242I$	$2.72642 - 1.33617I$	$0.058077 - 1.140630I$
$u = 0.796005 - 0.733148I$ $a = 0.522253 - 0.392004I$ $b = -0.407341 - 0.647242I$	$2.72642 + 1.33617I$	$0.058077 + 1.140630I$
$u = 0.728966 + 0.986295I$ $a = 0.425734 - 0.444312I$ $b = 0.450985 + 0.808297I$	$1.95319 + 7.08493I$	$-2.55209 - 3.65320I$
$u = 0.728966 - 0.986295I$ $a = 0.425734 + 0.444312I$ $b = 0.450985 - 0.808297I$	$1.95319 - 7.08493I$	$-2.55209 + 3.65320I$
$u = -0.512358$ $a = 1.46592$ $b = 0.384820$	-0.446489	3.26660

III. $\boldsymbol{I_3^u = \langle -a^2u - au + b + u,\ a^3 - a^2u + 2a^2 - au - a + u - 2,\ u^2 + u + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -8a^2u - 4a^2 - 6au - 7a + 16u + 9$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = 0.901916 + 0.094973I$ $b = -0.583789 + 0.478572I$	$3.02413 + 0.79824I$	$-0.92725 + 3.21674I$
$u = -0.500000 + 0.866025I$ $a = -1.362120 + 0.277556I$ $b = 0.706350 - 0.266290I$	$3.02413 - 4.85801I$	$2.65209 + 7.50333I$
$u = -0.500000 + 0.866025I$ $a = -2.03980 + 0.49350I$ $b = 0.87744 + 1.51977I$	$-1.11345 - 2.02988I$	$-2.22484 - 4.65789I$
$u = -0.500000 - 0.866025I$ $a = 0.901916 - 0.094973I$ $b = -0.583789 - 0.478572I$	$3.02413 - 0.79824I$	$-0.92725 - 3.21674I$
$u = -0.500000 - 0.866025I$ $a = -1.362120 - 0.277556I$ $b = 0.706350 + 0.266290I$	$3.02413 + 4.85801I$	$2.65209 - 7.50333I$
$u = -0.500000 - 0.866025I$ $a = -2.03980 - 0.49350I$ $b = 0.87744 - 1.51977I$	$-1.11345 + 2.02988I$	$-2.22484 + 4.65789I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^9)(u^3-u^2+2u-1)^2(u^{51}+10u^{50}+\cdots-5u+1)$
c_2	$((u-1)^9)(u^3+u^2-1)^2(u^{51}-12u^{50}+\cdots-9u+1)$
c_3	$u^9(u^3-u^2+2u-1)^2(u^{51}-3u^{50}+\cdots-512u+512)$
c_4	$((u+1)^9)(u^3-u^2+1)^2(u^{51}-12u^{50}+\cdots-9u+1)$
c_5	$(u^3+3u^2+2u-1)^2$ $\cdot(u^9+5u^8+12u^7+15u^6+9u^5-u^4-4u^3-2u^2+u+1)$ $\cdot(u^{51}+4u^{50}+\cdots-u+1)$
c_6	$u^6(u^9-u^8-2u^7+3u^6+u^5-3u^4+2u^3-u+1)$ $\cdot(u^{51}-2u^{50}+\cdots+32u+64)$
c_7	$u^9(u^3+u^2+2u+1)^2(u^{51}-3u^{50}+\cdots-512u+512)$
c_8	$(u^2+u+1)^3(u^9-u^8+2u^7-u^6+3u^5-u^4+2u^3+u+1)$ $\cdot(u^{51}+5u^{50}+\cdots+12u-1)$
c_9	$u^6(u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1)$ $\cdot(u^{51}-2u^{50}+\cdots+32u+64)$
c_{10}	$(u^2-u+1)^3$ $\cdot(u^9-3u^8+8u^7-13u^6+17u^5-17u^4+12u^3-6u^2+u+1)$ $\cdot(u^{51}+15u^{50}+\cdots+132u-1)$
c_{11}	$(u^2-u+1)^3(u^9+u^8+2u^7+u^6+3u^5+u^4+2u^3+u-1)$ $\cdot(u^{51}+5u^{50}+\cdots+12u-1)$
c_{12}	$(u^2+u+1)^3$ $\cdot(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)$ $\cdot(u^{51}+15u^{50}+\cdots+132u-1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^9)(y^3+3y^2+2y-1)^2(y^{51}+74y^{50}+\cdots-5y-1)$
c_2, c_4	$((y-1)^9)(y^3-y^2+2y-1)^2(y^{51}-10y^{50}+\cdots-5y-1)$
c_3, c_7	$y^9(y^3+3y^2+2y-1)^2(y^{51}+63y^{50}+\cdots-1310720y-262144)$
c_5	$(y^3-5y^2+10y-1)^2$ $\cdot(y^9-y^8+12y^7-7y^6+37y^5+y^4-10y^2+5y-1)$ $\cdot(y^{51}-66y^{50}+\cdots+55y-1)$
c_6, c_9	$y^6(y^9-5y^8+12y^7-15y^6+9y^5+y^4-4y^3+2y^2+y-1)$ $\cdot(y^{51}-40y^{50}+\cdots+33792y-4096)$
c_8, c_{11}	$(y^2+y+1)^3$ $\cdot(y^9+3y^8+8y^7+13y^6+17y^5+17y^4+12y^3+6y^2+y-1)$ $\cdot(y^{51}+15y^{50}+\cdots+132y-1)$
c_{10}, c_{12}	$((y^2+y+1)^3)(y^9+7y^8+\cdots+13y-1)$ $\cdot(y^{51}+47y^{50}+\cdots+21000y-1)$