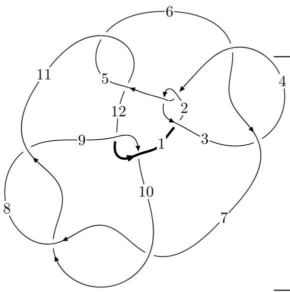
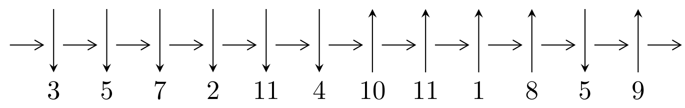
$12n_{0137}$ $(K12n_{0137})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -9.85228 \times 10^{76} u^{64} - 6.99704 \times 10^{77} u^{63} + \cdots + 5.10441 \times 10^{77} b - 2.60555 \times 10^{76}, \\
& -1.62634 \times 10^{77} u^{64} - 1.12461 \times 10^{78} u^{63} + \cdots + 5.10441 \times 10^{77} a + 2.07206 \times 10^{79}, \\
& u^{65} + 7u^{64} + \cdots - 61u + 1 \rangle \\
I_2^u = \langle & 3u^2 a + 4au + u^2 + b + 2a + u + 1,\ -u^2 a + a^2 + u^2 + a - u,\ u^3 + u^2 - 1 \rangle \\
I_3^u = \langle & -4a^2 + b + a - 7,\ a^3 - a^2 + 2a - 1,\ u - 1 \rangle \\
I_4^u = \langle & b + u + 2,\ a - 2u - 3,\ u^2 + u - 1 \rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 76 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. $\boldsymbol{I_1^u = \langle -9.85\times 10^{76}u^{64} - 7.00\times 10^{77}u^{63} + \cdots + 5.10\times 10^{77}b - 2.61\times 10^{76},\ -1.63\times 10^{77}u^{64} - 1.12\times 10^{78}u^{63} + \cdots + 5.10\times 10^{77}a + 2.07\times 10^{79},\ u^{65} + 7u^{64} + \cdots - 61u + 1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -u^2+1 \\ -u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.318614u^{64} + 2.20322u^{63} + \cdots - 187.922u - 40.5935 \\ 0.193015u^{64} + 1.37078u^{63} + \cdots + 31.2483u + 0.0510450 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.181812u^{64} - 1.12398u^{63} + \cdots - 143.777u - 40.7558 \\ -0.312557u^{64} - 1.73228u^{63} + \cdots + 47.1225u - 0.209103 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u \\ -u^3+u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.0237982u^{64} + 0.139063u^{63} + \cdots - 88.0105u - 21.6619 \\ -1.02089u^{64} - 6.46038u^{63} + \cdots + 19.1974u + 0.00528714 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.0237982u^{64} + 0.139063u^{63} + \cdots - 88.0105u - 21.6619 \\ -0.793668u^{64} - 5.02777u^{63} + \cdots + 0.528898u + 0.310938 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.174107u^{64} - 1.00555u^{63} + \cdots - 15.0665u - 7.78932 \\ -0.246119u^{64} - 1.30818u^{63} + \cdots + 12.6788u - 0.0843556 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.0275853u^{64} + 0.408515u^{63} + \cdots - 35.1429u - 7.46418 \\ 0.325138u^{64} + 2.07428u^{63} + \cdots - 7.33147u + 0.243004 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.404667u^{64} + 2.59172u^{63} + \cdots - 131.916u - 23.4724 \\ -0.464640u^{64} - 3.13321u^{63} + \cdots + 9.04364u + 0.172982 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 1.87765u^{64} + 14.8687u^{63} + \cdots + 187.232u + 6.39873$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{65} + 35u^{64} + \cdots + 4379u + 1$
c_2, c_4	$u^{65} - 7u^{64} + \cdots - 61u - 1$
c_3, c_6	$u^{65} - 4u^{64} + \cdots - 4u - 8$
c_5, c_{11}	$u^{65} - 3u^{64} + \cdots + 224u - 64$
c_7, c_8, c_{10}	$u^{65} + 7u^{64} + \cdots + 88u - 1$
c_9, c_{12}	$u^{65} - 5u^{64} + \cdots + 4u - 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{65} - 3y^{64} + \cdots + 19078099y - 1$
c_2, c_4	$y^{65} - 35y^{64} + \cdots + 4379y - 1$
c_3, c_6	$y^{65} + 24y^{64} + \cdots + 7056y - 64$
c_5, c_{11}	$y^{65} - 47y^{64} + \cdots + 283648y - 4096$
c_7, c_8, c_{10}	$y^{65} - 55y^{64} + \cdots + 6134y - 1$
c_9, c_{12}	$y^{65} - 21y^{64} + \cdots + 1448y - 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.978199 + 0.188355I$ $a = -0.097584 - 0.485198I$ $b = -0.566996 + 1.279070I$	$-1.000760 - 0.692383I$	$-6.73751 + 0.I$
$u = 0.978199 - 0.188355I$ $a = -0.097584 + 0.485198I$ $b = -0.566996 - 1.279070I$	$-1.000760 + 0.692383I$	$-6.73751 + 0.I$
$u = 0.989443$ $a = 0.408778$ $b = 9.34730$	-0.561787	-200.700
$u = -0.792790 + 0.578558I$ $a = 0.102171 + 0.126924I$ $b = -1.09401 + 1.32036I$	$11.02040 + 2.29381I$	0
$u = -0.792790 - 0.578558I$ $a = 0.102171 - 0.126924I$ $b = -1.09401 - 1.32036I$	$11.02040 - 2.29381I$	0
$u = -0.956320 + 0.141139I$ $a = 0.48690 - 1.37332I$ $b = 0.201705 - 0.989795I$	$-4.60256 - 2.48429I$	$2.01382 - 9.93890I$
$u = -0.956320 - 0.141139I$ $a = 0.48690 + 1.37332I$ $b = 0.201705 + 0.989795I$	$-4.60256 + 2.48429I$	$2.01382 + 9.93890I$
$u = -0.683102 + 0.644381I$ $a = 1.33162 - 1.64923I$ $b = 0.818752 - 0.323057I$	$4.65051 + 1.43055I$	$4.63524 - 5.15036I$
$u = -0.683102 - 0.644381I$ $a = 1.33162 + 1.64923I$ $b = 0.818752 + 0.323057I$	$4.65051 - 1.43055I$	$4.63524 + 5.15036I$
$u = -0.220993 + 0.900580I$ $a = 1.71144 + 0.11133I$ $b = 0.241601 + 0.752237I$	$-0.42473 - 5.58831I$	$0. + 4.96253I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.220993 - 0.900580I$ $a = 1.71144 - 0.11133I$ $b = 0.241601 - 0.752237I$	$-0.42473 + 5.58831I$	$0. - 4.96253I$
$u = -0.898048 + 0.623866I$ $a = -1.07198 + 1.80577I$ $b = -1.82761 + 1.02787I$	$4.03132 + 3.47720I$	0
$u = -0.898048 - 0.623866I$ $a = -1.07198 - 1.80577I$ $b = -1.82761 - 1.02787I$	$4.03132 - 3.47720I$	0
$u = 0.568826 + 0.935685I$ $a = -1.252080 + 0.399270I$ $b = -0.371291 + 1.091860I$	$1.38895 + 2.95818I$	0
$u = 0.568826 - 0.935685I$ $a = -1.252080 - 0.399270I$ $b = -0.371291 - 1.091860I$	$1.38895 - 2.95818I$	0
$u = -0.124919 + 0.887726I$ $a = 0.281399 + 0.044752I$ $b = -0.459233 + 0.326826I$	$7.57890 - 3.09040I$	$6.72860 + 3.02873I$
$u = -0.124919 - 0.887726I$ $a = 0.281399 - 0.044752I$ $b = -0.459233 - 0.326826I$	$7.57890 + 3.09040I$	$6.72860 - 3.02873I$
$u = -0.307741 + 1.069510I$ $a = -1.62825 - 0.54466I$ $b = -0.412336 - 1.061990I$	$4.86618 - 10.28160I$	0
$u = -0.307741 - 1.069510I$ $a = -1.62825 + 0.54466I$ $b = -0.412336 + 1.061990I$	$4.86618 + 10.28160I$	0
$u = -1.013850 + 0.477455I$ $a = -0.318794 + 0.4441188I$ $b = 0.224946 - 0.486741I$	$0.56978 + 4.38703I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.013850 - 0.477455I$ $a = -0.318794 - 0.444188I$ $b = 0.224946 + 0.486741I$	$0.56978 - 4.38703I$	0
$u = 1.079610 + 0.408263I$ $a = 0.203024 + 1.130950I$ $b = 0.42767 + 1.71363I$	$-1.31032 - 2.58838I$	0
$u = 1.079610 - 0.408263I$ $a = 0.203024 - 1.130950I$ $b = 0.42767 - 1.71363I$	$-1.31032 + 2.58838I$	0
$u = -0.866464 + 0.780684I$ $a = 1.00474 + 1.88631I$ $b = -0.54581 + 2.09233I$	$3.85230 + 2.93050I$	0
$u = -0.866464 - 0.780684I$ $a = 1.00474 - 1.88631I$ $b = -0.54581 - 2.09233I$	$3.85230 - 2.93050I$	0
$u = 1.143920 + 0.287639I$ $a = 0.466880 + 0.894239I$ $b = 2.46022 + 2.14973I$	$-1.58736 + 0.20570I$	0
$u = 1.143920 - 0.287639I$ $a = 0.466880 - 0.894239I$ $b = 2.46022 - 2.14973I$	$-1.58736 - 0.20570I$	0
$u = -1.129770 + 0.340293I$ $a = -0.433099 + 1.075100I$ $b = -0.135218 + 1.075780I$	$-6.03312 + 3.48808I$	0
$u = -1.129770 - 0.340293I$ $a = -0.433099 - 1.075100I$ $b = -0.135218 - 1.075780I$	$-6.03312 - 3.48808I$	0
$u = -0.280055 + 0.763508I$ $a = -1.74275 + 0.40895I$ $b = -0.218485 + 0.488467I$	$2.73256 - 3.28945I$	$2.80172 + 2.68321I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.280055 - 0.763508I$ $a = -1.74275 - 0.40895I$ $b = -0.218485 - 0.488467I$	$2.73256 + 3.28945I$	$2.80172 - 2.68321I$
$u = 0.802270$ $a = 0.0518504$ $b = -4.68222$	7.71518	-86.2400
$u = -1.100770 + 0.494345I$ $a = 0.390021 - 0.786924I$ $b = 1.74073 - 1.70018I$	$-0.66498 + 4.63908I$	0
$u = -1.100770 - 0.494345I$ $a = 0.390021 + 0.786924I$ $b = 1.74073 + 1.70018I$	$-0.66498 - 4.63908I$	0
$u = 1.138890 + 0.516830I$ $a = -0.153293 - 1.184990I$ $b = -1.79910 - 1.91501I$	$-4.82760 - 4.40824I$	0
$u = 1.138890 - 0.516830I$ $a = -0.153293 + 1.184990I$ $b = -1.79910 + 1.91501I$	$-4.82760 + 4.40824I$	0
$u = 0.733644 + 0.132924I$ $a = -2.44908 - 2.64522I$ $b = 0.25925 + 3.39498I$	$0.646116 - 0.109642I$	$-45.2047 + 8.8218I$
$u = 0.733644 - 0.132924I$ $a = -2.44908 + 2.64522I$ $b = 0.25925 - 3.39498I$	$0.646116 + 0.109642I$	$-45.2047 - 8.8218I$
$u = 0.212963 + 0.702410I$ $a = 1.69285 - 0.06283I$ $b = 0.285610 - 0.811517I$	$-2.18618 - 0.21906I$	$-3.41412 + 0.63779I$
$u = 0.212963 - 0.702410I$ $a = 1.69285 + 0.06283I$ $b = 0.285610 + 0.811517I$	$-2.18618 + 0.21906I$	$-3.41412 - 0.63779I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.144350 + 0.549506I$ $a = 0.423148 - 1.005190I$ $b = 0.110767 - 1.274550I$	$0.19526 + 8.22606I$	0
$u = -1.144350 - 0.549506I$ $a = 0.423148 + 1.005190I$ $b = 0.110767 + 1.274550I$	$0.19526 - 8.22606I$	0
$u = 1.106960 + 0.690966I$ $a = -0.095676 + 1.306210I$ $b = 1.35935 + 1.80926I$	$-0.31021 - 8.92181I$	0
$u = 1.106960 - 0.690966I$ $a = -0.095676 - 1.306210I$ $b = 1.35935 - 1.80926I$	$-0.31021 + 8.92181I$	0
$u = -0.481434 + 0.486718I$ $a = 0.675303 - 0.696708I$ $b = 1.023720 - 0.531357I$	$2.10912 - 0.34030I$	$3.61302 + 0.63149I$
$u = -0.481434 - 0.486718I$ $a = 0.675303 + 0.696708I$ $b = 1.023720 + 0.531357I$	$2.10912 + 0.34030I$	$3.61302 - 0.63149I$
$u = 1.291860 + 0.308009I$ $a = -0.535246 - 0.916498I$ $b = -0.460659 - 1.205350I$	$-5.30684 + 1.54275I$	0
$u = 1.291860 - 0.308009I$ $a = -0.535246 + 0.916498I$ $b = -0.460659 + 1.205350I$	$-5.30684 - 1.54275I$	0
$u = -1.206790 + 0.570547I$ $a = -0.226214 + 1.184020I$ $b = -1.59633 + 2.09960I$	$-3.39471 + 10.94230I$	0
$u = -1.206790 - 0.570547I$ $a = -0.226214 - 1.184020I$ $b = -1.59633 - 2.09960I$	$-3.39471 - 10.94230I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.255190 + 0.475295I$ $a = -0.055501 - 0.186916I$ $b = -0.097593 - 0.921175I$	$3.47356 - 1.55230I$	0
$u = 1.255190 - 0.475295I$ $a = -0.055501 + 0.186916I$ $b = -0.097593 + 0.921175I$	$3.47356 + 1.55230I$	0
$u = 0.652150$ $a = 0.581302$ $b = -0.626898$	-1.00335	-10.2290
$u = -1.228690 + 0.560073I$ $a = -0.016874 + 0.243267I$ $b = -0.611981 + 0.962751I$	$4.31441 + 8.34885I$	0
$u = -1.228690 - 0.560073I$ $a = -0.016874 - 0.243267I$ $b = -0.611981 - 0.962751I$	$4.31441 - 8.34885I$	0
$u = -0.914593 + 1.030720I$ $a = -0.652075 - 1.141730I$ $b = 0.23039 - 1.45733I$	$9.17254 + 3.64107I$	0
$u = -0.914593 - 1.030720I$ $a = -0.652075 + 1.141730I$ $b = 0.23039 + 1.45733I$	$9.17254 - 3.64107I$	0
$u = -0.277804 + 0.539464I$ $a = -1.21331 + 0.90105I$ $b = 0.374598 - 0.465447I$	$1.65110 - 0.40415I$	$3.75505 + 0.76632I$
$u = -0.277804 - 0.539464I$ $a = -1.21331 - 0.90105I$ $b = 0.374598 + 0.465447I$	$1.65110 + 0.40415I$	$3.75505 - 0.76632I$
$u = -1.250110 + 0.654083I$ $a = -0.032151 - 1.362680I$ $b = 1.31022 - 2.26446I$	$1.9343 + 16.4466I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.250110 - 0.654083I$ $a = -0.032151 + 1.362680I$ $b = 1.31022 + 2.26446I$	$1.9343 - 16.4466I$	0
$u = 1.46199 + 0.21591I$ $a = 0.775439 + 0.708467I$ $b = 0.671896 + 0.753763I$	$-1.34521 + 5.69764I$	0
$u = 1.46199 - 0.21591I$ $a = 0.775439 - 0.708467I$ $b = 0.671896 - 0.753763I$	$-1.34521 - 5.69764I$	0
$u = -1.64593$ $a = 0.300783$ $b = 0.310246$	-7.15457	0
$u = 0.0151310$ $a = -43.4847$ $b = 0.562042$	1.12640	9.50900

II.

$$\boldsymbol{I_2^u = \langle 3u^2a + 4au + u^2 + b + 2a + u + 1,\ -u^2a + a^2 + u^2 + a - u,\ u^3 + u^2 - 1 \rangle}$$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 21u^2a + 39au + 11u^2 + 24a + 19u + 26$

(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, c_{11}	u^6
c_6	$(u^3 + u^2 + 2u + 1)^2$
c_7, c_8, c_9	$(u^2 - u - 1)^3$
c_{10}, c_{12}	$(u^2 + u - 1)^3$

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.877439 + 0.744862I$ $a = 0.485107 + 0.807858I$ $b = -0.67924 + 1.71765I$	$11.90680 + 2.82812I$	$7.63548 - 4.05775I$
$u = -0.877439 + 0.744862I$ $a = -1.27003 - 2.11500I$ $b = 0.55668 - 2.46251I$	$4.01109 + 2.82812I$	$22.3213 + 9.8050I$
$u = -0.877439 - 0.744862I$ $a = 0.485107 - 0.807858I$ $b = -0.67924 - 1.71765I$	$11.90680 - 2.82812I$	$7.63548 + 4.05775I$
$u = -0.877439 - 0.744862I$ $a = -1.27003 + 2.11500I$ $b = 0.55668 + 2.46251I$	$4.01109 - 2.82812I$	$22.3213 - 9.8050I$
$u = 0.754878$ $a = -0.696013$ $b = 2.35878$	-0.126494	1.08690
$u = 0.754878$ $a = 0.265853$ $b = -4.11365$	7.76919	64.0000

III. $\boldsymbol{I_3^u = \langle -4a^2 + b + a - 7,\ a^3 - a^2 + 2a - 1,\ u - 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 53a^2 - 32a + 92$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

	Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	1.00000		
$a=$	$0.215080+1.307140I$	$-4.66906+2.82812I$	$-2.98758-12.02771I$
$b=$	$0.135484+0.941977I$		
$u=$	1.00000		
$a=$	$0.215080-1.307140I$	$-4.66906-2.82812I$	$-2.98758+12.02771I$
$b=$	$0.135484-0.941977I$		
$u=$	1.00000		
$a=$	0.569840	-0.531480	90.9750
$b=$	7.72903		

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

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1 \\ u-1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u \\ u-1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 2u+3 \\ -u-2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 2u+3 \\ -u-2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u \\ -u+1 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u \\ u-1 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} -2u+1 \\ 3u-1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u+3 \\ -2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -49$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_{11}	$y^2 - 7y + 1$
c_2, c_3, c_4 c_6	$y^2 - 3y + 1$
c_7, c_8, c_{10}	$(y-1)^2$
c_9, c_{12}	y^2

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.618034$ $a = 4.23607$ $b = -2.61803$	0.657974	−49.0000
$u = -1.61803$ $a = -0.236068$ $b = -0.381966$	−7.23771	−49.0000

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^3(u^2-3u+1)(u^3-u^2+2u-1)^2$ $\cdot\,(u^{65}+35u^{64}+\cdots+4379u+1)$
c_2	$((u-1)^3)(u^2+u-1)(u^3+u^2-1)^2(u^{65}-7u^{64}+\cdots-61u-1)$
c_3	$u^3(u^2+u-1)(u^3-u^2+2u-1)^2(u^{65}-4u^{64}+\cdots-4u-8)$
c_4	$((u+1)^3)(u^2-u-1)(u^3-u^2+1)^2(u^{65}-7u^{64}+\cdots-61u-1)$
c_5	$u^6(u^2+3u+1)(u^3-3u^2+2u+1)(u^{65}-3u^{64}+\cdots+224u-64)$
c_6	$u^3(u^2-u-1)(u^3+u^2+2u+1)^2(u^{65}-4u^{64}+\cdots-4u-8)$
c_7, c_8	$((u+1)^2)(u^2-u-1)^3(u^3-u^2+1)(u^{65}+7u^{64}+\cdots+88u-1)$
c_9	$u^2(u^2-u-1)^3(u^3+u^2+2u+1)(u^{65}-5u^{64}+\cdots+4u-4)$
c_{10}	$((u-1)^2)(u^2+u-1)^3(u^3+u^2-1)(u^{65}+7u^{64}+\cdots+88u-1)$
c_{11}	$u^6(u^2-3u+1)(u^3+3u^2+2u-1)(u^{65}-3u^{64}+\cdots+224u-64)$
c_{12}	$u^2(u^2+u-1)^3(u^3-u^2+2u-1)(u^{65}-5u^{64}+\cdots+4u-4)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^3(y^2-7y+1)(y^3+3y^2+2y-1)^2$ $\cdot(y^{65}-3y^{64}+\cdots+19078099y-1)$
c_2, c_4	$(y-1)^3(y^2-3y+1)(y^3-y^2+2y-1)^2$ $\cdot(y^{65}-35y^{64}+\cdots+4379y-1)$
c_3, c_6	$y^3(y^2-3y+1)(y^3+3y^2+2y-1)^2(y^{65}+24y^{64}+\cdots+7056y-64)$
c_5, c_{11}	$y^6(y^2-7y+1)(y^3-5y^2+10y-1)$ $\cdot(y^{65}-47y^{64}+\cdots+283648y-4096)$
c_7, c_8, c_{10}	$(y-1)^2(y^2-3y+1)^3(y^3-y^2+2y-1)$ $\cdot(y^{65}-55y^{64}+\cdots+6134y-1)$
c_9, c_{12}	$y^2(y^2-3y+1)^3(y^3+3y^2+2y-1)(y^{65}-21y^{64}+\cdots+1448y-16)$