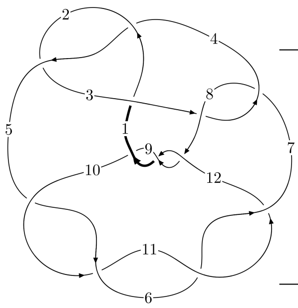
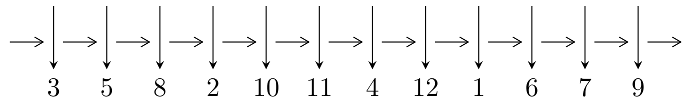
$12a_{0093}$ ($K12a_{0093}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 3.70075 \times 10^{79} u^{71} - 3.81232 \times 10^{79} u^{70} + \cdots + 7.87156 \times 10^{79} b + 2.01580 \times 10^{80}, \\
& - 2.44050 \times 10^{79} u^{71} + 6.22842 \times 10^{79} u^{70} + \cdots + 1.57431 \times 10^{80} a - 3.01318 \times 10^{80}, \\
& u^{72} - 2u^{71} + \cdots + 24u + 8 \rangle \\
I_2^u = \langle & -4a^2 u + 2a^2 + 4au + 7b + 12a - 6u - 4,\ 4a^3 - 6a^2 u - 8a^2 + 2au + 8a - u - 2,\ u^2 - 2 \rangle \\
I_3^u = \langle & b + 1,\ -u^2 + a + u + 2,\ u^3 - u^2 - 2u + 1 \rangle
\end{aligned}$$

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

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 84 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. $\boldsymbol{I^u_1 = \langle 3.70 \times 10^{79} u^{71} - 3.81 \times 10^{79} u^{70} + \cdots + 7.87 \times 10^{79} b + 2.02 \times 10^{80},\ -2.44 \times 10^{79} u^{71} + 6.23 \times 10^{79} u^{70} + \cdots + 1.57 \times 10^{80} a - 3.01 \times 10^{80},\ u^{72} - 2u^{71} + \cdots + 24u + 8 \rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.155020u^{71} - 0.395628u^{70} + \cdots - 37.7884u + 1.91396 \\ -0.470142u^{71} + 0.484315u^{70} + \cdots + 4.00972u - 2.56087 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.315123u^{71} + 0.0886872u^{70} + \cdots - 33.7787u - 0.646903 \\ -0.470142u^{71} + 0.484315u^{70} + \cdots + 4.00972u - 2.56087 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1.73551u^{71} - 3.17752u^{70} + \cdots - 2.59470u + 17.5888 \\ -2.40461u^{71} + 2.78349u^{70} + \cdots + 14.3590u - 6.88864 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.485716u^{71} - 1.14719u^{70} + \cdots - 26.7644u + 3.00194 \\ -0.981957u^{71} + 1.07115u^{70} + \cdots + 3.98093u - 0.323764 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.556973u^{71} + 1.35772u^{70} + \cdots - 20.8031u - 10.0464 \\ -0.333969u^{71} - 1.38159u^{70} + \cdots + 31.1725u + 18.7963 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.363304u^{71} - 1.99774u^{70} + \cdots + 35.4662u + 20.3509 \\ 0.618338u^{71} + 1.54449u^{70} + \cdots - 40.5582u - 23.2300 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^3 - 2u \\ u^5 - 3u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 5.63154u^{71} - 8.59389u^{70} + \cdots - 116.925u - 7.71745$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{72} + 37u^{71} + \cdots + 107u + 1$
c_2, c_4	$u^{72} - 7u^{71} + \cdots + 5u + 1$
c_3, c_7	$u^{72} + 2u^{71} + \cdots + 36u - 8$
c_5, c_6, c_{10} c_{11}	$u^{72} - 2u^{71} + \cdots + 24u + 8$
c_8, c_9, c_{12}	$u^{72} + 5u^{71} + \cdots + 41u + 7$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{72} + 3y^{71} + \cdots - 8427y + 1$
c_2, c_4	$y^{72} - 37y^{71} + \cdots - 107y + 1$
c_3, c_7	$y^{72} + 30y^{71} + \cdots - 3280y + 64$
c_5, c_6, c_{10} c_{11}	$y^{72} - 88y^{71} + \cdots - 2752y + 64$
c_8, c_9, c_{12}	$y^{72} - 73y^{71} + \cdots + 1707y + 49$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.875758 + 0.429272I$ $a = 0.262678 + 0.101583I$ $b = -1.287090 - 0.279824I$	$-8.31181 + 2.46798I$	0
$u = -0.875758 - 0.429272I$ $a = 0.262678 - 0.101583I$ $b = -1.287090 + 0.279824I$	$-8.31181 - 2.46798I$	0
$u = 0.827261 + 0.504621I$ $a = 0.09772 + 2.12500I$ $b = -1.121890 - 0.521031I$	$-7.76669 - 5.28143I$	0
$u = 0.827261 - 0.504621I$ $a = 0.09772 - 2.12500I$ $b = -1.121890 + 0.521031I$	$-7.76669 + 5.28143I$	0
$u = -0.799643 + 0.671253I$ $a = 0.06752 + 1.80494I$ $b = 1.205120 - 0.572281I$	$-6.25612 + 11.79520I$	0
$u = -0.799643 - 0.671253I$ $a = 0.06752 - 1.80494I$ $b = 1.205120 + 0.572281I$	$-6.25612 - 11.79520I$	0
$u = -0.744414 + 0.572251I$ $a = -0.652228 - 1.062510I$ $b = 0.233482 + 0.906675I$	$-3.31502 + 6.41563I$	0
$u = -0.744414 - 0.572251I$ $a = -0.652228 + 1.062510I$ $b = 0.233482 - 0.906675I$	$-3.31502 - 6.41563I$	0
$u = 0.786461 + 0.477851I$ $a = 0.68942 - 1.66417I$ $b = 1.084140 + 0.564418I$	$0.01076 - 7.70106I$	0
$u = 0.786461 - 0.477851I$ $a = 0.68942 + 1.66417I$ $b = 1.084140 - 0.564418I$	$0.01076 + 7.70106I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.857434 + 0.264670I$ $a = 1.02566 - 1.10598I$ $b = -0.327725 + 0.634372I$	$-5.42751 - 0.70274I$	0
$u = 0.857434 - 0.264670I$ $a = 1.02566 + 1.10598I$ $b = -0.327725 - 0.634372I$	$-5.42751 + 0.70274I$	0
$u = -0.879575 + 0.163473I$ $a = 1.027390 + 0.651113I$ $b = 0.950405 - 0.535597I$	$-0.97750 + 2.84413I$	0
$u = -0.879575 - 0.163473I$ $a = 1.027390 - 0.651113I$ $b = 0.950405 + 0.535597I$	$-0.97750 - 2.84413I$	0
$u = -0.199773 + 0.851046I$ $a = -0.996478 - 0.881875I$ $b = 1.147690 + 0.510260I$	$-4.44972 - 6.76334I$	$-12.00000 + 0.I$
$u = -0.199773 - 0.851046I$ $a = -0.996478 + 0.881875I$ $b = 1.147690 - 0.510260I$	$-4.44972 + 6.76334I$	$-12.00000 + 0.I$
$u = 0.626406 + 0.476151I$ $a = -0.717312 + 0.408958I$ $b = 0.380216 - 0.718908I$	$2.05866 - 2.81348I$	$-9.50002 + 4.98668I$
$u = 0.626406 - 0.476151I$ $a = -0.717312 - 0.408958I$ $b = 0.380216 + 0.718908I$	$2.05866 + 2.81348I$	$-9.50002 - 4.98668I$
$u = 1.181710 + 0.470204I$ $a = -0.1216000 - 0.0229142I$ $b = 1.094920 - 0.394215I$	$-8.72689 + 2.18989I$	0
$u = 1.181710 - 0.470204I$ $a = -0.1216000 + 0.0229142I$ $b = 1.094920 + 0.394215I$	$-8.72689 - 2.18989I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.611935 + 0.376277I$ $a = -0.283350 + 0.621830I$ $b = 0.649429 + 0.513270I$	$-0.07524 - 1.41658I$	$-12.97255 + 1.10740I$
$u = -0.611935 - 0.376277I$ $a = -0.283350 - 0.621830I$ $b = 0.649429 - 0.513270I$	$-0.07524 + 1.41658I$	$-12.97255 - 1.10740I$
$u = -0.214744 + 0.682258I$ $a = 0.40025 + 1.69752I$ $b = 0.197456 - 0.697303I$	$-1.72777 - 2.16585I$	$-11.52549 + 1.08940I$
$u = -0.214744 - 0.682258I$ $a = 0.40025 - 1.69752I$ $b = 0.197456 + 0.697303I$	$-1.72777 + 2.16585I$	$-11.52549 - 1.08940I$
$u = 0.054234 + 0.691316I$ $a = 1.57683 - 1.56133I$ $b = -1.142460 + 0.370676I$	$-5.43584 + 1.26277I$	$-16.3916 - 0.1881I$
$u = 0.054234 - 0.691316I$ $a = 1.57683 + 1.56133I$ $b = -1.142460 - 0.370676I$	$-5.43584 - 1.26277I$	$-16.3916 + 0.1881I$
$u = -0.617110 + 0.307371I$ $a = -0.59785 - 2.50870I$ $b = -0.986315 + 0.384932I$	$-2.03116 + 2.58391I$	$-16.3746 - 6.6287I$
$u = -0.617110 - 0.307371I$ $a = -0.59785 + 2.50870I$ $b = -0.986315 - 0.384932I$	$-2.03116 - 2.58391I$	$-16.3746 + 6.6287I$
$u = 0.276521 + 0.561410I$ $a = -0.19398 - 1.44729I$ $b = 0.600878 + 0.650005I$	$3.08581 - 0.76384I$	$-6.34873 + 2.59077I$
$u = 0.276521 - 0.561410I$ $a = -0.19398 + 1.44729I$ $b = 0.600878 - 0.650005I$	$3.08581 + 0.76384I$	$-6.34873 - 2.59077I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.396880 + 0.035985I$ $a = 0.186911 + 0.763642I$ $b = 0.831473 - 0.725123I$	$-1.87165 + 2.75314I$	0
$u = -1.396880 - 0.035985I$ $a = 0.186911 - 0.763642I$ $b = 0.831473 + 0.725123I$	$-1.87165 - 2.75314I$	0
$u = -1.40156$ $a = 11.4734$ $b = -0.988970$	-8.19953	0
$u = 0.092090 + 0.573260I$ $a = -0.770057 + 1.161670I$ $b = 0.953023 - 0.598994I$	$2.06822 + 4.08017I$	$-7.94616 - 5.26935I$
$u = 0.092090 - 0.573260I$ $a = -0.770057 - 1.161670I$ $b = 0.953023 + 0.598994I$	$2.06822 - 4.08017I$	$-7.94616 + 5.26935I$
$u = 0.550545 + 0.163361I$ $a = -1.57695 + 0.17909I$ $b = -1.110070 + 0.163246I$	$-2.56966 - 0.57818I$	$-16.8714 + 8.9218I$
$u = 0.550545 - 0.163361I$ $a = -1.57695 - 0.17909I$ $b = -1.110070 - 0.163246I$	$-2.56966 + 0.57818I$	$-16.8714 - 8.9218I$
$u = 1.42095 + 0.21273I$ $a = 0.542378 - 0.597190I$ $b = 0.590617 + 0.161261I$	$-6.67741 - 0.58823I$	0
$u = 1.42095 - 0.21273I$ $a = 0.542378 + 0.597190I$ $b = 0.590617 - 0.161261I$	$-6.67741 + 0.58823I$	0
$u = 1.47025$ $a = 0.911193$ $b = -0.327218$	-6.78796	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.481111 + 0.095743I$ $a = -0.79648 + 1.70877I$ $b = 0.865855 - 0.831513I$	$0.90495 + 3.07172I$	$-20.6395 - 5.9253I$
$u = -0.481111 - 0.095743I$ $a = -0.79648 - 1.70877I$ $b = 0.865855 + 0.831513I$	$0.90495 - 3.07172I$	$-20.6395 + 5.9253I$
$u = 1.53498 + 0.03198I$ $a = 0.438335 + 0.164331I$ $b = -0.058233 - 0.496424I$	$-6.93072 - 0.11771I$	0
$u = 1.53498 - 0.03198I$ $a = 0.438335 - 0.164331I$ $b = -0.058233 + 0.496424I$	$-6.93072 + 0.11771I$	0
$u = 1.58385 + 0.02369I$ $a = -0.055937 - 0.975650I$ $b = 0.910185 + 0.970380I$	$-6.39453 - 3.47846I$	0
$u = 1.58385 - 0.02369I$ $a = -0.055937 + 0.975650I$ $b = 0.910185 - 0.970380I$	$-6.39453 + 3.47846I$	0
$u = -1.58359 + 0.12100I$ $a = -0.233603 - 0.250046I$ $b = 0.219437 + 0.848024I$	$-5.41979 + 4.93889I$	0
$u = -1.58359 - 0.12100I$ $a = -0.233603 + 0.250046I$ $b = 0.219437 - 0.848024I$	$-5.41979 - 4.93889I$	0
$u = -1.58812 + 0.03042I$ $a = -1.228490 + 0.430142I$ $b = -1.230760 - 0.307392I$	$-10.01110 + 1.19025I$	0
$u = -1.58812 - 0.03042I$ $a = -1.228490 - 0.430142I$ $b = -1.230760 + 0.307392I$	$-10.01110 - 1.19025I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.59443 + 0.07004I$ $a = -0.95915 + 1.33782I$ $b = -1.126480 - 0.469683I$	$-9.64311 - 3.88422I$	0
$u = 1.59443 - 0.07004I$ $a = -0.95915 - 1.33782I$ $b = -1.126480 + 0.469683I$	$-9.64311 + 3.88422I$	0
$u = -0.395087$ $a = 0.927031$ $b = -0.104752$	-0.588530	-16.7510
$u = -0.221019 + 0.289419I$ $a = 2.12036 + 0.93378I$ $b = -0.778490 - 0.216174I$	$-0.944244 - 0.257791I$	$-11.16562 - 1.59535I$
$u = -0.221019 - 0.289419I$ $a = 2.12036 - 0.93378I$ $b = -0.778490 + 0.216174I$	$-0.944244 + 0.257791I$	$-11.16562 + 1.59535I$
$u = 1.62768 + 0.17150I$ $a = -0.431502 + 0.570990I$ $b = 0.243814 - 1.044500I$	$-11.3658 - 9.2318I$	0
$u = 1.62768 - 0.17150I$ $a = -0.431502 - 0.570990I$ $b = 0.243814 + 1.044500I$	$-11.3658 + 9.2318I$	0
$u = -1.64174 + 0.14153I$ $a = 0.96072 + 1.05427I$ $b = 1.188910 - 0.551097I$	$-8.31688 + 10.07720I$	0
$u = -1.64174 - 0.14153I$ $a = 0.96072 - 1.05427I$ $b = 1.188910 + 0.551097I$	$-8.31688 - 10.07720I$	0
$u = -1.64839 + 0.08124I$ $a = 0.477835 + 0.762351I$ $b = -0.442405 - 0.890711I$	$-14.0714 + 2.0898I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.64839 - 0.08124I$ $a = 0.477835 - 0.762351I$ $b = -0.442405 + 0.890711I$	$-14.0714 - 2.0898I$	0
$u = -1.65163 + 0.14342I$ $a = -0.41603 - 1.43600I$ $b = -1.153970 + 0.638956I$	$-16.2646 + 7.7641I$	0
$u = -1.65163 - 0.14342I$ $a = -0.41603 + 1.43600I$ $b = -1.153970 - 0.638956I$	$-16.2646 - 7.7641I$	0
$u = 1.64915 + 0.20871I$ $a = 0.65126 - 1.32967I$ $b = 1.260260 + 0.616858I$	$-14.5211 - 15.1783I$	0
$u = 1.64915 - 0.20871I$ $a = 0.65126 + 1.32967I$ $b = 1.260260 - 0.616858I$	$-14.5211 + 15.1783I$	0
$u = 1.65979 + 0.11678I$ $a = -0.486333 - 0.039718I$ $b = -1.41864 + 0.27823I$	$-17.0477 - 4.5612I$	0
$u = 1.65979 - 0.11678I$ $a = -0.486333 + 0.039718I$ $b = -1.41864 - 0.27823I$	$-17.0477 + 4.5612I$	0
$u = 1.66435 + 0.06433I$ $a = 1.010600 - 0.515375I$ $b = 1.126480 + 0.439828I$	$-9.85240 - 3.84777I$	0
$u = 1.66435 - 0.06433I$ $a = 1.010600 + 0.515375I$ $b = 1.126480 - 0.439828I$	$-9.85240 + 3.84777I$	0
$u = 0.229806$ $a = -13.4178$ $b = -0.871083$	-2.90601	-61.9330

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.78412 + 0.04723I$ $a = 0.534525 - 0.028315I$ $b = 1.096760 + 0.161668I$	$-19.6154 - 0.2070I$	0
$u = -1.78412 - 0.04723I$ $a = 0.534525 + 0.028315I$ $b = 1.096760 - 0.161668I$	$-19.6154 + 0.2070I$	0

II. $I_2^u = \langle -4a^2u+2a^2+4au+7b+12a-6u-4,\ 4a^3-6a^2u-8a^2+2au+8a-u-2,\ u^2-2\rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} a \\ \frac{4}{7}a^2u - \frac{4}{7}au + \cdots - \frac{12}{7}a + \frac{4}{7} \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} \frac{4}{7}a^2u - \frac{4}{7}au + \cdots - \frac{5}{7}a + \frac{4}{7} \\ \frac{4}{7}a^2u - \frac{4}{7}au + \cdots - \frac{12}{7}a + \frac{4}{7} \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{1}{2}u \\ \frac{2}{7}a^2u + \frac{5}{7}au + \cdots + \frac{8}{7}a + \frac{2}{7} \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -\frac{3}{7}a^2u + \frac{10}{7}au + \cdots + \frac{16}{7}a - \frac{3}{7} \\ -\frac{2}{7}a^2u + \frac{9}{7}au + \cdots + \frac{20}{7}a - \frac{9}{7} \end{pmatrix}$$

$$a_8 = \begin{pmatrix} \frac{1}{2}u \\ \frac{2}{7}a^2u + \frac{5}{7}au + \cdots + \frac{8}{7}a + \frac{2}{7} \end{pmatrix}$$

$$a_9 = \begin{pmatrix} \frac{1}{2}u \\ \frac{2}{7}a^2u + \frac{5}{7}au + \cdots + \frac{8}{7}a + \frac{2}{7} \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{16}{7}a^2u - \frac{8}{7}a^2 - \frac{16}{7}au - \frac{48}{7}a + \frac{24}{7}u - \frac{124}{7}$

(iv) u-Polynomials at the component

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

(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, c_6, c_{10} c_{11}	$(y - 2)^6$
c_8, c_9, c_{12}	$(y - 1)^6$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.41421$ $a = 0.361309 + 0.347270I$ $b = 0.877439 - 0.744862I$	$-3.55561 + 2.82812I$	$-16.4902 - 2.9794I$
$u = 1.41421$ $a = 0.361309 - 0.347270I$ $b = 0.877439 + 0.744862I$	$-3.55561 - 2.82812I$	$-16.4902 + 2.9794I$
$u = 1.41421$ $a = 3.39870$ $b = -0.754878$	-7.69319	-23.0200
$u = -1.41421$ $a = -0.116187 + 1.142450I$ $b = 0.877439 - 0.744862I$	$-3.55561 + 2.82812I$	$-16.4902 - 2.9794I$
$u = -1.41421$ $a = -0.116187 - 1.142450I$ $b = 0.877439 + 0.744862I$	$-3.55561 - 2.82812I$	$-16.4902 + 2.9794I$
$u = -1.41421$ $a = 0.111054$ $b = -0.754878$	-7.69319	-23.0200

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

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u \\ -u^2-u+1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^2-u-2 \\ -1 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} u^2-u-3 \\ -1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^2-u-2 \\ -1 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u^2-1 \\ u^2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= u^2+4u-16$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u-1)^3$
c_3, c_7	u^3
c_4	$(u+1)^3$
c_5, c_6, c_8 c_9	$u^3 - u^2 - 2u + 1$
c_{10}, c_{11}, 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_7	y^3
c_5, c_6, c_8 c_9, c_{10}, c_{11} c_{12}	$y^3 - 5y^2 + 6y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.24698$ $a = 0.801938$ $b = -1.00000$	-7.98968	-19.4330
$u = 0.445042$ $a = -2.24698$ $b = -1.00000$	-2.34991	-14.0220
$u = 1.80194$ $a = -0.554958$ $b = -1.00000$	-19.2692	-5.54530

IV. $\boldsymbol{I_1^v = \langle a,\ -v^2 + b - 3v + 1,\ v^3 + 2v^2 - 3v + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2v - 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 0.539798 + 0.182582I$ $a = 0$ $b = 0.877439 + 0.744862I$	$1.37919 - 2.82812I$	$-7.07960 - 0.36516I$
$v = 0.539798 - 0.182582I$ $a = 0$ $b = 0.877439 - 0.744862I$	$1.37919 + 2.82812I$	$-7.07960 + 0.36516I$
$v = -3.07960$ $a = 0$ $b = -0.754878$	-2.75839	0.159190

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^3)(u^3-u^2+2u-1)^3(u^{72}+37u^{71}+\cdots+107u+1)$
c_2	$((u-1)^3)(u^3+u^2-1)^3(u^{72}-7u^{71}+\cdots+5u+1)$
c_3	$u^3(u^3-u^2+2u-1)(u^3+u^2+2u+1)^2(u^{72}+2u^{71}+\cdots+36u-8)$
c_4	$((u+1)^3)(u^3-u^2+1)^3(u^{72}-7u^{71}+\cdots+5u+1)$
c_5, c_6	$u^3(u^2-2)^3(u^3-u^2-2u+1)(u^{72}-2u^{71}+\cdots+24u+8)$
c_7	$u^3(u^3-u^2+2u-1)^2(u^3+u^2+2u+1)(u^{72}+2u^{71}+\cdots+36u-8)$
c_8, c_9	$((u-1)^3)(u+1)^6(u^3-u^2-2u+1)(u^{72}+5u^{71}+\cdots+41u+7)$
c_{10}, c_{11}	$u^3(u^2-2)^3(u^3+u^2-2u-1)(u^{72}-2u^{71}+\cdots+24u+8)$
c_{12}	$((u-1)^6)(u+1)^3(u^3+u^2-2u-1)(u^{72}+5u^{71}+\cdots+41u+7)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^3)(y^3+3y^2+2y-1)^3(y^{72}+3y^{71}+\cdots-8427y+1)$
c_2, c_4	$((y-1)^3)(y^3-y^2+2y-1)^3(y^{72}-37y^{71}+\cdots-107y+1)$
c_3, c_7	$y^3(y^3+3y^2+2y-1)^3(y^{72}+30y^{71}+\cdots-3280y+64)$
c_5, c_6, c_{10} c_{11}	$y^3(y-2)^6(y^3-5y^2+6y-1)(y^{72}-88y^{71}+\cdots-2752y+64)$
c_8, c_9, c_{12}	$((y-1)^9)(y^3-5y^2+6y-1)(y^{72}-73y^{71}+\cdots+1707y+49)$