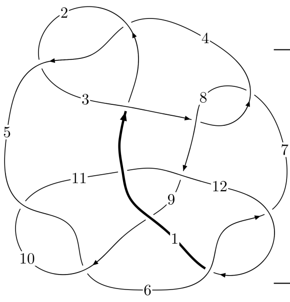
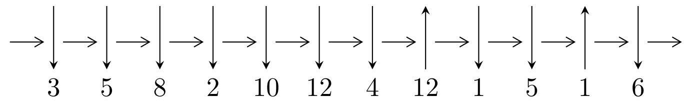
$12n_{0204}$ ($K12n_{0204}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle -409562441u^{28} - 633138331u^{27} + \cdots + 12789818786b + 1495358594,\\
&\quad - 649542429u^{28} - 1056906370u^{27} + \cdots + 2557963756a - 48242973,\ u^{29} + 2u^{28} + \cdots + 5u - 4\rangle\\
I_2^u &= \langle u^{14}a - u^{14} + \cdots + b - 1,\ -2u^{14} - u^{13} + \cdots - a + 3,\\
&\quad u^{15} + u^{14} - 4u^{13} - 5u^{12} + 6u^{11} + 10u^{10} - 7u^8 - 8u^7 - 4u^6 + 6u^5 + 8u^4 + 2u^3 - 2u^2 - 2u - 1\rangle\\
I_3^u &= \langle u^4a + u^3a - u^4 - u^3 - au + b - a + u,\ u^5 - 2u^3 + a^2 - u^2 + 2u + 1,\ u^6 + u^5 - u^4 - 2u^3 + u + 1\rangle\\
I_4^u &= \langle 2b + 3,\ a + 1,\ u - 1\rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 72 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.
$\boldsymbol{I_1^u = \langle -4.10\times10^8u^{28} - 6.33\times10^8u^{27} + \cdots + 1.28\times10^9b + 1.50\times10^9,\ -6.50\times 10^8u^{28} - 1.06\times10^9u^{27} + \cdots + 2.56\times10^9a - 4.82\times10^7,\ u^{29} + 2u^{28} + \cdots + 5u - 4\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2+1 \\ -u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.253929u^{28} + 0.413183u^{27} + \cdots + 3.78605u + 0.0188599 \\ 0.320225u^{28} + 0.495033u^{27} + \cdots + 1.86204u - 1.16918 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0.253151u^{28} + 0.268291u^{27} + \cdots + 2.54838u + 0.206314 \\ 0.0347611u^{28} + 0.0691866u^{27} + \cdots - 0.718788u - 0.0155112 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u \\ -u^3+u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.253929u^{28} + 0.413183u^{27} + \cdots + 3.78605u + 0.0188599 \\ 0.265953u^{28} + 0.469651u^{27} + \cdots + 0.372941u - 0.790474 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.241553u^{28} - 0.198421u^{27} + \cdots - 2.06949u + 0.135383 \\ 0.0507414u^{28} + 0.0659434u^{27} + \cdots + 1.51952u - 0.265184 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.482352u^{28} - 0.389873u^{27} + \cdots - 4.05885u + 0.333349 \\ 0.0518322u^{28} + 0.0860020u^{27} + \cdots + 1.78896u - 0.341645 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.246071u^{28} + 0.0868173u^{27} + \cdots + 1.21395u + 0.481140 \\ -0.0746592u^{28} - 0.176612u^{27} + \cdots - 2.68612u + 0.591964 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.487395u^{28} + 0.426835u^{27} + \cdots + 3.80650u - 0.325257 \\ -0.00202308u^{28} - 0.00908992u^{27} + \cdots - 1.92712u + 0.242240 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{1071754917}{2557963756}u^{28} - \frac{75682913}{2557963756}u^{27} + \cdots + \frac{8446888807}{2557963756}u - \frac{9796598069}{639490939}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{29} + 16u^{28} + \cdots + 209u + 16$
c_2, c_4	$u^{29} - 2u^{28} + \cdots + 5u + 4$
c_3, c_7	$u^{29} + 3u^{28} + \cdots + 18u + 8$
c_5, c_6, c_{10} c_{12}	$u^{29} + u^{28} + \cdots + 2u + 1$
c_8, c_{11}	$u^{29} - 5u^{28} + \cdots - 6u + 1$
c_9	$u^{29} + 26u^{28} + \cdots + 376832u + 32768$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{29} - 4y^{28} + \cdots + 21313y - 256$
c_2, c_4	$y^{29} - 16y^{28} + \cdots + 209y - 16$
c_3, c_7	$y^{29} + 9y^{28} + \cdots - 140y - 64$
c_5, c_6, c_{10} c_{12}	$y^{29} + 5y^{28} + \cdots - 6y - 1$
c_8, c_{11}	$y^{29} + 45y^{28} + \cdots + 6y - 1$
c_9	$y^{29} - 16y^{28} + \cdots + 6174015488y - 1073741824$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.960613+0.170294I$ $a=-1.129440-0.468149I$ $b=-1.63701-0.14149I$	$-3.34627+0.60911I$	$-7.67402-10.34191I$
$u=-0.960613-0.170294I$ $a=-1.129440+0.468149I$ $b=-1.63701+0.14149I$	$-3.34627-0.60911I$	$-7.67402+10.34191I$
$u=\ \ 0.829481+0.498753I$ $a=\ \ 0.851038+0.266459I$ $b=\ \ 1.25630-0.93003I$	$-0.95125-3.42018I$	$-9.12436+7.13905I$
$u=\ \ 0.829481-0.498753I$ $a=\ \ 0.851038-0.266459I$ $b=\ \ 1.25630+0.93003I$	$-0.95125+3.42018I$	$-9.12436-7.13905I$
$u=-0.555934+0.787790I$ $a=-0.385011+0.878403I$ $b=-0.547815-0.259593I$	$3.91212-3.07296I$	$-3.58580+5.16956I$
$u=-0.555934-0.787790I$ $a=-0.385011-0.878403I$ $b=-0.547815+0.259593I$	$3.91212+3.07296I$	$-3.58580-5.16956I$
$u=-0.133622+0.942757I$ $a=-1.05744+1.03712I$ $b=-0.400359-0.621002I$	$-3.40148-10.10230I$	$-5.65840+6.34779I$
$u=-0.133622-0.942757I$ $a=-1.05744-1.03712I$ $b=-0.400359+0.621002I$	$-3.40148+10.10230I$	$-5.65840-6.34779I$
$u=-0.482129+0.757528I$ $a=\ \ 0.760914-0.157398I$ $b=\ \ 0.683226+0.243077I$	$3.66760-0.05333I$	$-4.59541-3.69602I$
$u=-0.482129-0.757528I$ $a=\ \ 0.760914+0.157398I$ $b=\ \ 0.683226-0.243077I$	$3.66760+0.05333I$	$-4.59541+3.69602I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.819144 + 0.362327I$ $a = 0.087730 - 0.590172I$ $b = -0.776429 + 0.138255I$	$-0.751059 - 0.353134I$	$-9.39424 - 1.40493I$
$u = 0.819144 - 0.362327I$ $a = 0.087730 + 0.590172I$ $b = -0.776429 - 0.138255I$	$-0.751059 + 0.353134I$	$-9.39424 + 1.40493I$
$u = 0.121290 + 0.842756I$ $a = -1.00456 - 1.22447I$ $b = -0.539181 + 0.622092I$	$-4.45862 + 3.60692I$	$-7.22386 - 2.01130I$
$u = 0.121290 - 0.842756I$ $a = -1.00456 + 1.22447I$ $b = -0.539181 - 0.622092I$	$-4.45862 - 3.60692I$	$-7.22386 + 2.01130I$
$u = -1.002290 + 0.666485I$ $a = 0.794138 - 0.363712I$ $b = 1.64106 + 0.14073I$	$2.60025 + 8.50017I$	$-5.17138 - 9.83055I$
$u = -1.002290 - 0.666485I$ $a = 0.794138 + 0.363712I$ $b = 1.64106 - 0.14073I$	$2.60025 - 8.50017I$	$-5.17138 + 9.83055I$
$u = -1.064380 + 0.598303I$ $a = -0.159509 + 0.533064I$ $b = -0.638339 - 0.004258I$	$1.93242 + 5.18468I$	$-8.47176 - 2.14374I$
$u = -1.064380 - 0.598303I$ $a = -0.159509 - 0.533064I$ $b = -0.638339 + 0.004258I$	$1.93242 - 5.18468I$	$-8.47176 + 2.14374I$
$u = 1.230540 + 0.053330I$ $a = -0.440769 + 0.411058I$ $b = -1.154760 + 0.333664I$	$-2.23909 + 1.32557I$	$-7.93584 - 5.22491I$
$u = 1.230540 - 0.053330I$ $a = -0.440769 - 0.411058I$ $b = -1.154760 - 0.333664I$	$-2.23909 - 1.32557I$	$-7.93584 + 5.22491I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.243450+0.397204I$ $a=-0.541600-0.973717I$ $b=-1.67988-0.94005I$	$-8.59540+0.64697I$	$-11.02522-1.67463I$
$u=-1.243450-0.397204I$ $a=-0.541600+0.973717I$ $b=-1.67988+0.94005I$	$-8.59540-0.64697I$	$-11.02522+1.67463I$
$u=\ 1.215230+0.518861I$ $a=\ 0.943218+0.506066I$ $b=\ 2.90492+0.42900I$	$-7.70776-8.57292I$	$-9.65881+5.33629I$
$u=\ 1.215230-0.518861I$ $a=\ 0.943218-0.506066I$ $b=\ 2.90492-0.42900I$	$-7.70776+8.57292I$	$-9.65881-5.33629I$
$u=-1.252950+0.545209I$ $a=\ 0.925713-0.557598I$ $b=\ 2.79765-0.77731I$	$-6.8135+15.4607I$	$-8.47000-9.06787I$
$u=-1.252950-0.545209I$ $a=\ 0.925713+0.557598I$ $b=\ 2.79765+0.77731I$	$-6.8135-15.4607I$	$-8.47000+9.06787I$
$u=\ 1.313260+0.385635I$ $a=-0.416958+0.934515I$ $b=-1.47424+1.05397I$	$-8.00289+5.49028I$	$-9.85377-4.12172I$
$u=\ 1.313260-0.385635I$ $a=-0.416958-0.934515I$ $b=-1.47424-1.05397I$	$-8.00289-5.49028I$	$-9.85377+4.12172I$
$u=\ 0.332840$ $a=\ 1.29507$ $b=-0.370297$	-0.777392	-12.5640

II.

$\boldsymbol{I_2^u = \langle u^{14}a - u^{14} + \cdots + b - 1,\ -2u^{14} - u^{13} + \cdots - a + 3,\ u^{15} + u^{14} + \cdots - 2u - 1\rangle}$

(i) Arc colorings

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

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

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

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

$$a_{11} = \begin{pmatrix} a \\ -u^{14}a + u^{14} + \cdots + u + 1 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u^6a - 2u^4a + u^2a - u^2 + a + 1 \\ -u^{14}a + u^{14} + \cdots + u + 1 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} a \\ -u^{14}a + u^{14} + \cdots + u + 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^{14} + u^{13} + \cdots - u - 2 \\ -u^{13}a - u^{13} + \cdots - a - 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^{11} + 4u^9 - 6u^7 + 2u^5 + 3u^3 - 2u \\ -u^{11} + 3u^9 - 4u^7 + u^5 + u^3 - u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^2 + a + 1 \\ -u^{14}a + u^{14} + \cdots + u + 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^{14} - 5u^{12} + 10u^{10} - 7u^8 - 4u^6 + 8u^4 - 2u^2 - 1 \\ u^{14} - 4u^{12} + 7u^{10} - 4u^8 - 2u^6 + 4u^4 - u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -4u^{13} + 16u^{11} + 4u^{10} - 28u^9 - 12u^8 + 12u^7 + 16u^6 + 16u^5 - 24u^3 - 8u^2 - 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{15}+9u^{14}+\cdots-4u^2+1)^2$
c_2, c_4	$(u^{15}-u^{14}+\cdots-2u+1)^2$
c_3, c_7	$(u^{15}-u^{14}+\cdots+2u-1)^2$
c_5, c_6, c_{10} c_{12}	$u^{30}-3u^{29}+\cdots-30u+9$
c_8, c_{11}	$u^{30}-11u^{29}+\cdots-1296u+81$
c_9	$(u-1)^{30}$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{15} - 5y^{14} + \cdots + 8y - 1)^2$
c_2, c_4	$(y^{15} - 9y^{14} + \cdots + 4y^2 - 1)^2$
c_3, c_7	$(y^{15} + 3y^{14} + \cdots + 8y^2 - 1)^2$
c_5, c_6, c_{10} c_{12}	$y^{30} + 11y^{29} + \cdots + 1296y + 81$
c_8, c_{11}	$y^{30} + 15y^{29} + \cdots - 73224y + 6561$
c_9	$(y - 1)^{30}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.023100 + 0.900040I$ $a = 0.825316 + 1.129310I$ $b = 0.286301 - 0.445204I$	$-4.73497 - 3.25615I$	$-7.67133 + 2.40088I$
$u = -0.023100 + 0.900040I$ $a = 0.98422 - 1.08773I$ $b = 0.164746 + 0.352495I$	$-4.73497 - 3.25615I$	$-7.67133 + 2.40088I$
$u = -0.023100 - 0.900040I$ $a = 0.825316 - 1.129310I$ $b = 0.286301 + 0.445204I$	$-4.73497 + 3.25615I$	$-7.67133 - 2.40088I$
$u = -0.023100 - 0.900040I$ $a = 0.98422 + 1.08773I$ $b = 0.164746 - 0.352495I$	$-4.73497 + 3.25615I$	$-7.67133 - 2.40088I$
$u = 0.863978$ $a = 0.126771 + 1.178080I$ $b = 3.66551 - 2.58901I$	2.03422	-12.4840
$u = 0.863978$ $a = 0.126771 - 1.178080I$ $b = 3.66551 + 2.58901I$	2.03422	-12.4840
$u = 1.093890 + 0.311098I$ $a = -0.297631 - 0.955829I$ $b = -1.62293 - 0.54486I$	$-0.109911 - 1.108490I$	$-11.51398 + 0.68443I$
$u = 1.093890 + 0.311098I$ $a = 0.197813 + 0.275213I$ $b = 0.45469 + 1.92439I$	$-0.109911 - 1.108490I$	$-11.51398 + 0.68443I$
$u = 1.093890 - 0.311098I$ $a = -0.297631 + 0.955829I$ $b = -1.62293 + 0.54486I$	$-0.109911 + 1.108490I$	$-11.51398 - 0.68443I$
$u = 1.093890 - 0.311098I$ $a = 0.197813 - 0.275213I$ $b = 0.45469 - 1.92439I$	$-0.109911 + 1.108490I$	$-11.51398 - 0.68443I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.747479+0.391613I$ $a=\ \ 1.023110-0.862412I$ $b=\ \ 1.63828-1.05509I$	$4.53214+1.75942I$	$-1.14915-5.01461I$
$u=-0.747479+0.391613I$ $a=-0.42847+1.44786I$ $b=\ \ 0.248041-0.151767I$	$4.53214+1.75942I$	$-1.14915-5.01461I$
$u=-0.747479-0.391613I$ $a=\ \ 1.023110+0.862412I$ $b=\ \ 1.63828+1.05509I$	$4.53214-1.75942I$	$-1.14915+5.01461I$
$u=-0.747479-0.391613I$ $a=-0.42847-1.44786I$ $b=\ \ 0.248041+0.151767I$	$4.53214-1.75942I$	$-1.14915+5.01461I$
$u=-1.070290+0.443484I$ $a=-0.592827+0.959612I$ $b=-1.162130+0.705596I$	$0.87635+5.68434I$	$-8.20490-7.47679I$
$u=-1.070290+0.443484I$ $a=\ \ 0.643980-0.010296I$ $b=\ \ 1.27621-1.00477I$	$0.87635+5.68434I$	$-8.20490-7.47679I$
$u=-1.070290-0.443484I$ $a=-0.592827-0.959612I$ $b=-1.162130-0.705596I$	$0.87635-5.68434I$	$-8.20490+7.47679I$
$u=-1.070290-0.443484I$ $a=\ \ 0.643980+0.010296I$ $b=\ \ 1.27621+1.00477I$	$0.87635-5.68434I$	$-8.20490+7.47679I$
$u=\ \ 1.268720+0.457284I$ $a=-0.923717-0.340768I$ $b=-2.59581-0.49906I$	$-8.68612-1.54935I$	$-11.09602+0.66420I$
$u=\ \ 1.268720+0.457284I$ $a=\ \ 0.523167-0.819566I$ $b=\ \ 1.44899-1.21103I$	$-8.68612-1.54935I$	$-11.09602+0.66420I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.268720 - 0.457284I$ $a = -0.923717 + 0.340768I$ $b = -2.59581 + 0.49906I$	$-8.68612 + 1.54935I$	$-11.09602 - 0.66420I$
$u = 1.268720 - 0.457284I$ $a = 0.523167 + 0.819566I$ $b = 1.44899 + 1.21103I$	$-8.68612 + 1.54935I$	$-11.09602 - 0.66420I$
$u = -1.260410 + 0.482704I$ $a = 0.621138 + 0.785123I$ $b = 1.74021 + 0.98052I$	$-8.49724 + 8.19235I$	$-10.69502 - 5.35870I$
$u = -1.260410 + 0.482704I$ $a = -0.976755 + 0.431682I$ $b = -2.53986 + 0.80421I$	$-8.49724 + 8.19235I$	$-10.69502 - 5.35870I$
$u = -1.260410 - 0.482704I$ $a = 0.621138 - 0.785123I$ $b = 1.74021 - 0.98052I$	$-8.49724 - 8.19235I$	$-10.69502 + 5.35870I$
$u = -1.260410 - 0.482704I$ $a = -0.976755 - 0.431682I$ $b = -2.53986 - 0.80421I$	$-8.49724 - 8.19235I$	$-10.69502 + 5.35870I$
$u = -0.193328 + 0.557909I$ $a = -0.687123 + 0.933709I$ $b = 0.869302 - 0.104344I$	$3.26563 - 1.73642I$	$-4.42769 + 4.08118I$
$u = -0.193328 + 0.557909I$ $a = 1.96101 - 0.71799I$ $b = 0.628452 - 0.272272I$	$3.26563 - 1.73642I$	$-4.42769 + 4.08118I$
$u = -0.193328 - 0.557909I$ $a = -0.687123 - 0.933709I$ $b = 0.869302 + 0.104344I$	$3.26563 + 1.73642I$	$-4.42769 - 4.08118I$
$u = -0.193328 - 0.557909I$ $a = 1.96101 + 0.71799I$ $b = 0.628452 + 0.272272I$	$3.26563 + 1.73642I$	$-4.42769 - 4.08118I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^6 - 3u^5 + 5u^4 - 4u^3 + 2u^2 - u + 1)^2$
c_2	$(u^6 + u^5 - u^4 - 2u^3 + u + 1)^2$
c_3, c_7	$u^{12} + 3u^{10} + 5u^8 + 4u^6 + 2u^4 + u^2 + 1$
c_4	$(u^6 - u^5 - u^4 + 2u^3 - u + 1)^2$
c_5, c_6, c_{10} c_{12}	$(u^2 + 1)^6$
c_8, c_{11}	$(u + 1)^{12}$
c_9	$u^{12} + 12u^{11} + \cdots + 60u + 9$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^6+y^5+5y^4+6y^2+3y+1)^2$
c_2, c_4	$(y^6-3y^5+5y^4-4y^3+2y^2-y+1)^2$
c_3, c_7	$(y^6+3y^5+5y^4+4y^3+2y^2+y+1)^2$
c_5, c_6, c_{10} c_{12}	$(y+1)^{12}$
c_8, c_{11}	$(y-1)^{12}$
c_9	$y^{12}-14y^{11}+\cdots-108y+81$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.002190 + 0.295542I$ $a = -0.270708 - 0.917982I$ $b = -1.49594 + 1.39869I$	$1.39926 - 0.92430I$	$-5.71672 + 0.79423I$
$u = 1.002190 + 0.295542I$ $a = 0.270708 + 0.917982I$ $b = 1.95964 + 1.91259I$	$1.39926 - 0.92430I$	$-5.71672 + 0.79423I$
$u = 1.002190 - 0.295542I$ $a = -0.270708 + 0.917982I$ $b = -1.49594 - 1.39869I$	$1.39926 + 0.92430I$	$-5.71672 - 0.79423I$
$u = 1.002190 - 0.295542I$ $a = 0.270708 - 0.917982I$ $b = 1.95964 - 1.91259I$	$1.39926 + 0.92430I$	$-5.71672 - 0.79423I$
$u = -0.428243 + 0.664531I$ $a = 1.063260 - 0.685196I$ $b = 1.226020 - 0.214242I$	$5.18047 - 0.92430I$	$1.71672 + 0.79423I$
$u = -0.428243 + 0.664531I$ $a = -1.063260 + 0.685196I$ $b = 0.093522 - 0.382665I$	$5.18047 - 0.92430I$	$1.71672 + 0.79423I$
$u = -0.428243 - 0.664531I$ $a = 1.063260 + 0.685196I$ $b = 1.226020 + 0.214242I$	$5.18047 + 0.92430I$	$1.71672 - 0.79423I$
$u = -0.428243 - 0.664531I$ $a = -1.063260 - 0.685196I$ $b = 0.093522 + 0.382665I$	$5.18047 + 0.92430I$	$1.71672 - 0.79423I$
$u = -1.073950 + 0.558752I$ $a = 0.381252 - 0.732786I$ $b = 1.04838 - 1.16005I$	$3.28987 + 5.69302I$	$-2.00000 - 5.51057I$
$u = -1.073950 + 0.558752I$ $a = -0.381252 + 0.732786I$ $b = -0.831626 - 0.477727I$	$3.28987 + 5.69302I$	$-2.00000 - 5.51057I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.073950-0.558752I$ $a=0.381252+0.732786I$ $b=1.04838+1.16005I$	$3.28987-5.69302I$	$-2.00000+5.51057I$
$u=-1.073950-0.558752I$ $a=-0.381252-0.732786I$ $b=-0.831626+0.477727I$	$3.28987-5.69302I$	$-2.00000+5.51057I$

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

(i) Arc colorings

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

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

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

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

$$a_{11} = \begin{pmatrix} -1 \\ -1.5 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -1 \\ -0.5 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -1 \\ -0.5 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -1 \\ 0.5 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -2 \\ 0 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -1 \\ 0.5 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -2 \\ 0 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -9.75$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 1.00000$ $a = -1.00000$ $b = -1.50000$	-3.28987	-9.75000

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)(u^6-3u^5+5u^4-4u^3+2u^2-u+1)^2$ $\cdot((u^{15}+9u^{14}+\cdots-4u^2+1)^2)(u^{29}+16u^{28}+\cdots+209u+16)$
c_2	$(u-1)(u^6+u^5+\cdots+u+1)^2(u^{15}-u^{14}+\cdots-2u+1)^2$ $\cdot(u^{29}-2u^{28}+\cdots+5u+4)$
c_3, c_7	$u(u^{12}+3u^{10}+\cdots+u^2+1)(u^{15}-u^{14}+\cdots+2u-1)^2$ $\cdot(u^{29}+3u^{28}+\cdots+18u+8)$
c_4	$(u+1)(u^6-u^5+\cdots-u+1)^2(u^{15}-u^{14}+\cdots-2u+1)^2$ $\cdot(u^{29}-2u^{28}+\cdots+5u+4)$
c_5, c_6	$(u-1)(u^2+1)^6(u^{29}+u^{28}+\cdots+2u+1)(u^{30}-3u^{29}+\cdots-30u+9)$
c_8, c_{11}	$(u-1)(u+1)^{12}(u^{29}-5u^{28}+\cdots-6u+1)$ $\cdot(u^{30}-11u^{29}+\cdots-1296u+81)$
c_9	$((u-1)^{31})(u^{12}+12u^{11}+\cdots+60u+9)$ $\cdot(u^{29}+26u^{28}+\cdots+376832u+32768)$
c_{10}, c_{12}	$(u+1)(u^2+1)^6(u^{29}+u^{28}+\cdots+2u+1)(u^{30}-3u^{29}+\cdots-30u+9)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)(y^6+y^5+\cdots+3y+1)^2(y^{15}-5y^{14}+\cdots+8y-1)^2$ $\cdot(y^{29}-4y^{28}+\cdots+21313y-256)$
c_2, c_4	$(y-1)(y^6-3y^5+5y^4-4y^3+2y^2-y+1)^2$ $\cdot((y^{15}-9y^{14}+\cdots+4y^2-1)^2)(y^{29}-16y^{28}+\cdots+209y-16)$
c_3, c_7	$y(y^6+3y^5+\cdots+y+1)^2(y^{15}+3y^{14}+\cdots+8y^2-1)^2$ $\cdot(y^{29}+9y^{28}+\cdots-140y-64)$
c_5, c_6, c_{10} c_{12}	$(y-1)(y+1)^{12}(y^{29}+5y^{28}+\cdots-6y-1)$ $\cdot(y^{30}+11y^{29}+\cdots+1296y+81)$
c_8, c_{11}	$((y-1)^{13})(y^{29}+45y^{28}+\cdots+6y-1)$ $\cdot(y^{30}+15y^{29}+\cdots-73224y+6561)$
c_9	$((y-1)^{31})(y^{12}-14y^{11}+\cdots-108y+81)$ $\cdot(y^{29}-16y^{28}+\cdots+6174015488y-1073741824)$