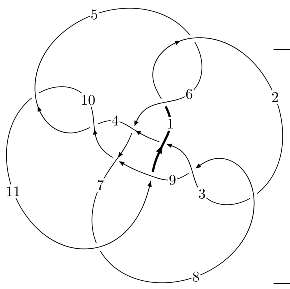
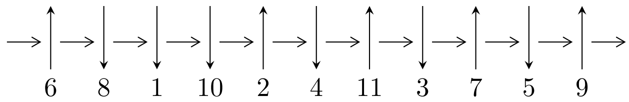
$11a_{281}$ ($K11a_{281}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle &-41702317014899u^{28} - 43018944579853u^{27} + \cdots + 1423444900410062b - 32762826071390,\\
&-214382018217017u^{28} - 235461945222166u^{27} + \cdots + 284688980082124a + 218463983805488,\\
&u^{29} - 12u^{27} + \cdots + 4u + 4\rangle\\
I_2^u = \langle &1.20003 \times 10^{196}u^{67} + 5.15521 \times 10^{196}u^{66} + \cdots + 5.31191 \times 10^{195}b - 8.00012 \times 10^{197},\\
&2.93592 \times 10^{198}u^{67} + 1.24026 \times 10^{199}u^{66} + \cdots + 1.06610 \times 10^{199}a - 1.22115 \times 10^{200},\\
&3u^{68} + 16u^{67} + \cdots - 121u - 223\rangle\\
I_3^u = \langle &4170u^{11} + 9821u^{10} + \cdots + 1318b - 848,\ 60429u^{11} + 266417u^{10} + \cdots + 23724a - 45544,\\
&3u^{12} + 5u^{11} - 3u^{10} - 15u^9 - 10u^8 + 16u^7 + 45u^6 + 35u^5 - 15u^4 - 36u^3 - 10u^2 + 8u + 4\rangle\\
I_4^u = \langle &-u^3 + b + u,\ u^7 - u^6 - 4u^5 + 3u^4 + 5u^3 - u^2 + a - 2u - 3,\ u^8 - 4u^6 + 5u^4 + u^3 - u^2 - 2u - 1\rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 117 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. $\boldsymbol{I_1^u = \langle -4.17\times 10^{13}u^{28} - 4.30\times 10^{13}u^{27} + \cdots + 1.42\times 10^{14}b - 3.28\times 10^{13},\ -2.14\times 10^{14}u^{28} - 2.35\times 10^{14}u^{27} + \cdots + 2.85\times 10^{14}a + 2.18\times 10^{14},\ u^{29} - 12u^{27} + \cdots + 4u + 4\rangle}$

(i) Arc colorings

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

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

$$a_5 = \begin{pmatrix}1\\u^2\end{pmatrix}$$

$$a_7 = \begin{pmatrix}0.753039u^{28} + 0.827085u^{27} + \cdots - 5.75342u - 0.767378\\0.292968u^{28} + 0.302217u^{27} + \cdots + 0.399336u + 0.230166\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}-u\\-u^3+u\end{pmatrix}$$

$$a_6 = \begin{pmatrix}1.04601u^{28} + 1.12930u^{27} + \cdots - 5.35408u - 0.537212\\0.292968u^{28} + 0.302217u^{27} + \cdots + 0.399336u + 0.230166\end{pmatrix}$$

$$a_9 = \begin{pmatrix}0.198212u^{28} - 0.192154u^{27} + \cdots - 3.96388u + 2.24602\\0.345416u^{28} + 0.736164u^{27} + \cdots - 1.81377u - 2.24478\end{pmatrix}$$

$$a_1 = \begin{pmatrix}-0.725032u^{28} + 0.125199u^{27} + \cdots + 5.96387u - 2.97699\\0.292968u^{28} + 0.302217u^{27} + \cdots + 0.399336u + 0.230166\end{pmatrix}$$

$$a_2 = \begin{pmatrix}0.509247u^{28} + 0.788403u^{27} + \cdots - 2.80042u - 4.75011\\1.07963u^{28} + 0.955979u^{27} + \cdots - 4.36333u - 2.25401\end{pmatrix}$$

$$a_3 = \begin{pmatrix}0.597496u^{28} + 0.850646u^{27} + \cdots - 1.53897u + 0.554680\\-0.183225u^{28} + 0.412070u^{27} + \cdots - 0.178498u - 0.775938\end{pmatrix}$$

$$a_8 = \begin{pmatrix}1.04886u^{28} + 1.10674u^{27} + \cdots - 5.79918u - 0.143960\\0.757487u^{28} + 0.896403u^{27} + \cdots - 1.85681u - 1.51189\end{pmatrix}$$

$$a_8 = \begin{pmatrix}1.04886u^{28} + 1.10674u^{27} + \cdots - 5.79918u - 0.143960\\0.757487u^{28} + 0.896403u^{27} + \cdots - 1.85681u - 1.51189\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= \frac{2343344445013910}{71172245020531}u^{28} + \frac{2939388506964 7}{71172245020531}u^{27} + \cdots - \frac{13257949990050934}{71172245020531}u + \frac{7863617701344 24}{71172245020531}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{29} - 8u^{28} + \cdots - 26u + 4$
c_2, c_4, c_8 c_{10}	$u^{29} - 12u^{27} + \cdots + 4u - 4$
c_3, c_6	$u^{29} - 2u^{28} + \cdots + 15u + 1$
c_7	$u^{29} - 17u^{28} + \cdots + 520u - 92$
c_9, c_{11}	$u^{29} + u^{28} + \cdots + u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{29} + 16y^{28} + \cdots - 356y - 16$
c_2, c_4, c_8 c_{10}	$y^{29} - 24y^{28} + \cdots + 32y - 16$
c_3, c_6	$y^{29} - 24y^{28} + \cdots + 155y - 1$
c_7	$y^{29} + 3y^{28} + \cdots - 62088y - 8464$
c_9, c_{11}	$y^{29} + 15y^{28} + \cdots - 53y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.092989 + 1.030980I$ $a = -1.045850 + 0.532791I$ $b = 1.200380 - 0.719634I$	$-2.34877 + 6.13504I$	$-3.24652 - 5.83976I$
$u = 0.092989 - 1.030980I$ $a = -1.045850 - 0.532791I$ $b = 1.200380 + 0.719634I$	$-2.34877 - 6.13504I$	$-3.24652 + 5.83976I$
$u = -1.093210 + 0.089149I$ $a = 0.222968 + 0.946010I$ $b = 1.37085 - 0.79374I$	$-6.04162 + 3.07394I$	$-9.12279 - 3.57971I$
$u = -1.093210 - 0.089149I$ $a = 0.222968 - 0.946010I$ $b = 1.37085 + 0.79374I$	$-6.04162 - 3.07394I$	$-9.12279 + 3.57971I$
$u = -1.051540 + 0.405368I$ $a = -0.268647 + 0.851561I$ $b = 1.232730 - 0.569718I$	$-5.87192 + 3.62470I$	$-10.59188 - 4.43960I$
$u = -1.051540 - 0.405368I$ $a = -0.268647 - 0.851561I$ $b = 1.232730 + 0.569718I$	$-5.87192 - 3.62470I$	$-10.59188 + 4.43960I$
$u = 1.124770 + 0.122076I$ $a = 0.765930 + 0.269870I$ $b = 0.400225 - 0.035987I$	$-2.35736 - 0.14468I$	$-4.20415 + 0.31069I$
$u = 1.124770 - 0.122076I$ $a = 0.765930 - 0.269870I$ $b = 0.400225 + 0.035987I$	$-2.35736 + 0.14468I$	$-4.20415 - 0.31069I$
$u = 1.162300 + 0.163964I$ $a = -0.690487 - 0.803933I$ $b = -1.375730 + 0.311121I$	$-8.57749 - 2.95224I$	$-10.14138 + 0.50640I$
$u = 1.162300 - 0.163964I$ $a = -0.690487 + 0.803933I$ $b = -1.375730 - 0.311121I$	$-8.57749 + 2.95224I$	$-10.14138 - 0.50640I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.132500 + 0.443307I$ $a = -0.367552 + 0.368736I$ $b = -0.251678 - 0.659845I$	$-4.32469 + 5.13774I$	$-3.70899 - 4.15997I$
$u = -1.132500 - 0.443307I$ $a = -0.367552 - 0.368736I$ $b = -0.251678 + 0.659845I$	$-4.32469 - 5.13774I$	$-3.70899 + 4.15997I$
$u = -0.191379 + 0.745473I$ $a = 1.203770 + 0.611915I$ $b = -0.670826 - 0.350125I$	$1.16747 - 2.08448I$	$2.66828 + 2.72024I$
$u = -0.191379 - 0.745473I$ $a = 1.203770 - 0.611915I$ $b = -0.670826 + 0.350125I$	$1.16747 + 2.08448I$	$2.66828 - 2.72024I$
$u = -0.054807 + 0.621332I$ $a = -1.108420 + 0.565655I$ $b = 0.996625 + 0.524906I$	$-1.67478 - 1.54885I$	$-1.065400 + 0.655405I$
$u = -0.054807 - 0.621332I$ $a = -1.108420 - 0.565655I$ $b = 0.996625 - 0.524906I$	$-1.67478 + 1.54885I$	$-1.065400 - 0.655405I$
$u = 1.370480 + 0.176714I$ $a = -0.187638 + 0.535925I$ $b = -1.71821 - 1.20659I$	$-10.72490 - 6.90472I$	$-14.4851 + 7.2562I$
$u = 1.370480 - 0.176714I$ $a = -0.187638 - 0.535925I$ $b = -1.71821 + 1.20659I$	$-10.72490 + 6.90472I$	$-14.4851 - 7.2562I$
$u = 1.341530 + 0.446549I$ $a = 0.322309 - 1.193140I$ $b = 1.162950 + 0.674420I$	$-6.19793 - 11.41400I$	$-6.14943 + 7.59206I$
$u = 1.341530 - 0.446549I$ $a = 0.322309 + 1.193140I$ $b = 1.162950 - 0.674420I$	$-6.19793 + 11.41400I$	$-6.14943 - 7.59206I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.25402 + 0.72255I$ $a = 0.517215 + 0.703731I$ $b = -1.169770 + 0.395148I$	$-9.23241 - 4.90891I$	$-10.64744 + 3.17644I$
$u = 1.25402 - 0.72255I$ $a = 0.517215 - 0.703731I$ $b = -1.169770 - 0.395148I$	$-9.23241 + 4.90891I$	$-10.64744 - 3.17644I$
$u = -1.45508 + 0.18906I$ $a = -0.598691 - 1.023850I$ $b = -0.960588 + 0.037736I$	$-12.41910 + 4.43110I$	$-10.98771 - 3.17812I$
$u = -1.45508 - 0.18906I$ $a = -0.598691 + 1.023850I$ $b = -0.960588 - 0.037736I$	$-12.41910 - 4.43110I$	$-10.98771 + 3.17812I$
$u = 0.252564 + 0.409637I$ $a = 0.395939 + 0.235648I$ $b = 0.288573 + 0.480574I$	$-0.394622 - 1.222500I$	$-4.75766 + 5.17356I$
$u = 0.252564 - 0.409637I$ $a = 0.395939 - 0.235648I$ $b = 0.288573 - 0.480574I$	$-0.394622 + 1.222500I$	$-4.75766 - 5.17356I$
$u = -1.40162 + 0.60645I$ $a = -0.220729 - 1.079620I$ $b = -1.54790 + 0.88008I$	$-10.4386 + 18.3111I$	$-6.86769 - 9.17372I$
$u = -1.40162 - 0.60645I$ $a = -0.220729 + 1.079620I$ $b = -1.54790 - 0.88008I$	$-10.4386 - 18.3111I$	$-6.86769 + 9.17372I$
$u = -0.437045$ $a = 3.11977$ $b = 0.0847605$	2.60472	20.6160

II. $\boldsymbol{I_2^u = \langle 1.20 \times 10^{196}u^{67} + 5.16 \times 10^{196}u^{66} + \cdots + 5.31 \times 10^{195}b - 8.00 \times 10^{197},\ 2.94 \times 10^{198}u^{67} + 1.24 \times 10^{199}u^{66} + \cdots + 1.07 \times 10^{199}a - 1.22 \times 10^{200},\ 3u^{68} + 16u^{67} + \cdots - 121u - 223\rangle}$

(i) Arc colorings

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

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

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.275389u^{67} - 1.16336u^{66} + \cdots - 15.1864u + 11.4543 \\ -2.25913u^{67} - 9.70500u^{66} + \cdots - 59.6219u + 150.607 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -2.53452u^{67} - 10.8684u^{66} + \cdots - 74.8083u + 162.061 \\ -2.25913u^{67} - 9.70500u^{66} + \cdots - 59.6219u + 150.607 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.292498u^{67} + 1.10114u^{66} + \cdots + 11.7933u - 17.6526 \\ 2.03825u^{67} + 8.49090u^{66} + \cdots + 44.8246u - 129.281 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1.72493u^{67} + 7.51771u^{66} + \cdots + 66.3490u - 101.298 \\ 1.82144u^{67} + 7.63740u^{66} + \cdots + 41.5956u - 124.562 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1.95206u^{67} + 8.24471u^{66} + \cdots + 46.3401u - 129.732 \\ 2.03002u^{67} + 8.39951u^{66} + \cdots + 32.1084u - 139.503 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -3.39243u^{67} - 14.3105u^{66} + \cdots - 62.0909u + 236.473 \\ -4.18269u^{67} - 17.6453u^{66} + \cdots - 96.2259u + 279.330 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -2.78880u^{67} - 11.9828u^{66} + \cdots - 88.0824u + 178.897 \\ -2.53305u^{67} - 10.9013u^{66} + \cdots - 69.2773u + 175.348 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -2.78880u^{67} - 11.9828u^{66} + \cdots - 88.0824u + 178.897 \\ -2.53305u^{67} - 10.9013u^{66} + \cdots - 69.2773u + 175.348 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4.63264u^{67} + 19.8135u^{66} + \cdots + 132.810u - 264.318$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$9(3u^{34} + 5u^{33} + \cdots - 313u - 43)^2$
c_2, c_4, c_8 c_{10}	$3(3u^{68} - 16u^{67} + \cdots + 121u - 223)$
c_3, c_6	$u^{68} - 6u^{67} + \cdots - 210229u + 37581$
c_7	$(u^{34} + 7u^{33} + \cdots - 1316u - 99)^2$
c_9, c_{11}	$9(9u^{68} + 148u^{67} + \cdots - 31630u - 5631)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$81(9y^{34} + 167y^{33} + \cdots + 5317y + 1849)^2$
c_2, c_4, c_8 c_{10}	$9(9y^{68} - 436y^{67} + \cdots - 726903y + 49729)$
c_3, c_6	$y^{68} - 8y^{67} + \cdots - 8820260035y + 1412331561$
c_7	$(y^{34} + 9y^{33} + \cdots - 255568y + 9801)^2$
c_9, c_{11}	$81(81y^{68} - 4570y^{67} + \cdots + 2.22957 \times 10^8 y + 3.17082 \times 10^7)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.01495$ $a = 8.12625$ $b = 0.418373$	-3.31997	128.500
$u = 0.084125 + 0.978412I$ $a = 0.645453 - 0.352487I$ $b = -0.078035 + 0.585559I$	$-0.688971 - 0.534639I$	$-3.37867 + 0.I$
$u = 0.084125 - 0.978412I$ $a = 0.645453 + 0.352487I$ $b = -0.078035 - 0.585559I$	$-0.688971 + 0.534639I$	$-3.37867 + 0.I$
$u = 1.022130 + 0.065391I$ $a = -1.237250 + 0.294836I$ $b = -1.28088 - 0.75605I$	$-1.35617 - 1.08274I$	0
$u = 1.022130 - 0.065391I$ $a = -1.237250 - 0.294836I$ $b = -1.28088 + 0.75605I$	$-1.35617 + 1.08274I$	0
$u = -0.956268 + 0.146033I$ $a = -0.857284 - 0.438631I$ $b = -1.65712 - 0.30481I$	$-2.95554 + 5.40447I$	$-6.87590 - 8.44285I$
$u = -0.956268 - 0.146033I$ $a = -0.857284 + 0.438631I$ $b = -1.65712 + 0.30481I$	$-2.95554 - 5.40447I$	$-6.87590 + 8.44285I$
$u = 0.974936 + 0.357597I$ $a = 0.340244 - 0.677467I$ $b = -0.00964 + 2.48814I$	$-5.95387 - 8.42267I$	0
$u = 0.974936 - 0.357597I$ $a = 0.340244 + 0.677467I$ $b = -0.00964 - 2.48814I$	$-5.95387 + 8.42267I$	0
$u = -0.984857 + 0.337672I$ $a = 0.414598 + 1.058750I$ $b = 0.340621 - 1.066560I$	$0.66865 + 3.44265I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.984857 - 0.337672I$ $a = 0.414598 - 1.058750I$ $b = 0.340621 + 1.066560I$	$0.66865 - 3.44265I$	0
$u = 0.403789 + 0.854293I$ $a = -0.767026 - 1.077830I$ $b = 1.29616 + 0.77938I$	$-6.90938 - 1.20549I$	$-8.29824 + 1.65199I$
$u = 0.403789 - 0.854293I$ $a = -0.767026 + 1.077830I$ $b = 1.29616 - 0.77938I$	$-6.90938 + 1.20549I$	$-8.29824 - 1.65199I$
$u = -1.123670 + 0.068782I$ $a = -0.237943 - 0.619176I$ $b = 0.73333 + 1.28865I$	$-4.32234 + 4.89818I$	0
$u = -1.123670 - 0.068782I$ $a = -0.237943 + 0.619176I$ $b = 0.73333 - 1.28865I$	$-4.32234 - 4.89818I$	0
$u = 0.869999 + 0.009395I$ $a = -0.486635 - 0.507707I$ $b = 0.48264 + 1.35416I$	$-0.688971 - 0.534639I$	$-3.37867 - 1.20172I$
$u = 0.869999 - 0.009395I$ $a = -0.486635 + 0.507707I$ $b = 0.48264 - 1.35416I$	$-0.688971 + 0.534639I$	$-3.37867 + 1.20172I$
$u = -1.134910 + 0.070979I$ $a = -0.365689 - 0.974919I$ $b = -1.155790 + 0.161103I$	$-6.25593 - 1.69778I$	0
$u = -1.134910 - 0.070979I$ $a = -0.365689 + 0.974919I$ $b = -1.155790 - 0.161103I$	$-6.25593 + 1.69778I$	0
$u = -0.759375 + 0.404771I$ $a = 1.139510 + 0.580807I$ $b = 0.78804 - 2.03645I$	$-0.21933 + 1.79666I$	$-9.10855 - 5.99711I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.759375 - 0.404771I$ $a = 1.139510 - 0.580807I$ $b = 0.78804 + 2.03645I$	$-0.21933 - 1.79666I$	$-9.10855 + 5.99711I$
$u = -0.114864 + 0.846300I$ $a = 0.833754 - 0.974386I$ $b = -0.900503 + 0.322826I$	$-1.72873 + 6.64102I$	$-1.14066 - 7.30703I$
$u = -0.114864 - 0.846300I$ $a = 0.833754 + 0.974386I$ $b = -0.900503 - 0.322826I$	$-1.72873 - 6.64102I$	$-1.14066 + 7.30703I$
$u = -1.146880 + 0.244106I$ $a = -1.79438 + 0.35430I$ $b = -0.853864 + 0.511152I$	$-8.00578 + 8.92199I$	0
$u = -1.146880 - 0.244106I$ $a = -1.79438 - 0.35430I$ $b = -0.853864 - 0.511152I$	$-8.00578 - 8.92199I$	0
$u = 1.120340 + 0.384558I$ $a = 0.111110 - 0.624242I$ $b = 1.185950 + 0.419986I$	$-2.56983 - 1.25654I$	0
$u = 1.120340 - 0.384558I$ $a = 0.111110 + 0.624242I$ $b = 1.185950 - 0.419986I$	$-2.56983 + 1.25654I$	0
$u = 0.569693 + 0.554078I$ $a = 1.44018 - 0.40603I$ $b = 0.87062 + 1.29644I$	$-4.83370 + 4.73328I$	$-5.56628 - 2.61380I$
$u = 0.569693 - 0.554078I$ $a = 1.44018 + 0.40603I$ $b = 0.87062 - 1.29644I$	$-4.83370 - 4.73328I$	$-5.56628 + 2.61380I$
$u = 0.265017 + 0.737170I$ $a = 0.091708 - 1.018770I$ $b = -0.146604 + 0.691144I$	$0.66865 - 3.44265I$	$2.41460 + 6.50572I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.265017 - 0.737170I$ $a = 0.091708 + 1.018770I$ $b = -0.146604 - 0.691144I$	$0.66865 + 3.44265I$	$2.41460 - 6.50572I$
$u = -0.563838 + 1.100000I$ $a = 0.588855 + 0.266692I$ $b = 0.151018 - 0.642744I$	$-1.35617 + 1.08274I$	0
$u = -0.563838 - 1.100000I$ $a = 0.588855 - 0.266692I$ $b = 0.151018 + 0.642744I$	$-1.35617 - 1.08274I$	0
$u = -1.156150 + 0.472820I$ $a = 0.121369 + 1.326300I$ $b = 1.010250 - 0.803688I$	$-1.72873 + 6.64102I$	0
$u = -1.156150 - 0.472820I$ $a = 0.121369 - 1.326300I$ $b = 1.010250 + 0.803688I$	$-1.72873 - 6.64102I$	0
$u = -1.030570 + 0.768387I$ $a = -0.201547 + 0.870543I$ $b = 0.613952 - 1.108430I$	$-2.95554 + 5.40447I$	0
$u = -1.030570 - 0.768387I$ $a = -0.201547 - 0.870543I$ $b = 0.613952 + 1.108430I$	$-2.95554 - 5.40447I$	0
$u = -0.068549 + 1.287830I$ $a = -0.810185 - 0.460608I$ $b = 1.134510 + 0.753190I$	$-6.18575 - 11.73780I$	0
$u = -0.068549 - 1.287830I$ $a = -0.810185 + 0.460608I$ $b = 1.134510 - 0.753190I$	$-6.18575 + 11.73780I$	0
$u = -1.309510 + 0.340214I$ $a = -0.621421 - 1.131870I$ $b = -1.57219 + 0.91801I$	$-11.97080 + 5.03934I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.309510 - 0.340214I$ $a = -0.621421 + 1.131870I$ $b = -1.57219 - 0.91801I$	$-11.97080 - 5.03934I$	0
$u = -1.287910 + 0.440347I$ $a = 0.166868 - 0.867618I$ $b = -1.118380 - 0.115176I$	$-6.90938 - 1.20549I$	0
$u = -1.287910 - 0.440347I$ $a = 0.166868 + 0.867618I$ $b = -1.118380 + 0.115176I$	$-6.90938 + 1.20549I$	0
$u = 1.264220 + 0.532124I$ $a = 0.076859 - 0.873804I$ $b = 0.89361 + 1.16318I$	$-4.32234 - 4.89818I$	0
$u = 1.264220 - 0.532124I$ $a = 0.076859 + 0.873804I$ $b = 0.89361 - 1.16318I$	$-4.32234 + 4.89818I$	0
$u = -0.386755 + 0.494676I$ $a = 1.23844 + 1.06478I$ $b = -0.060694 - 0.503994I$	2.28288	$7.45974 + 0.I$
$u = -0.386755 - 0.494676I$ $a = 1.23844 - 1.06478I$ $b = -0.060694 + 0.503994I$	2.28288	$7.45974 + 0.I$
$u = 0.120184 + 1.398900I$ $a = -0.509998 - 0.015882I$ $b = 0.627531 + 0.109078I$	$-0.21933 - 1.79666I$	0
$u = 0.120184 - 1.398900I$ $a = -0.509998 + 0.015882I$ $b = 0.627531 - 0.109078I$	$-0.21933 + 1.79666I$	0
$u = 1.31493 + 0.53742I$ $a = -0.289141 + 1.212710I$ $b = -1.59502 - 0.85850I$	$-6.18575 - 11.73780I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 1.31493 - 0.53742I$ $a = -0.289141 - 1.212710I$ $b = -1.59502 + 0.85850I$	$-6.18575 + 11.73780I$	0
$u = -1.32529 + 0.51349I$ $a = -0.222146 - 0.710598I$ $b = -1.33116 + 0.54804I$	$-5.28119 + 6.47716I$	0
$u = -1.32529 - 0.51349I$ $a = -0.222146 + 0.710598I$ $b = -1.33116 - 0.54804I$	$-5.28119 - 6.47716I$	0
$u = \quad 0.515511 + 0.032987I$ $a = \quad 0.64753 + 1.88164I$ $b = \quad 1.43175 - 0.53223I$	$-6.25593 + 1.69778I$	$-10.84288 - 2.54059I$
$u = \quad 0.515511 - 0.032987I$ $a = \quad 0.64753 - 1.88164I$ $b = \quad 1.43175 + 0.53223I$	$-6.25593 - 1.69778I$	$-10.84288 + 2.54059I$
$u = \quad 1.41121 + 0.51529I$ $a = -0.079859 + 0.876591I$ $b = -0.861201 - 0.444000I$	$-4.83370 - 4.73328I$	0
$u = \quad 1.41121 - 0.51529I$ $a = -0.079859 - 0.876591I$ $b = -0.861201 + 0.444000I$	$-4.83370 + 4.73328I$	0
$u = \quad 0.283530 + 0.362246I$ $a = \quad 2.28902 + 0.53866I$ $b = -0.593632 - 0.143324I$	$-2.56983 - 1.25654I$	$-2.66105 + 0.95348I$
$u = \quad 0.283530 - 0.362246I$ $a = \quad 2.28902 - 0.53866I$ $b = -0.593632 + 0.143324I$	$-2.56983 + 1.25654I$	$-2.66105 - 0.95348I$
$u = -1.51877 + 0.51486I$ $a = -0.062077 - 0.706185I$ $b = -0.862019 + 0.734114I$	$-5.95387 + 8.42267I$	0

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.51877 - 0.51486I$ $a = -0.062077 + 0.706185I$ $b = -0.862019 - 0.734114I$	$-5.95387 - 8.42267I$	0
$u = -0.242253 + 0.308533I$ $a = 0.44630 - 2.65251I$ $b = 0.93673 + 1.17077I$	$-5.28119 - 6.47716I$	$-3.81235 + 1.99791I$
$u = -0.242253 - 0.308533I$ $a = 0.44630 + 2.65251I$ $b = 0.93673 - 1.17077I$	$-5.28119 + 6.47716I$	$-3.81235 - 1.99791I$
$u = 1.49349 + 0.67322I$ $a = -0.225108 + 0.704263I$ $b = -1.264860 - 0.403964I$	$-8.00578 - 8.92199I$	0
$u = 1.49349 - 0.67322I$ $a = -0.225108 - 0.704263I$ $b = -1.264860 + 0.403964I$	$-8.00578 + 8.92199I$	0
$u = 1.65262 + 0.39491I$ $a = 0.077126 + 0.559808I$ $b = -0.864364 + 0.178088I$	$-11.97080 + 5.03934I$	0
$u = 1.65262 - 0.39491I$ $a = 0.077126 - 0.559808I$ $b = -0.864364 - 0.178088I$	$-11.97080 - 5.03934I$	0
$u = -2.85887$ $a = 0.148014$ $b = 1.00010$	-3.31997	0

III. $\boldsymbol{I_3^u = \langle 4170u^{11} + 9821u^{10} + \cdots + 1318b - 848,\ 60429u^{11} + 266417u^{10} + \cdots + 23724a - 45544,\ 3u^{12} + 5u^{11} + \cdots + 8u + 4\rangle}$

(i) Arc colorings

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

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

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -2.54717u^{11} - 11.2299u^{10} + \cdots + 29.6340u + 1.91974 \\ -3.16388u^{11} - 7.45144u^{10} + \cdots + 16.9590u + 0.643399 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -5.71105u^{11} - 18.6813u^{10} + \cdots + 46.5931u + 2.56314 \\ -3.16388u^{11} - 7.45144u^{10} + \cdots + 16.9590u + 0.643399 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -2.28746u^{11} + 5.09169u^{10} + \cdots - 52.3658u - 25.1053 \\ 24.7413u^{11} + 29.8174u^{10} + \cdots - 9.18968u + 17.4972 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -9.64285u^{11} - 18.4134u^{10} + \cdots + 36.7907u + 4.46412 \\ -10.9256u^{11} - 14.9294u^{10} + \cdots + 21.2686u + 3.55994 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -12.9909u^{11} - 37.2805u^{10} + \cdots + 102.002u + 20.0754 \\ -12.9856u^{11} - 29.9302u^{10} + \cdots + 60.8786u + 3.42489 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -9.09543u^{11} - 25.3812u^{10} + \cdots + 93.8650u + 34.7039 \\ 3.10470u^{11} - 9.30880u^{10} + \cdots + 67.2762u + 27.0334 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -3.07069u^{11} - 16.1858u^{10} + \cdots + 47.2532u + 3.75282 \\ -0.291351u^{11} - 1.85812u^{10} + \cdots + 10.9272u + 4.25493 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -3.07069u^{11} - 16.1858u^{10} + \cdots + 47.2532u + 3.75282 \\ -0.291351u^{11} - 1.85812u^{10} + \cdots + 10.9272u + 4.25493 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{507188}{53379}u^{11} - \frac{3141961}{160137}u^{10} + \cdots - \frac{5552344}{53379}u - \frac{19591552}{160137}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$9(3u^6 - 2u^5 + 7u^4 - u^3 + 5u^2 + 1)^2$
c_2, c_{10}	$3(3u^{12} - 5u^{11} + \cdots - 8u + 4)$
c_3, c_6	$u^{12} + 5u^{11} + \cdots - 5u + 3$
c_4, c_8	$3(3u^{12} + 5u^{11} + \cdots + 8u + 4)$
c_5	$9(3u^6 + 2u^5 + 7u^4 + u^3 + 5u^2 + 1)^2$
c_7	$(u^6 - 3u^5 + 5u^4 - 7u^3 + 9u^2 - 10u + 9)^2$
c_9, c_{11}	$9(9u^{12} - 11u^{11} + \cdots - 2u + 3)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$81(9y^6 + 38y^5 + 75y^4 + 75y^3 + 39y^2 + 10y + 1)^2$
c_2, c_4, c_8 c_{10}	$9(9y^{12} - 43y^{11} + \cdots - 144y + 16)$
c_3, c_6	$y^{12} + 3y^{11} + \cdots + 323y + 9$
c_7	$(y^6 + y^5 + y^4 - y^3 + 31y^2 + 62y + 81)^2$
c_9, c_{11}	$81(81y^{12} + 95y^{11} + \cdots + 20y + 9)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.794683 + 0.322780I$ $a = 0.964563 + 0.565969I$ $b = 0.98698 - 1.80455I$	$0.26321 + 1.57785I$	$5.58560 - 0.74731I$
$u = -0.794683 - 0.322780I$ $a = 0.964563 - 0.565969I$ $b = 0.98698 + 1.80455I$	$0.26321 - 1.57785I$	$5.58560 + 0.74731I$
$u = -0.744705 + 0.252741I$ $a = -1.000590 + 0.254282I$ $b = 0.42147 - 1.53855I$	$-6.15131 + 7.24013I$	$-9.06270 - 5.78437I$
$u = -0.744705 - 0.252741I$ $a = -1.000590 - 0.254282I$ $b = 0.42147 + 1.53855I$	$-6.15131 - 7.24013I$	$-9.06270 + 5.78437I$
$u = -0.272046 + 1.252650I$ $a = 0.447545 + 0.053587I$ $b = -0.069213 - 0.195664I$	$0.26321 + 1.57785I$	$5.58560 - 0.74731I$
$u = -0.272046 - 1.252650I$ $a = 0.447545 - 0.053587I$ $b = -0.069213 + 0.195664I$	$0.26321 - 1.57785I$	$5.58560 + 0.74731I$
$u = -1.106930 + 0.691135I$ $a = -0.164599 + 0.949619I$ $b = 0.754119 - 0.959663I$	$-2.33657 + 4.85586I$	$0.31456 - 2.62742I$
$u = -1.106930 - 0.691135I$ $a = -0.164599 - 0.949619I$ $b = 0.754119 + 0.959663I$	$-2.33657 - 4.85586I$	$0.31456 + 2.62742I$
$u = 0.669060 + 0.005462I$ $a = 1.186220 - 0.719007I$ $b = 1.57189 - 0.45536I$	$-2.33657 - 4.85586I$	$0.31456 + 2.62742I$
$u = 0.669060 - 0.005462I$ $a = 1.186220 + 0.719007I$ $b = 1.57189 + 0.45536I$	$-2.33657 + 4.85586I$	$0.31456 - 2.62742I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.41598 + 0.57815I$ $a = -0.044254 + 0.717304I$ $b = -1.165250 - 0.513557I$	$-6.15131 - 7.24013I$	$-9.06270 + 5.78437I$
$u = 1.41598 - 0.57815I$ $a = -0.044254 - 0.717304I$ $b = -1.165250 + 0.513557I$	$-6.15131 + 7.24013I$	$-9.06270 - 5.78437I$

IV. $\boldsymbol{I_4^u = \langle -u^3 + b + u,\ u^7 - u^6 - 4u^5 + 3u^4 + 5u^3 - u^2 + a - 2u - 3,\ u^8 - 4u^6 + 5u^4 + u^3 - u^2 - 2u - 1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^7 + u^6 + 4u^5 - 3u^4 - 5u^3 + u^2 + 2u + 3 \\ u^3 - u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^7 + u^6 + 4u^5 - 3u^4 - 4u^3 + u^2 + u + 3 \\ u^3 - u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -2u^7 + 7u^5 - u^4 - 7u^3 + 3 \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 2u^7 - 2u^6 - 8u^5 + 6u^4 + 9u^3 - 3u^2 - 3u - 5 \\ -u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^7 - 4u^5 + u^4 + 4u^3 - u^2 - 2 \\ u^6 - 2u^4 - u^3 + 2u + 1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^6 - u^5 + 2u^4 + 2u^3 - u^2 - u - 1 \\ -u^6 + 2u^4 - u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^7 + u^6 + 5u^5 - 3u^4 - 6u^3 + u^2 + u + 3 \\ u^7 - 2u^5 + u^3 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^7 + u^6 + 5u^5 - 3u^4 - 6u^3 + u^2 + u + 3 \\ u^7 - 2u^5 + u^3 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 8u^7 - 7u^6 - 34u^5 + 28u^4 + 44u^3 - 23u^2 - 14u - 22$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^8 + 3u^7 + 6u^6 + 9u^5 + 8u^4 + 7u^3 + 4u^2 + 2u + 1$
c_2, c_{10}	$u^8 - 4u^6 + 5u^4 - u^3 - u^2 + 2u - 1$
c_3, c_6	$u^8 + u^6 + u^4 + 4u^3 + 5u^2 + 4u + 1$
c_4, c_8	$u^8 - 4u^6 + 5u^4 + u^3 - u^2 - 2u - 1$
c_5	$u^8 - 3u^7 + 6u^6 - 9u^5 + 8u^4 - 7u^3 + 4u^2 - 2u + 1$
c_7	$u^8 + 4u^7 + 10u^6 + 15u^5 + 23u^4 + 31u^3 + 21u^2 + 5u - 1$
c_9, c_{11}	$u^8 + u^7 - 2u^6 - 3u^5 - u^4 + 2u^3 + 2u^2 - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^8 + 3y^7 - 2y^6 - 19y^5 - 24y^4 - 9y^3 + 4y^2 + 4y + 1$
c_2, c_4, c_8 c_{10}	$y^8 - 8y^7 + 26y^6 - 42y^5 + 31y^4 - 3y^3 - 5y^2 - 2y + 1$
c_3, c_6	$y^8 + 2y^7 + 3y^6 + 12y^5 + 13y^4 - 4y^3 - 5y^2 - 6y + 1$
c_7	$y^8 + 4y^7 + 26y^6 + 29y^5 - 23y^4 - 165y^3 + 85y^2 - 67y + 1$
c_9, c_{11}	$y^8 - 5y^7 + 8y^6 - 5y^5 + 3y^4 - 4y^3 + 6y^2 - 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.29302$ $a = 1.15106$ $b = 0.868767$	-3.51228	-12.4280
$u = 1.244870 + 0.382035I$ $a = 0.076911 - 0.739194I$ $b = 0.139250 + 1.338340I$	$-5.40373 - 6.46685I$	$-9.03927 + 7.27263I$
$u = 1.244870 - 0.382035I$ $a = 0.076911 + 0.739194I$ $b = 0.139250 - 1.338340I$	$-5.40373 + 6.46685I$	$-9.03927 - 7.27263I$
$u = -0.213724 + 0.605076I$ $a = 0.588443 + 0.997522I$ $b = 0.438706 - 0.743690I$	$0.792434 + 1.108790I$	$2.96197 - 2.81670I$
$u = -0.213724 - 0.605076I$ $a = 0.588443 - 0.997522I$ $b = 0.438706 + 0.743690I$	$0.792434 - 1.108790I$	$2.96197 + 2.81670I$
$u = -1.399610 + 0.181081I$ $a = -0.542533 - 0.395115I$ $b = -1.20440 + 0.87714I$	$-9.65027 + 6.44768I$	$-7.33532 - 4.67890I$
$u = -1.399610 - 0.181081I$ $a = -0.542533 + 0.395115I$ $b = -1.20440 - 0.87714I$	$-9.65027 - 6.44768I$	$-7.33532 + 4.67890I$
$u = -0.556101$ $a = 2.60330$ $b = 0.384128$	2.42660	-24.7470

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$81(3u^6-2u^5+7u^4-u^3+5u^2+1)^2$ $\cdot(u^8+3u^7+6u^6+9u^5+8u^4+7u^3+4u^2+2u+1)$ $\cdot(u^{29}-8u^{28}+\cdots-26u+4)(3u^{34}+5u^{33}+\cdots-313u-43)^2$
c_2, c_{10}	$9(u^8-4u^6+\cdots+2u-1)(3u^{12}-5u^{11}+\cdots-8u+4)$ $\cdot(u^{29}-12u^{27}+\cdots+4u-4)(3u^{68}-16u^{67}+\cdots+121u-223)$
c_3, c_6	$(u^8+u^6+u^4+4u^3+5u^2+4u+1)(u^{12}+5u^{11}+\cdots-5u+3)$ $\cdot(u^{29}-2u^{28}+\cdots+15u+1)(u^{68}-6u^{67}+\cdots-210229u+37581)$
c_4, c_8	$9(u^8-4u^6+\cdots-2u-1)(3u^{12}+5u^{11}+\cdots+8u+4)$ $\cdot(u^{29}-12u^{27}+\cdots+4u-4)(3u^{68}-16u^{67}+\cdots+121u-223)$
c_5	$81(3u^6+2u^5+7u^4+u^3+5u^2+1)^2$ $\cdot(u^8-3u^7+6u^6-9u^5+8u^4-7u^3+4u^2-2u+1)$ $\cdot(u^{29}-8u^{28}+\cdots-26u+4)(3u^{34}+5u^{33}+\cdots-313u-43)^2$
c_7	$(u^6-3u^5+5u^4-7u^3+9u^2-10u+9)^2$ $\cdot(u^8+4u^7+10u^6+15u^5+23u^4+31u^3+21u^2+5u-1)$ $\cdot(u^{29}-17u^{28}+\cdots+520u-92)(u^{34}+7u^{33}+\cdots-1316u-99)^2$
c_9, c_{11}	$81(u^8+u^7-2u^6-3u^5-u^4+2u^3+2u^2-1)$ $\cdot(9u^{12}-11u^{11}+\cdots-2u+3)(u^{29}+u^{28}+\cdots+u-1)$ $\cdot(9u^{68}+148u^{67}+\cdots-31630u-5631)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$6561(9y^6+38y^5+75y^4+75y^3+39y^2+10y+1)^2$ $\cdot(y^8+3y^7-2y^6-19y^5-24y^4-9y^3+4y^2+4y+1)$ $\cdot(y^{29}+16y^{28}+\cdots-356y-16)$ $\cdot(9y^{34}+167y^{33}+\cdots+5317y+1849)^2$
c_2, c_4, c_8 c_{10}	$81(y^8-8y^7+26y^6-42y^5+31y^4-3y^3-5y^2-2y+1)$ $\cdot(9y^{12}-43y^{11}+\cdots-144y+16)(y^{29}-24y^{28}+\cdots+32y-16)$ $\cdot(9y^{68}-436y^{67}+\cdots-726903y+49729)$
c_3, c_6	$(y^8+2y^7+3y^6+12y^5+13y^4-4y^3-5y^2-6y+1)$ $\cdot(y^{12}+3y^{11}+\cdots+323y+9)(y^{29}-24y^{28}+\cdots+155y-1)$ $\cdot(y^{68}-8y^{67}+\cdots-8820260035y+1412331561)$
c_7	$(y^6+y^5+y^4-y^3+31y^2+62y+81)^2$ $\cdot(y^8+4y^7+26y^6+29y^5-23y^4-165y^3+85y^2-67y+1)$ $\cdot(y^{29}+3y^{28}+\cdots-62088y-8464)$ $\cdot(y^{34}+9y^{33}+\cdots-255568y+9801)^2$
c_9, c_{11}	$6561(y^8-5y^7+8y^6-5y^5+3y^4-4y^3+6y^2-4y+1)$ $\cdot(81y^{12}+95y^{11}+\cdots+20y+9)(y^{29}+15y^{28}+\cdots-53y-1)$ $\cdot(81y^{68}-4570y^{67}+\cdots+222956684y+31708161)$