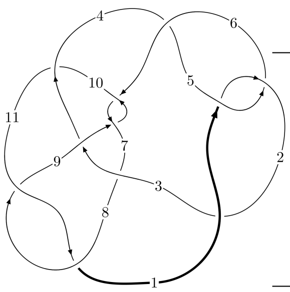
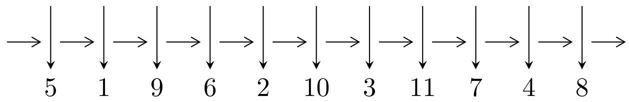
$11a_{123}$ ($K11a_{123}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$
\begin{aligned}
I_1^u = \langle & 31496267249u^{24} - 1954119851u^{23} + \cdots + 3535766053066b - 294716823050, \\
& -258242463245u^{24} + 140426199118u^{23} + \cdots + 707153210612a + 177949498093, \\
& u^{25} - 2u^{24} + \cdots + 17u - 4\rangle \\
I_2^u = \langle & -5u^{18}a - 45u^{18} + \cdots + 27a + 5,\ -6u^{18}a + 26u^{18} + \cdots - 6a + 39,\ u^{19} - u^{18} + \cdots + u^2 - 1\rangle \\
I_3^u = \langle & b + 1,\ 2a + 2u + 1,\ u^3 + u^2 - 1\rangle \\
I_4^u = \langle & b - a - 1,\ a^2 + 2a + 2,\ u - 1\rangle
\end{aligned}
$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 68 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. $\boldsymbol{I_1^u =}$
$\boldsymbol{\langle 3.15\times10^{10}u^{24}-1.95\times10^{9}u^{23}+\cdots+3.54\times10^{11}b-2.95\times10^{11},\ -2.58\times10^{11}u^{24}+ 1.40\times10^{11}u^{23}+\cdots+7.07\times10^{11}a+1.78\times10^{11},\ u^{25}-2u^{24}+\cdots+17u-4\rangle}$

(i) Arc colorings

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

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

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

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

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

$$a_4 = \begin{pmatrix}u^3\\u^5-u^3+u\end{pmatrix}$$

$$a_8 = \begin{pmatrix}0.365186u^{24}-0.198580u^{23}+\cdots-5.28891u-0.251642\\-0.0890790u^{24}+0.00552672u^{23}+\cdots-1.23519u+0.833530\end{pmatrix}$$

$$a_7 = \begin{pmatrix}0.267603u^{24}-0.170382u^{23}+\cdots-4.06703u-0.0336839\\-0.227826u^{24}+0.244721u^{23}+\cdots+1.30904u+0.0124582\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}-0.361710u^{24}+0.276963u^{23}+\cdots+5.53501u+0.291576\\0.135603u^{24}-0.0416754u^{23}+\cdots+1.55999u-0.715415\end{pmatrix}$$

$$a_9 = \begin{pmatrix}0.690139u^{24}-0.455342u^{23}+\cdots-9.24059u-0.0115544\\-0.314729u^{24}+0.224657u^{23}+\cdots-1.21944u+0.939187\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-0.323410u^{24}+0.155971u^{23}+\cdots+3.99738u+0.846565\\0.110684u^{24}-0.103445u^{23}+\cdots+0.590987u-0.502652\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-0.323410u^{24}+0.155971u^{23}+\cdots+3.99738u+0.846565\\0.110684u^{24}-0.103445u^{23}+\cdots+0.590987u-0.502652\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -\frac{781324937945}{707153210612}u^{24} - \frac{104635078433}{707153210612}u^{23} + \cdots + \frac{4120329941333}{176788302653}u - \frac{3444311623734}{176788302653}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{25} + 2u^{24} + \cdots + 17u + 4$
c_2, c_4	$u^{25} + 8u^{24} + \cdots + 241u + 16$
c_3	$u^{25} - 3u^{24} + \cdots - 96u + 128$
c_6, c_8, c_9 c_{11}	$u^{25} + 3u^{24} + \cdots + 2u + 1$
c_7, c_{10}	$8(8u^{25} + 4u^{24} + \cdots + 2u + 2)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{25} - 8y^{24} + \cdots + 241y - 16$
c_2, c_4	$y^{25} + 20y^{24} + \cdots + 19233y - 256$
c_3	$y^{25} + 9y^{24} + \cdots - 72704y - 16384$
c_6, c_8, c_9 c_{11}	$y^{25} + 17y^{24} + \cdots + 16y - 1$
c_7, c_{10}	$64(64y^{25} + 1072y^{24} + \cdots + 20y - 4)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.831869 + 0.519995I$ $a = 0.60247 - 1.53377I$ $b = 0.604789 + 0.633838I$	$-0.94821 - 3.43572I$	$-13.2032 + 6.7534I$
$u = 0.831869 - 0.519995I$ $a = 0.60247 + 1.53377I$ $b = 0.604789 - 0.633838I$	$-0.94821 + 3.43572I$	$-13.2032 - 6.7534I$
$u = -0.096629 + 0.930099I$ $a = 0.10164 + 1.51799I$ $b = -0.269095 - 1.312200I$	$7.47156 - 5.57189I$	$-2.30391 + 4.65826I$
$u = -0.096629 - 0.930099I$ $a = 0.10164 - 1.51799I$ $b = -0.269095 + 1.312200I$	$7.47156 + 5.57189I$	$-2.30391 - 4.65826I$
$u = -0.873066 + 0.713586I$ $a = -0.343451 - 0.174556I$ $b = -0.321236 - 0.053568I$	$2.48771 + 2.73173I$	$-3.19620 - 2.74281I$
$u = -0.873066 - 0.713586I$ $a = -0.343451 + 0.174556I$ $b = -0.321236 + 0.053568I$	$2.48771 - 2.73173I$	$-3.19620 + 2.74281I$
$u = 0.890108 + 0.788825I$ $a = -0.718513 - 0.942420I$ $b = 1.43833 - 0.04819I$	$2.16301 - 2.96631I$	$-1.51503 + 3.55668I$
$u = 0.890108 - 0.788825I$ $a = -0.718513 + 0.942420I$ $b = 1.43833 + 0.04819I$	$2.16301 + 2.96631I$	$-1.51503 - 3.55668I$
$u = 0.746418 + 0.296773I$ $a = -0.848177 + 0.452473I$ $b = 0.188697 - 0.408041I$	$-0.644117 - 0.222126I$	$-12.29988 - 0.69416I$
$u = 0.746418 - 0.296773I$ $a = -0.848177 - 0.452473I$ $b = 0.188697 + 0.408041I$	$-0.644117 + 0.222126I$	$-12.29988 + 0.69416I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.791605 + 0.124227I$ $a = 1.178100 + 0.337562I$ $b = 1.040980 + 0.275015I$	$-2.97368 + 0.31797I$	$-15.9411 - 13.1085I$
$u = -0.791605 - 0.124227I$ $a = 1.178100 - 0.337562I$ $b = 1.040980 - 0.275015I$	$-2.97368 - 0.31797I$	$-15.9411 + 13.1085I$
$u = -1.142430 + 0.382078I$ $a = -1.268030 - 0.422167I$ $b = -0.409233 + 1.264710I$	$3.90197 + 10.08690I$	$-8.02551 - 8.45672I$
$u = -1.142430 - 0.382078I$ $a = -1.268030 + 0.422167I$ $b = -0.409233 - 1.264710I$	$3.90197 - 10.08690I$	$-8.02551 + 8.45672I$
$u = 0.770950 + 0.937113I$ $a = 0.30856 - 1.63900I$ $b = -0.48655 + 1.44328I$	$12.8491 + 9.5213I$	$-4.07416 - 4.01278I$
$u = 0.770950 - 0.937113I$ $a = 0.30856 + 1.63900I$ $b = -0.48655 - 1.44328I$	$12.8491 - 9.5213I$	$-4.07416 + 4.01278I$
$u = -0.749482 + 1.006980I$ $a = -0.24489 - 1.53795I$ $b = 0.065690 + 1.341370I$	$11.66030 + 0.32743I$	$-0.684836 - 0.302346I$
$u = -0.749482 - 1.006980I$ $a = -0.24489 + 1.53795I$ $b = 0.065690 - 1.341370I$	$11.66030 - 0.32743I$	$-0.684836 + 0.302346I$
$u = 1.286720 + 0.219140I$ $a = 0.295022 - 0.018174I$ $b = -0.140637 + 1.182510I$	$2.59539 + 1.53840I$	$-3.54408 - 4.89308I$
$u = 1.286720 - 0.219140I$ $a = 0.295022 + 0.018174I$ $b = -0.140637 - 1.182510I$	$2.59539 - 1.53840I$	$-3.54408 + 4.89308I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.033460+0.815877I$ $a = -1.39808+1.83834I$ $b = -0.53103-1.43134I$	$12.0149-15.9713I$	$-5.35626+8.57789I$
$u = 1.033460-0.815877I$ $a = -1.39808-1.83834I$ $b = -0.53103+1.43134I$	$12.0149+15.9713I$	$-5.35626-8.57789I$
$u = -1.076920+0.848675I$ $a = 1.04834+1.34169I$ $b = 0.153566-1.310870I$	$10.62700+6.42707I$	$-2.25103-5.26300I$
$u = -1.076920-0.848675I$ $a = 1.04834-1.34169I$ $b = 0.153566+1.310870I$	$10.62700-6.42707I$	$-2.25103+5.26300I$
$u = 0.341201$ $a = -1.17598$ $b = 0.331472$	-0.684794	-14.4600

II. $I_2^u = \langle -5u^{18}a - 45u^{18} + \cdots + 27a + 5,\ -6u^{18}a + 26u^{18} + \cdots - 6a + 39,\ u^{19} - u^{18} + \cdots + u^2 - 1\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} a \\ 0.147059au^{18} + 1.32353u^{18} + \cdots - 0.794118a - 0.147059 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.176471au^{18} + 0.588235u^{18} + \cdots + 0.647059a - 0.176471 \\ 0.205882au^{18} + 1.85294u^{18} + \cdots - 0.911765a - 0.205882 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1.32353au^{18} - 4.08824u^{18} + \cdots - 0.147059a - 6.32353 \\ -0.205882au^{18} + 0.147059u^{18} + \cdots - 0.0882353a + 0.205882 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^{18} - 3u^{16} + 8u^{14} - 13u^{12} + 17u^{10} - 15u^8 + 10u^6 - 2u^4 - u^2 + 1 \\ -u^{18} + 2u^{16} - 5u^{14} + 6u^{12} - 5u^{10} + 2u^8 + 2u^6 - 4u^4 + u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.794118au^{18} - 3.85294u^{18} + \cdots - 0.0882353a - 5.79412 \\ 0.323529au^{18} + 1.91176u^{18} + \cdots - 0.147059a + 2.67647 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.794118au^{18} - 3.85294u^{18} + \cdots - 0.0882353a - 5.79412 \\ 0.323529au^{18} + 1.91176u^{18} + \cdots - 0.147059a + 2.67647 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{18} + 12u^{16} - 4u^{15} - 32u^{14} + 8u^{13} + 56u^{12} - 20u^{11} - 72u^{10} + 24u^9 + 76u^8 - 24u^7 - 52u^6 + 12u^5 + 24u^4 - 4u^3 - 4u^2 - 8u - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$(u^{19} + u^{18} + \cdots - u^2 + 1)^2$
c_2, c_4	$(u^{19} + 5u^{18} + \cdots + 2u + 1)^2$
c_3	$(u^{19} + u^{18} + \cdots + 2u - 1)^2$
c_6, c_8, c_9 c_{11}	$u^{38} - 7u^{37} + \cdots - 19u + 2$
c_7, c_{10}	$u^{38} - 5u^{37} + \cdots + 8230u + 15341$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$(y^{19} - 5y^{18} + \cdots + 2y - 1)^2$
c_2, c_4	$(y^{19} + 19y^{18} + \cdots + 10y - 1)^2$
c_3	$(y^{19} + 7y^{18} + \cdots + 2y - 1)^2$
c_6, c_8, c_9 c_{11}	$y^{38} + 27y^{37} + \cdots - 21y + 4$
c_7, c_{10}	$y^{38} + 23y^{37} + \cdots + 2526338154y + 235346281$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.964317 + 0.230449I$ $a = -0.985016 - 0.274220I$ $b = 0.134173 - 0.930763I$	$-0.332249 - 0.168160I$	$-14.1683 + 0.9143I$
$u = 0.964317 + 0.230449I$ $a = -0.491180 + 0.989591I$ $b = -0.217752 - 0.156279I$	$-0.332249 - 0.168160I$	$-14.1683 + 0.9143I$
$u = 0.964317 - 0.230449I$ $a = -0.985016 + 0.274220I$ $b = 0.134173 + 0.930763I$	$-0.332249 + 0.168160I$	$-14.1683 - 0.9143I$
$u = 0.964317 - 0.230449I$ $a = -0.491180 - 0.989591I$ $b = -0.217752 + 0.156279I$	$-0.332249 + 0.168160I$	$-14.1683 - 0.9143I$
$u = -0.978202 + 0.313897I$ $a = -0.849902 - 0.223654I$ $b = -0.852454 - 0.070284I$	$0.16029 + 5.52702I$	$-12.4279 - 7.0025I$
$u = -0.978202 + 0.313897I$ $a = 1.41152 + 0.19798I$ $b = 0.462406 - 1.206880I$	$0.16029 + 5.52702I$	$-12.4279 - 7.0025I$
$u = -0.978202 - 0.313897I$ $a = -0.849902 + 0.223654I$ $b = -0.852454 + 0.070284I$	$0.16029 - 5.52702I$	$-12.4279 + 7.0025I$
$u = -0.978202 - 0.313897I$ $a = 1.41152 - 0.19798I$ $b = 0.462406 + 1.206880I$	$0.16029 - 5.52702I$	$-12.4279 + 7.0025I$
$u = -0.820272 + 0.802988I$ $a = 0.377406 + 0.541506I$ $b = 0.357882 + 0.461087I$	$6.12368 + 1.53005I$	$-8.20605 - 2.54963I$
$u = -0.820272 + 0.802988I$ $a = -0.09753 + 2.28421I$ $b = -0.052144 - 1.206600I$	$6.12368 + 1.53005I$	$-8.20605 - 2.54963I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.820272 - 0.802988I$ $a = 0.377406 - 0.541506I$ $b = 0.357882 - 0.461087I$	$6.12368 - 1.53005I$	$-8.20605 + 2.54963I$
$u = -0.820272 - 0.802988I$ $a = -0.09753 - 2.28421I$ $b = -0.052144 + 1.206600I$	$6.12368 - 1.53005I$	$-8.20605 + 2.54963I$
$u = 0.809650 + 0.858173I$ $a = 0.565390 + 0.425293I$ $b = -1.179350 + 0.174669I$	$7.70394 + 3.71612I$	$-5.80100 - 2.45937I$
$u = 0.809650 + 0.858173I$ $a = -0.62274 + 1.72512I$ $b = 0.48129 - 1.51282I$	$7.70394 + 3.71612I$	$-5.80100 - 2.45937I$
$u = 0.809650 - 0.858173I$ $a = 0.565390 - 0.425293I$ $b = -1.179350 - 0.174669I$	$7.70394 - 3.71612I$	$-5.80100 + 2.45937I$
$u = 0.809650 - 0.858173I$ $a = -0.62274 - 1.72512I$ $b = 0.48129 + 1.51282I$	$7.70394 - 3.71612I$	$-5.80100 + 2.45937I$
$u = -0.635698 + 0.450549I$ $a = -0.230067 + 0.608858I$ $b = -0.213170 - 1.280760I$	$4.70093 + 1.72326I$	$-4.18035 - 5.18112I$
$u = -0.635698 + 0.450549I$ $a = -1.94079 - 0.02901I$ $b = -0.463625 + 0.999486I$	$4.70093 + 1.72326I$	$-4.18035 - 5.18112I$
$u = -0.635698 - 0.450549I$ $a = -0.230067 - 0.608858I$ $b = -0.213170 + 1.280760I$	$4.70093 - 1.72326I$	$-4.18035 + 5.18112I$
$u = -0.635698 - 0.450549I$ $a = -1.94079 + 0.02901I$ $b = -0.463625 - 0.999486I$	$4.70093 - 1.72326I$	$-4.18035 + 5.18112I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.949254+0.773576I$ $a=\ \ 0.620189-0.094867I$ $b=\ \ 0.423801-0.309302I$	$5.72757+4.39903I$	$-8.93348-2.80289I$
$u=-0.949254+0.773576I$ $a=-1.61357-1.95000I$ $b=-0.116946+1.190010I$	$5.72757+4.39903I$	$-8.93348-2.80289I$
$u=-0.949254-0.773576I$ $a=\ \ 0.620189+0.094867I$ $b=\ \ 0.423801+0.309302I$	$5.72757-4.39903I$	$-8.93348+2.80289I$
$u=-0.949254-0.773576I$ $a=-1.61357+1.95000I$ $b=-0.116946-1.190010I$	$5.72757-4.39903I$	$-8.93348+2.80289I$
$u=\ \ 0.903405+0.838368I$ $a=\ \ 0.86034-1.32154I$ $b=-0.60508+1.51193I$	$11.59750-3.11880I$	$-2.41376+2.69239I$
$u=\ \ 0.903405+0.838368I$ $a=-0.98440+2.02627I$ $b=-0.66723-1.46348I$	$11.59750-3.11880I$	$-2.41376+2.69239I$
$u=\ \ 0.903405-0.838368I$ $a=\ \ 0.86034+1.32154I$ $b=-0.60508-1.51193I$	$11.59750+3.11880I$	$-2.41376-2.69239I$
$u=\ \ 0.903405-0.838368I$ $a=-0.98440-2.02627I$ $b=-0.66723+1.46348I$	$11.59750+3.11880I$	$-2.41376-2.69239I$
$u=\ \ 0.975971+0.799116I$ $a=\ \ 0.229088+0.972721I$ $b=-1.211890-0.090804I$	$7.18622-9.88550I$	$-6.86128+7.31129I$
$u=\ \ 0.975971+0.799116I$ $a=\ \ 1.30550-2.02733I$ $b=\ \ 0.54897+1.49405I$	$7.18622-9.88550I$	$-6.86128+7.31129I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.975971 - 0.799116I$		
$a = 0.229088 - 0.972721I$	$7.18622 + 9.88550I$	$-6.86128 - 7.31129I$
$b = -1.211890 + 0.090804I$		
$u = 0.975971 - 0.799116I$		
$a = 1.30550 + 2.02733I$	$7.18622 + 9.88550I$	$-6.86128 - 7.31129I$
$b = 0.54897 - 1.49405I$		
$u = 0.667698$		
$a = 6.45400 + 5.52977I$	2.38250	-15.4720
$b = 0.072948 - 1.007950I$		
$u = 0.667698$		
$a = 6.45400 - 5.52977I$	2.38250	-15.4720
$b = 0.072948 + 1.007950I$		
$u = -0.103765 + 0.589022I$		
$a = 0.054068 - 0.769378I$	$2.82151 - 2.32534I$	$-6.27174 + 3.09456I$
$b = -0.625152 - 0.214266I$		
$u = -0.103765 + 0.589022I$		
$a = -0.56231 - 1.56828I$	$2.82151 - 2.32534I$	$-6.27174 + 3.09456I$
$b = 0.223313 + 1.232590I$		
$u = -0.103765 - 0.589022I$		
$a = 0.054068 + 0.769378I$	$2.82151 + 2.32534I$	$-6.27174 - 3.09456I$
$b = -0.625152 + 0.214266I$		
$u = -0.103765 - 0.589022I$		
$a = -0.56231 + 1.56828I$	$2.82151 + 2.32534I$	$-6.27174 - 3.09456I$
$b = 0.223313 - 1.232590I$		

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{17}{4}u^2+\frac{17}{4}u-\frac{41}{4}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^3 - y^2 + 2y - 1$
c_2, c_4	$y^3 + 3y^2 + 2y - 1$
c_3	y^3
c_6, c_8, c_9 c_{11}	$(y-1)^3$
c_7, c_{10}	$64(64y^3 + 48y^2 + 8y - 1)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.877439 + 0.744862I$ $a = \quad 0.377439 - 0.744862I$ $b = -1.00000$	$1.37919 + 2.82812I$	$-13.06503 - 2.38969I$
$u = -0.877439 - 0.744862I$ $a = \quad 0.377439 + 0.744862I$ $b = -1.00000$	$1.37919 - 2.82812I$	$-13.06503 + 2.38969I$
$u = \quad 0.754878$ $a = -1.25488$ $b = -1.00000$	-2.75839	-4.61990

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5	$(y-1)^2$
c_3, c_6, c_8 c_9, c_{11}	$(y+1)^2$
c_7, c_{10}	y^2+4

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -1.00000 + 1.00000I$ $b = 1.000000I$	1.64493	-8.00000
$u = 1.00000$ $a = -1.00000 - 1.00000I$ $b = -1.000000I$	1.64493	-8.00000

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^2)(u^3+u^2-1)(u^{19}+u^{18}+\cdots-u^2+1)^2$ $\cdot(u^{25}+2u^{24}+\cdots+17u+4)$
c_2	$((u+1)^2)(u^3+u^2+2u+1)(u^{19}+5u^{18}+\cdots+2u+1)^2$ $\cdot(u^{25}+8u^{24}+\cdots+241u+16)$
c_3	$u^3(u^2+1)(u^{19}+u^{18}+\cdots+2u-1)^2(u^{25}-3u^{24}+\cdots-96u+128)$
c_4	$((u-1)^2)(u^3-u^2+2u-1)(u^{19}+5u^{18}+\cdots+2u+1)^2$ $\cdot(u^{25}+8u^{24}+\cdots+241u+16)$
c_5	$((u+1)^2)(u^3-u^2+1)(u^{19}+u^{18}+\cdots-u^2+1)^2$ $\cdot(u^{25}+2u^{24}+\cdots+17u+4)$
c_6, c_8	$((u-1)^3)(u^2+1)(u^{25}+3u^{24}+\cdots+2u+1)(u^{38}-7u^{37}+\cdots-19u+2)$
c_7	$64(u^2+2u+2)(8u^3+4u^2+4u+1)(8u^{25}+4u^{24}+\cdots+2u+2)$ $\cdot(u^{38}-5u^{37}+\cdots+8230u+15341)$
c_9, c_{11}	$((u+1)^3)(u^2+1)(u^{25}+3u^{24}+\cdots+2u+1)(u^{38}-7u^{37}+\cdots-19u+2)$
c_{10}	$64(u^2-2u+2)(8u^3-4u^2+4u-1)(8u^{25}+4u^{24}+\cdots+2u+2)$ $\cdot(u^{38}-5u^{37}+\cdots+8230u+15341)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$((y-1)^2)(y^3-y^2+2y-1)(y^{19}-5y^{18}+\cdots+2y-1)^2$ $\cdot\,(y^{25}-8y^{24}+\cdots+241y-16)$
c_2, c_4	$((y-1)^2)(y^3+3y^2+2y-1)(y^{19}+19y^{18}+\cdots+10y-1)^2$ $\cdot\,(y^{25}+20y^{24}+\cdots+19233y-256)$
c_3	$y^3(y+1)^2(y^{19}+7y^{18}+\cdots+2y-1)^2$ $\cdot\,(y^{25}+9y^{24}+\cdots-72704y-16384)$
c_6, c_8, c_9 c_{11}	$((y-1)^3)(y+1)^2(y^{25}+17y^{24}+\cdots+16y-1)$ $\cdot\,(y^{38}+27y^{37}+\cdots-21y+4)$
c_7, c_{10}	$4096(y^2+4)(64y^3+48y^2+8y-1)(64y^{25}+1072y^{24}+\cdots+20y-4)$ $\cdot\,(y^{38}+23y^{37}+\cdots+2526338154y+235346281)$