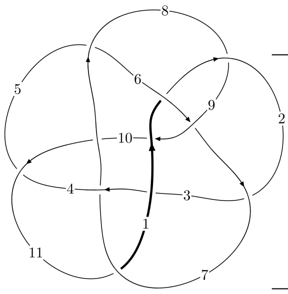
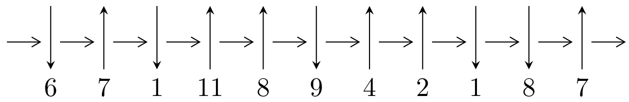
$11n_{157}$ ($K11n_{157}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$7,9 \underset{c_6}{\longrightarrow} 1,6 \underset{c_1}{\longrightarrow} 2 \underset{c_2}{\longrightarrow} 3 \underset{c_3}{\longrightarrow} 4 \underset{c_8}{\longrightarrow} 8 \underset{c_{11}}{\longrightarrow} 11 \underset{c_4}{\longrightarrow} 5 \underset{c_{10}}{\longrightarrow} 10 \longrightarrow\!\!\!\!\rightarrow c_5, c_7, c_9$$

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

$$I_1^u = \langle 6371u^{14} + 7974u^{13} + \cdots + 2417b + 9214,\ -7643u^{14} - 6072u^{13} + \cdots + 2417a - 4421,$$
$$u^{15} + 2u^{14} + u^{13} - u^{12} + 5u^{11} + 12u^{10} + 11u^9 + 5u^8 + 8u^7 + 14u^6 + 11u^5 + 5u^4 + 2u^3 + 3u^2 + 3u + 1\rangle$$
$$I_2^u = \langle -8.78150 \times 10^{28}u^{27} + 5.66569 \times 10^{28}u^{26} + \cdots + 6.30688 \times 10^{29}b - 6.14221 \times 10^{29},$$
$$3.22564 \times 10^{28}u^{27} - 1.12906 \times 10^{28}u^{26} + \cdots + 3.94180 \times 10^{28}a + 5.37899 \times 10^{29},\ u^{28} - 3u^{26} + \cdots + 15u +$$
$$I_3^u = \langle u^8 - 2u^7 - u^6 + 3u^5 + 2u^4 - 6u^3 - 4u^2 + 3b + 5u,\ 2u^8 - 2u^7 - 3u^6 + 4u^5 + 7u^4 - 5u^3 - 8u^2 + 3a + 8u + 4$$
$$u^9 - u^8 - u^7 + u^6 + 3u^5 - u^4 - 3u^3 + u^2 + 1\rangle$$
$$I_4^u = \langle -u^3 - 2u^2 + 2b - 4u - 1,\ a,\ u^4 + u^3 + 2u^2 - u + 1\rangle$$
$$I_5^u = \langle b - u,\ a,\ u^2 - u + 1\rangle$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 58 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. $\boldsymbol{I_1^u = \langle 6371u^{14} + 7974u^{13} + \cdots + 2417b + 9214,\ -7643u^{14} - 6072u^{13} + \cdots + 2417a - 4421,\ u^{15} + 2u^{14} + \cdots + 3u + 1\rangle}$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 3.16218u^{14} + 2.51221u^{13} + \cdots + 8.43235u + 1.82913 \\ -2.63591u^{14} - 3.29913u^{13} + \cdots - 7.27431u - 3.81216 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 3.16218u^{14} + 2.51221u^{13} + \cdots + 7.43235u + 1.82913 \\ -2.63591u^{14} - 3.29913u^{13} + \cdots - 7.27431u - 3.81216 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.526272u^{14} - 0.786926u^{13} + \cdots + 0.158047u - 1.98304 \\ -2.63591u^{14} - 3.29913u^{13} + \cdots - 7.27431u - 3.81216 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -2.88829u^{14} - 1.53496u^{13} + \cdots - 10.3910u - 1.51055 \\ 2.07654u^{14} + 3.02234u^{13} + \cdots + 6.23211u + 2.68722 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -14.2950u^{14} - 17.2429u^{13} + \cdots - 37.4675u - 19.5999 \\ 3.86512u^{14} + 5.89036u^{13} + \cdots + 12.4721u + 7.53496 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 5.79810u^{14} + 5.81134u^{13} + \cdots + 15.7067u + 5.64129 \\ -2.63591u^{14} - 3.29913u^{13} + \cdots - 7.27431u - 3.81216 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 9.56144u^{14} + 16.6558u^{13} + \cdots + 17.5350u + 18.8192 \\ 1.10716u^{14} + 1.23128u^{13} + \cdots + 2.12495u - 1.23790 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -19.5668u^{14} - 23.8411u^{13} + \cdots - 54.0161u - 27.2242 \\ 6.56103u^{14} + 10.1800u^{13} + \cdots + 19.0364u + 11.4803 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -19.5668u^{14} - 23.8411u^{13} + \cdots - 54.0161u - 27.2242 \\ 6.56103u^{14} + 10.1800u^{13} + \cdots + 19.0364u + 11.4803 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{1121}{2417}u^{14} - \frac{15391}{2417}u^{13} + \cdots + \frac{7549}{2417}u - \frac{21392}{2417}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{15} - 2u^{14} + \cdots + 3u - 1$
c_2, c_5	$u^{15} + 4u^{13} + \cdots + 21u - 7$
c_3, c_{10}	$u^{15} - u^{14} + \cdots + 9u + 1$
c_4, c_{11}	$u^{15} - u^{14} + \cdots + 3u - 1$
c_7	$u^{15} - 9u^{14} + \cdots + 89u - 13$
c_8	$u^{15} - 16u^{14} + \cdots - 384u + 64$
c_9	$u^{15} - 18u^{14} + \cdots + 166u - 13$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{15} - 2y^{14} + \cdots + 3y - 1$
c_2, c_5	$y^{15} + 8y^{14} + \cdots - 371y - 49$
c_3, c_{10}	$y^{15} - 23y^{14} + \cdots + 143y - 1$
c_4, c_{11}	$y^{15} + 17y^{14} + \cdots - 9y - 1$
c_7	$y^{15} - 3y^{14} + \cdots - 633y - 169$
c_8	$y^{15} - 6y^{14} + \cdots + 49152y - 4096$
c_9	$y^{15} - 14y^{14} + \cdots + 1972y - 169$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.612704 + 0.756856I$ $a = 0.341418 - 0.122016I$ $b = 0.566944 + 0.416117I$	$0.01045 - 1.91554I$	$0.97885 + 4.27627I$
$u = 0.612704 - 0.756856I$ $a = 0.341418 + 0.122016I$ $b = 0.566944 - 0.416117I$	$0.01045 + 1.91554I$	$0.97885 - 4.27627I$
$u = -0.749863 + 0.844909I$ $a = -0.867808 - 0.597101I$ $b = -0.124797 - 0.345224I$	$3.80312 + 4.84275I$	$6.83327 - 2.97437I$
$u = -0.749863 - 0.844909I$ $a = -0.867808 + 0.597101I$ $b = -0.124797 + 0.345224I$	$3.80312 - 4.84275I$	$6.83327 + 2.97437I$
$u = -0.864919$ $a = -0.417102$ $b = -0.552891$	1.96166	8.66210
$u = -0.330359 + 0.744277I$ $a = -0.712671 + 0.196118I$ $b = -0.743805 + 0.481051I$	$1.29784 - 0.91531I$	$6.30482 + 3.51826I$
$u = -0.330359 - 0.744277I$ $a = -0.712671 - 0.196118I$ $b = -0.743805 - 0.481051I$	$1.29784 + 0.91531I$	$6.30482 - 3.51826I$
$u = 0.551581 + 0.527918I$ $a = 3.41165 - 0.50064I$ $b = 0.17287 - 1.44617I$	$-7.32770 - 5.27705I$	$-2.66781 + 10.56442I$
$u = 0.551581 - 0.527918I$ $a = 3.41165 + 0.50064I$ $b = 0.17287 + 1.44617I$	$-7.32770 + 5.27705I$	$-2.66781 - 10.56442I$
$u = -0.620336 + 0.202077I$ $a = -3.98780 + 1.70604I$ $b = 0.32367 - 1.38455I$	$-8.37106 - 3.72407I$	$-11.66592 - 1.71457I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.620336 - 0.202077I$ $a = -3.98780 - 1.70604I$ $b = 0.32367 + 1.38455I$	$-8.37106 + 3.72407I$	$-11.66592 + 1.71457I$
$u = 1.19608 + 0.93854I$ $a = 1.153170 - 0.195631I$ $b = 0.12290 - 1.54294I$	$-10.07790 - 6.40199I$	$-2.27236 + 3.45803I$
$u = 1.19608 - 0.93854I$ $a = 1.153170 + 0.195631I$ $b = 0.12290 + 1.54294I$	$-10.07790 + 6.40199I$	$-2.27236 - 3.45803I$
$u = -1.22735 + 1.00294I$ $a = -1.129410 - 0.049047I$ $b = -0.54134 - 1.75302I$	$-9.9244 + 14.7471I$	$-1.34191 - 7.45505I$
$u = -1.22735 - 1.00294I$ $a = -1.129410 + 0.049047I$ $b = -0.54134 + 1.75302I$	$-9.9244 - 14.7471I$	$-1.34191 + 7.45505I$

II. $\boldsymbol{I_2^u = \langle -8.78\times 10^{28}u^{27} + 5.67\times 10^{28}u^{26} + \cdots + 6.31\times 10^{29}b - 6.14\times 10^{29},\ 3.23\times 10^{28}u^{27} - 1.13\times 10^{28}u^{26} + \cdots + 3.94\times 10^{28}a + 5.38\times 10^{29},\ u^{28} - 3u^{26} + \cdots + 15u + 7\rangle}$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix}0\\u\end{pmatrix}$$

$$a_1 = \begin{pmatrix}-0.818316u^{27} + 0.286432u^{26} + \cdots - 4.31215u - 13.6460\\0.139237u^{27} - 0.0898334u^{26} + \cdots - 1.14880u + 0.973891\end{pmatrix}$$

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

$$a_2 = \begin{pmatrix}-0.778079u^{27} + 0.383226u^{26} + \cdots - 4.59508u - 12.6149\\0.198461u^{27} - 0.197076u^{26} + \cdots + 0.584769u + 1.65145\end{pmatrix}$$

$$a_3 = \begin{pmatrix}-0.579618u^{27} + 0.186150u^{26} + \cdots - 4.01031u - 10.9634\\0.198461u^{27} - 0.197076u^{26} + \cdots + 0.584769u + 1.65145\end{pmatrix}$$

$$a_4 = \begin{pmatrix}-0.554453u^{27} + 0.463290u^{26} + \cdots - 15.3130u - 5.98983\\-0.0847239u^{27} + 0.0398120u^{26} + \cdots - 4.10503u + 2.09476\end{pmatrix}$$

$$a_8 = \begin{pmatrix}-0.920936u^{27} + 0.383226u^{26} + \cdots + 5.69064u - 14.7577\\0.000248909u^{27} + 0.0199758u^{26} + \cdots - 1.85550u - 3.21584\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}-0.957553u^{27} + 0.376265u^{26} + \cdots - 3.16334u - 14.6199\\0.139237u^{27} - 0.0898334u^{26} + \cdots - 1.14880u + 0.973891\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-0.530531u^{27} + 0.278934u^{26} + \cdots + 1.71271u - 9.93905\\-0.307348u^{27} + 0.0603723u^{26} + \cdots - 5.15516u - 3.44204\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-1.47268u^{27} + 0.509623u^{26} + \cdots + 8.66934u - 25.3019\\-0.0298670u^{27} - 0.135246u^{26} + \cdots + 3.47164u - 1.07835\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-1.47268u^{27} + 0.509623u^{26} + \cdots + 8.66934u - 25.3019\\-0.0298670u^{27} - 0.135246u^{26} + \cdots + 3.47164u - 1.07835\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -3.21687u^{27} + 1.77020u^{26} + \cdots - 21.5171u - 59.2310$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{28} - 3u^{26} + \cdots - 15u + 7$
c_2, c_5	$u^{28} + 14u^{26} + \cdots + 18426u + 5476$
c_3, c_{10}	$u^{28} + 3u^{27} + \cdots + 702u + 189$
c_4, c_{11}	$u^{28} + 15u^{26} + \cdots + 1651u + 211$
c_7	$(u^7 + 2u^6 + 2u^5 - u^4 - 2u^3 - 3u^2 - 2u - 1)^4$
c_8	$(u^2 + u + 1)^{14}$
c_9	$(u^7 + 3u^6 + 3u^5 - 2u^4 - 6u^3 - 3u^2 + 3u + 2)^4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{28} - 6y^{27} + \cdots - 1233y + 49$
c_2, c_5	$y^{28} + 28y^{27} + \cdots + 251529108y + 29986576$
c_3, c_{10}	$y^{28} - 31y^{27} + \cdots + 442746y + 35721$
c_4, c_{11}	$y^{28} + 30y^{27} + \cdots - 141473y + 44521$
c_7	$(y^7 + 4y^5 - y^4 - 6y^3 - 3y^2 - 2y - 1)^4$
c_8	$(y^2 + y + 1)^{14}$
c_9	$(y^7 - 3y^6 + 9y^5 - 16y^4 + 30y^3 - 37y^2 + 21y - 4)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.926441 + 0.302933I$ $a = 0.835660 - 0.395936I$ $b = 0.18430 - 1.56542I$	$-8.81923 + 1.88726I$	$-4.79602 + 0.46086I$
$u = 0.926441 - 0.302933I$ $a = 0.835660 + 0.395936I$ $b = 0.18430 + 1.56542I$	$-8.81923 - 1.88726I$	$-4.79602 - 0.46086I$
$u = 0.882336 + 0.398262I$ $a = -1.25789 - 0.69503I$ $b = -0.127775 + 1.222770I$	$-1.98093 - 2.69340I$	$1.01907 + 5.70877I$
$u = 0.882336 - 0.398262I$ $a = -1.25789 + 0.69503I$ $b = -0.127775 - 1.222770I$	$-1.98093 + 2.69340I$	$1.01907 - 5.70877I$
$u = -0.955589 + 0.447693I$ $a = 1.361010 - 0.102924I$ $b = 0.398158 + 0.190766I$	$-3.77470 + 4.56872I$	$-6.86344 - 5.27495I$
$u = -0.955589 - 0.447693I$ $a = 1.361010 + 0.102924I$ $b = 0.398158 - 0.190766I$	$-3.77470 - 4.56872I$	$-6.86344 + 5.27495I$
$u = 1.030270 + 0.444143I$ $a = -0.777103 + 1.021880I$ $b = 0.933329 - 0.035309I$	$-3.77470 + 0.50896I$	$-6.86344 + 1.65325I$
$u = 1.030270 - 0.444143I$ $a = -0.777103 - 1.021880I$ $b = 0.933329 + 0.035309I$	$-3.77470 - 0.50896I$	$-6.86344 - 1.65325I$
$u = -0.764988 + 0.333203I$ $a = -1.036830 - 0.303027I$ $b = -0.52562 - 1.87875I$	$-8.81923 + 5.94703I$	$-4.79602 - 6.46734I$
$u = -0.764988 - 0.333203I$ $a = -1.036830 + 0.303027I$ $b = -0.52562 + 1.87875I$	$-8.81923 - 5.94703I$	$-4.79602 + 6.46734I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.832170 + 1.011860I$ $a = -1.060780 - 0.049088I$ $b = -1.76309 + 1.00644I$	$-1.98093 - 6.75317I$	$1.01907 + 12.63698I$
$u = 0.832170 - 1.011860I$ $a = -1.060780 + 0.049088I$ $b = -1.76309 - 1.00644I$	$-1.98093 + 6.75317I$	$1.01907 - 12.63698I$
$u = -0.673430 + 0.136605I$ $a = 1.99394 - 0.64637I$ $b = 0.282129 + 1.092080I$	$-3.77470 + 0.50896I$	$-6.86344 + 1.65325I$
$u = -0.673430 - 0.136605I$ $a = 1.99394 + 0.64637I$ $b = 0.282129 - 1.092080I$	$-3.77470 - 0.50896I$	$-6.86344 - 1.65325I$
$u = 0.418095 + 0.243425I$ $a = -1.095220 + 0.637666I$ $b = -0.84642 - 1.28005I$	$1.18584 - 2.02988I$	$-7.71921 + 3.46410I$
$u = 0.418095 - 0.243425I$ $a = -1.095220 - 0.637666I$ $b = -0.84642 + 1.28005I$	$1.18584 + 2.02988I$	$-7.71921 - 3.46410I$
$u = -1.32892 + 0.76374I$ $a = 0.833463 - 0.359442I$ $b = 0.576049 + 1.105100I$	$-1.98093 + 6.75317I$	$1.00000 - 12.63698I$
$u = -1.32892 - 0.76374I$ $a = 0.833463 + 0.359442I$ $b = 0.576049 - 1.105100I$	$-1.98093 - 6.75317I$	$1.00000 + 12.63698I$
$u = -0.419083 + 0.092128I$ $a = 2.45375 - 2.11929I$ $b = 0.635857 + 0.145439I$	$-1.98093 + 2.69340I$	$1.01907 - 5.70877I$
$u = -0.419083 - 0.092128I$ $a = 2.45375 + 2.11929I$ $b = 0.635857 - 0.145439I$	$-1.98093 - 2.69340I$	$1.01907 + 5.70877I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.28011 + 1.04710I$ $a = -0.858059 + 0.149052I$ $b = -0.09070 + 1.77177I$	$-3.77470 - 4.56872I$	$-6.86344 + 5.27495I$
$u = 1.28011 - 1.04710I$ $a = -0.858059 - 0.149052I$ $b = -0.09070 - 1.77177I$	$-3.77470 + 4.56872I$	$-6.86344 - 5.27495I$
$u = 1.04709 + 1.39986I$ $a = 0.358425 - 0.370628I$ $b = 0.14931 - 1.67361I$	$-8.81923 - 1.88726I$	$-4.79602 + 0.I$
$u = 1.04709 - 1.39986I$ $a = 0.358425 + 0.370628I$ $b = 0.14931 + 1.67361I$	$-8.81923 + 1.88726I$	$-4.79602 + 0.I$
$u = -1.10276 + 1.42931I$ $a = 0.207467 + 0.268901I$ $b = -0.258042 + 0.632924I$	$1.18584 + 2.02988I$	$-7.71921 + 0.I$
$u = -1.10276 - 1.42931I$ $a = 0.207467 - 0.268901I$ $b = -0.258042 - 0.632924I$	$1.18584 - 2.02988I$	$-7.71921 + 0.I$
$u = -1.17174 + 1.49387I$ $a = -0.243547 - 0.407503I$ $b = 0.45250 - 1.53573I$	$-8.81923 - 5.94703I$	0
$u = -1.17174 - 1.49387I$ $a = -0.243547 + 0.407503I$ $b = 0.45250 + 1.53573I$	$-8.81923 + 5.94703I$	0

III. $\boldsymbol{I_3^u = \langle u^8 - 2u^7 + \cdots + 3b + 5u,\ 2u^8 - 2u^7 + \cdots + 3a + 4,\ u^9 - u^8 - u^7 + u^6 + 3u^5 - u^4 - 3u^3 + u^2 + 1\rangle}$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -\frac{2}{3}u^8 + \frac{2}{3}u^7 + \cdots - \frac{8}{3}u - \frac{4}{3} \\ -\frac{1}{3}u^8 + \frac{2}{3}u^7 + \cdots + \frac{4}{3}u^2 - \frac{5}{3}u \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -\frac{2}{3}u^8 + \frac{2}{3}u^7 + \cdots - \frac{5}{3}u - \frac{4}{3} \\ -\frac{1}{3}u^8 + \frac{2}{3}u^7 + \cdots + \frac{4}{3}u^2 - \frac{5}{3}u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^8 + \frac{4}{3}u^7 + \cdots - \frac{10}{3}u - \frac{4}{3} \\ -\frac{1}{3}u^8 + \frac{2}{3}u^7 + \cdots + \frac{4}{3}u^2 - \frac{5}{3}u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^8 - \frac{2}{3}u^7 + \cdots + \frac{5}{3}u - \frac{1}{3} \\ -\frac{2}{3}u^7 + \frac{1}{3}u^6 + \cdots + \frac{5}{3}u - \frac{1}{3} \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^8 - \frac{2}{3}u^7 + \cdots + \frac{2}{3}u + \frac{5}{3} \\ \frac{2}{3}u^8 - \frac{2}{3}u^7 + \cdots + \frac{8}{3}u + \frac{1}{3} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{1}{3}u^8 + \frac{2}{3}u^6 + \cdots - u - \frac{4}{3} \\ -\frac{1}{3}u^8 + \frac{2}{3}u^7 + \cdots + \frac{4}{3}u^2 - \frac{5}{3}u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^8 - 2u^7 + 2u^5 + 2u^4 - 4u^3 - 2u^2 + 5u - 1 \\ -\frac{1}{3}u^8 - \frac{1}{3}u^7 + \cdots + \frac{4}{3}u - 2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} \frac{5}{3}u^8 - 2u^7 + \cdots + 2u + \frac{5}{3} \\ \frac{4}{3}u^8 - \frac{4}{3}u^7 + \cdots + \frac{10}{3}u - \frac{1}{3} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} \frac{5}{3}u^8 - 2u^7 + \cdots + 2u + \frac{5}{3} \\ \frac{4}{3}u^8 - \frac{4}{3}u^7 + \cdots + \frac{10}{3}u - \frac{1}{3} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{11}{3}u^8 - 2u^7 - \frac{16}{3}u^6 + \frac{11}{3}u^5 + \frac{31}{3}u^4 + \frac{2}{3}u^3 - \frac{26}{3}u^2 + u - \frac{13}{3}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^9 - u^8 - u^7 + u^6 + 3u^5 - u^4 - 3u^3 + u^2 + 1$
c_2, c_5	$u^9 - u^8 + 2u^7 - 2u^6 - 3u^5 + 6u^4 - 9u^3 + 12u^2 - 6u + 1$
c_3, c_{10}	$u^9 + 4u^8 + 4u^7 - 3u^6 - 6u^5 + 2u^4 + 9u^3 + 5u^2 + 2u + 1$
c_4, c_{11}	$u^9 + 4u^7 + 8u^5 + 4u^4 + 10u^3 + 5u^2 + 4u + 1$
c_7	$u^9 + 4u^8 + 6u^7 + 2u^6 - 6u^5 - 9u^4 - 9u^3 - 9u^2 - 4u - 1$
c_8	$u^9 - 2u^8 - u^7 + 6u^6 - 2u^5 - 6u^4 + 9u^3 - 4u^2 - u + 1$
c_9	$u^9 - 5u^8 + 7u^7 + 10u^6 - 43u^5 + 40u^4 + 32u^3 - 101u^2 + 85u - 25$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^9 - 3y^8 + 9y^7 - 15y^6 + 19y^5 - 19y^4 + 9y^3 + y^2 - 2y - 1$
c_2, c_5	$y^9 + 3y^8 - 6y^7 - 22y^6 + 9y^5 + 44y^4 - 23y^3 - 48y^2 + 12y - 1$
c_3, c_{10}	$y^9 - 8y^8 + 28y^7 - 55y^6 + 84y^5 - 74y^4 + 43y^3 + 7y^2 - 6y - 1$
c_4, c_{11}	$y^9 + 8y^8 + 32y^7 + 84y^6 + 152y^5 + 176y^4 + 124y^3 + 47y^2 + 6y - 1$
c_7	$y^9 - 4y^8 + 8y^7 - 22y^6 + 28y^5 + 23y^4 - 29y^3 - 27y^2 - 2y - 1$
c_8	$y^9 - 6y^8 + 21y^7 - 38y^6 + 40y^5 - 18y^4 + 25y^3 - 22y^2 + 9y - 1$
c_9	$y^9 - 11y^8 + \cdots + 2175y - 625$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.925729 + 0.298901I$ $a = -1.65967 - 0.29203I$ $b = 0.186675 + 0.843739I$	$-3.44968 - 2.27918I$	$-6.79542 + 4.07405I$
$u = 0.925729 - 0.298901I$ $a = -1.65967 + 0.29203I$ $b = 0.186675 - 0.843739I$	$-3.44968 + 2.27918I$	$-6.79542 - 4.07405I$
$u = -1.06290$ $a = 0.677227$ $b = 0.297798$	1.40144	-6.42530
$u = -0.835681 + 0.887260I$ $a = 1.154510 + 0.429518I$ $b = 0.301332 + 0.862970I$	$3.17057 + 5.55556I$	$0.67256 - 7.78739I$
$u = -0.835681 - 0.887260I$ $a = 1.154510 - 0.429518I$ $b = 0.301332 - 0.862970I$	$3.17057 - 5.55556I$	$0.67256 + 7.78739I$
$u = 1.117240 + 0.844025I$ $a = -1.015900 - 0.192244I$ $b = -0.93544 + 1.17493I$	$-2.48959 - 5.91665I$	$-4.21171 + 4.65114I$
$u = 1.117240 - 0.844025I$ $a = -1.015900 + 0.192244I$ $b = -0.93544 - 1.17493I$	$-2.48959 + 5.91665I$	$-4.21171 - 4.65114I$
$u = -0.175840 + 0.557149I$ $a = -1.31756 - 2.50559I$ $b = 0.29853 - 1.51561I$	$-7.80162 - 4.26526I$	$-1.95279 + 3.52841I$
$u = -0.175840 - 0.557149I$ $a = -1.31756 + 2.50559I$ $b = 0.29853 + 1.51561I$	$-7.80162 + 4.26526I$	$-1.95279 - 3.52841I$

IV. $\boldsymbol{I^u_4 = \langle -u^3 - 2u^2 + 2b - 4u - 1,\ a,\ u^4 + u^3 + 2u^2 - u + 1\rangle}$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0 \\ \frac{1}{2}u^3 + u^2 + 2u + \frac{1}{2} \end{pmatrix}$$

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

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

$$a_3 = \begin{pmatrix} \frac{1}{2}u^3 - \frac{1}{2} \\ u^3 + u^2 + 2u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} \frac{1}{2}u^3 - \frac{1}{2} \\ 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -\frac{1}{2}u^3 + \frac{3}{2} \\ -1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{1}{2}u^3 - u^2 - 2u - \frac{1}{2} \\ \frac{1}{2}u^3 + u^2 + 2u + \frac{1}{2} \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^3 + u^2 + u - 1 \\ -\frac{1}{2}u^3 - u^2 - u + \frac{3}{2} \end{pmatrix}$$

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 2u^3 + 4u^2 + 4u + 11$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_6 c_{11}	$y^4 + 3y^3 + 8y^2 + 3y + 1$
c_2, c_5	$y^4 + y^3 - 3y^2 + 4y + 16$
c_3, c_8, c_{10}	$(y^2 + y + 1)^2$
c_7	$(y - 1)^4$
c_9	y^4

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.309017 + 0.535233I$ $a = 0$ $b = 0.80902 + 1.40126I$	$1.64493 - 2.02988I$	$11.00000 + 3.46410I$
$u = 0.309017 - 0.535233I$ $a = 0$ $b = 0.80902 - 1.40126I$	$1.64493 + 2.02988I$	$11.00000 - 3.46410I$
$u = -0.80902 + 1.40126I$ $a = 0$ $b = -0.309017 + 0.535233I$	$1.64493 + 2.02988I$	$11.00000 - 3.46410I$
$u = -0.80902 - 1.40126I$ $a = 0$ $b = -0.309017 - 0.535233I$	$1.64493 - 2.02988I$	$11.00000 + 3.46410I$

V. $I_5^u = \langle b-u,\ a,\ u^2-u+1\rangle$

(i) Arc colorings

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

$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$

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

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

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

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

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

$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$

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

$a_5 = \begin{pmatrix} -u \\ u-1 \end{pmatrix}$

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

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

(ii) Obstruction class $= -1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

	Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.500000+0.866025I$		
$a=$	0	$-2.02988I$	$0.+3.46410I$
$b=$	$0.500000+0.866025I$		
$u=$	$0.500000-0.866025I$		
$a=$	0	$2.02988I$	$0.-3.46410I$
$b=$	$0.500000-0.866025I$		

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_6	$(u^2+u+1)(u^4+u^3+2u^2-u+1)$ $\cdot(u^9-u^8+\cdots+u^2+1)(u^{15}-2u^{14}+\cdots+3u-1)$ $\cdot(u^{28}-3u^{26}+\cdots-15u+7)$
c_2, c_5	$(u^2-u+1)(u^4+3u^3+5u^2+6u+4)$ $\cdot(u^9-u^8+2u^7-2u^6-3u^5+6u^4-9u^3+12u^2-6u+1)$ $\cdot(u^{15}+4u^{13}+\cdots+21u-7)(u^{28}+14u^{26}+\cdots+18426u+5476)$
c_3, c_{10}	$((u^2+u+1)^3)(u^9+4u^8+\cdots+2u+1)$ $\cdot(u^{15}-u^{14}+\cdots+9u+1)(u^{28}+3u^{27}+\cdots+702u+189)$
c_4, c_{11}	$(u^2+u+1)(u^4+u^3+2u^2-u+1)$ $\cdot(u^9+4u^7+\cdots+4u+1)(u^{15}-u^{14}+\cdots+3u-1)$ $\cdot(u^{28}+15u^{26}+\cdots+1651u+211)$
c_7	$u^2(u-1)^4(u^7+2u^6+2u^5-u^4-2u^3-3u^2-2u-1)^4$ $\cdot(u^9+4u^8+6u^7+2u^6-6u^5-9u^4-9u^3-9u^2-4u-1)$ $\cdot(u^{15}-9u^{14}+\cdots+89u-13)$
c_8	$(u^2-u+1)(u^2+u+1)^{16}$ $\cdot(u^9-2u^8-u^7+6u^6-2u^5-6u^4+9u^3-4u^2-u+1)$ $\cdot(u^{15}-16u^{14}+\cdots-384u+64)$
c_9	$u^6(u^7+3u^6+3u^5-2u^4-6u^3-3u^2+3u+2)^4$ $\cdot(u^9-5u^8+7u^7+10u^6-43u^5+40u^4+32u^3-101u^2+85u-25)$ $\cdot(u^{15}-18u^{14}+\cdots+166u-13)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_6	$(y^2+y+1)(y^4+3y^3+8y^2+3y+1)$ $\cdot (y^9-3y^8+9y^7-15y^6+19y^5-19y^4+9y^3+y^2-2y-1)$ $\cdot (y^{15}-2y^{14}+\cdots+3y-1)(y^{28}-6y^{27}+\cdots-1233y+49)$
c_2, c_5	$(y^2+y+1)(y^4+y^3-3y^2+4y+16)$ $\cdot (y^9+3y^8-6y^7-22y^6+9y^5+44y^4-23y^3-48y^2+12y-1)$ $\cdot (y^{15}+8y^{14}+\cdots-371y-49)$ $\cdot (y^{28}+28y^{27}+\cdots+251529108y+29986576)$
c_3, c_{10}	$(y^2+y+1)^3$ $\cdot (y^9-8y^8+28y^7-55y^6+84y^5-74y^4+43y^3+7y^2-6y-1)$ $\cdot (y^{15}-23y^{14}+\cdots+143y-1)(y^{28}-31y^{27}+\cdots+442746y+35721)$
c_4, c_{11}	$(y^2+y+1)(y^4+3y^3+8y^2+3y+1)$ $\cdot (y^9+8y^8+32y^7+84y^6+152y^5+176y^4+124y^3+47y^2+6y-1)$ $\cdot (y^{15}+17y^{14}+\cdots-9y-1)(y^{28}+30y^{27}+\cdots-141473y+44521)$
c_7	$y^2(y-1)^4(y^7+4y^5-y^4-6y^3-3y^2-2y-1)^4$ $\cdot (y^9-4y^8+8y^7-22y^6+28y^5+23y^4-29y^3-27y^2-2y-1)$ $\cdot (y^{15}-3y^{14}+\cdots-633y-169)$
c_8	$(y^2+y+1)^{17}$ $\cdot (y^9-6y^8+21y^7-38y^6+40y^5-18y^4+25y^3-22y^2+9y-1)$ $\cdot (y^{15}-6y^{14}+\cdots+49152y-4096)$
c_9	$y^6(y^7-3y^6+9y^5-16y^4+30y^3-37y^2+21y-4)^4$ $\cdot (y^9-11y^8+\cdots+2175y-625)(y^{15}-14y^{14}+\cdots+1972y-169)$