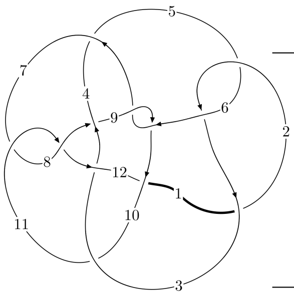
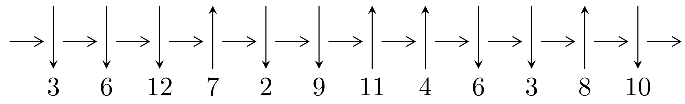
$12n_{0533}$ ($K12n_{0533}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$
\begin{aligned}
I_1^u &= \langle b-u,\ 685852313u^{18} - 556454916u^{17} + \cdots + 653732120a + 7160013,\ u^{19} - u^{18} + \cdots - u - 1\rangle \\
I_2^u &= \langle -5.47513\times 10^{57}u^{27} - 1.03765\times 10^{58}u^{26} + \cdots + 1.25931\times 10^{60}b + 3.43121\times 10^{60}, \\
&\quad 2.52837\times 10^{60}u^{27} + 8.41887\times 10^{58}u^{26} + \cdots + 3.70867\times 10^{62}a - 9.79223\times 10^{62}, \\
&\quad 2u^{28} - 31u^{26} + \cdots - 1810u + 589\rangle \\
I_3^u &= \langle b+u,\ 2u^8 + 8u^7 + 6u^6 - 13u^5 - 23u^4 - 10u^3 + 3u^2 + a + 3u + 1, \\
&\quad u^9 + 4u^8 + 3u^7 - 7u^6 - 13u^5 - 5u^4 + 5u^3 + 4u^2 - 1\rangle \\
I_4^u &= \langle b+1,\ 3a - 4u - 2,\ 2u^2 + 4u + 3\rangle \\
I_5^u &= \langle b+1,\ a^2 + 2,\ u-1\rangle \\
I_6^u &= \langle 2b - a - 2,\ a^2 + 2,\ u-1\rangle \\
I_7^u &= \langle b+1,\ a,\ u-1\rangle
\end{aligned}
$$

* 7 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 63 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. $I_1^u = \langle b-u,\ 6.86\times10^8u^{18} - 5.56\times10^8u^{17} + \cdots + 6.54\times10^8a + 7.16\times10^6,\ u^{19} - u^{18} + \cdots - u - 1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} -1.04913u^{18} + 0.851197u^{17} + \cdots + 7.34496u - 0.0109525 \\ u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.158099u^{18} + 0.275222u^{17} + \cdots - 2.08930u - 3.03953 \\ -0.293094u^{18} + 0.271534u^{17} + \cdots + 2.24707u + 0.197936 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -1.04913u^{18} + 0.851197u^{17} + \cdots + 7.34496u - 0.0109525 \\ 0.293094u^{18} - 0.271534u^{17} + \cdots - 0.247070u - 0.197936 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -1.04913u^{18} + 0.851197u^{17} + \cdots + 6.34496u - 0.0109525 \\ 0.293094u^{18} - 0.271534u^{17} + \cdots - 0.247070u - 0.197936 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^4 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -0.0634274u^{18} - 0.299411u^{17} + \cdots - 0.158823u + 2.17783 \\ 0.309916u^{18} - 0.197991u^{17} + \cdots - 0.689516u - 0.693690 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.489325u^{18} + 0.908085u^{17} + \cdots + 2.86952u - 2.02077 \\ 0.146260u^{18} - 0.320706u^{17} + \cdots + 1.12146u + 0.224248 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.652817u^{18} - 1.22239u^{17} + \cdots - 1.72619u + 2.50033 \\ -0.0560035u^{18} + 0.251833u^{17} + \cdots - 0.0119146u - 0.862668 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{98599477}{81716515}u^{18} + \frac{19045887}{32686606}u^{17} + \cdots + \frac{1773159057}{163433030}u + \frac{96551023}{32686606}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{19} + 29u^{18} + \cdots - 21u + 1$
c_2, c_5, c_{10}	$u^{19} + u^{18} + \cdots - u + 1$
c_3	$u^{19} - 12u^{18} + \cdots - 112u + 8$
c_4	$u^{19} + u^{18} + \cdots + 38u + 19$
c_6, c_9	$u^{19} - 11u^{18} + \cdots + 192u - 16$
c_7, c_8, c_{11}	$u^{19} - 6u^{17} + \cdots + 2u + 1$
c_{12}	$u^{19} - 2u^{18} + \cdots + 640u + 206$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{19} - 89y^{18} + \cdots + 167y - 1$
c_2, c_5, c_{10}	$y^{19} - 29y^{18} + \cdots - 21y - 1$
c_3	$y^{19} + 4y^{18} + \cdots + 2272y - 64$
c_4	$y^{19} + 17y^{18} + \cdots + 342y - 361$
c_6, c_9	$y^{19} + 9y^{18} + \cdots + 10112y - 256$
c_7, c_8, c_{11}	$y^{19} - 12y^{18} + \cdots + 20y - 1$
c_{12}	$y^{19} - 44y^{18} + \cdots + 39624y - 42436$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.011380 + 0.313488I$ $a = 0.32432 + 1.42243I$ $b = 1.011380 + 0.313488I$	$3.19066 + 0.85534I$	$-5.53948 - 2.70144I$
$u = 1.011380 - 0.313488I$ $a = 0.32432 - 1.42243I$ $b = 1.011380 - 0.313488I$	$3.19066 - 0.85534I$	$-5.53948 + 2.70144I$
$u = -0.563817 + 0.542216I$ $a = -1.26815 + 1.02395I$ $b = -0.563817 + 0.542216I$	$7.09944 + 1.17461I$	$4.73931 - 3.05170I$
$u = -0.563817 - 0.542216I$ $a = -1.26815 - 1.02395I$ $b = -0.563817 - 0.542216I$	$7.09944 - 1.17461I$	$4.73931 + 3.05170I$
$u = 0.678408$ $a = 0.230292$ $b = 0.678408$	-1.17152	-9.47840
$u = -0.102826 + 0.584964I$ $a = 1.67025 - 1.13096I$ $b = -0.102826 + 0.584964I$	$4.80007 - 6.25425I$	$1.28229 + 2.73136I$
$u = -0.102826 - 0.584964I$ $a = 1.67025 + 1.13096I$ $b = -0.102826 - 0.584964I$	$4.80007 + 6.25425I$	$1.28229 - 2.73136I$
$u = -0.263709 + 0.494501I$ $a = -0.994354 - 0.913393I$ $b = -0.263709 + 0.494501I$	$2.36863 - 1.74565I$	$-1.37224 + 0.88301I$
$u = -0.263709 - 0.494501I$ $a = -0.994354 + 0.913393I$ $b = -0.263709 - 0.494501I$	$2.36863 + 1.74565I$	$-1.37224 - 0.88301I$
$u = -0.006101 + 0.333119I$ $a = -2.12160 + 1.28521I$ $b = -0.006101 + 0.333119I$	$0.09772 - 1.41403I$	$1.26259 + 3.76239I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.006101 - 0.333119I$ $a = -2.12160 - 1.28521I$ $b = -0.006101 - 0.333119I$	$0.09772 + 1.41403I$	$1.26259 - 3.76239I$
$u = -1.82852 + 0.27307I$ $a = -0.568825 + 0.667950I$ $b = -1.82852 + 0.27307I$	$-9.74488 + 5.38592I$	$-1.90391 - 4.79888I$
$u = -1.82852 - 0.27307I$ $a = -0.568825 - 0.667950I$ $b = -1.82852 - 0.27307I$	$-9.74488 - 5.38592I$	$-1.90391 + 4.79888I$
$u = 1.90401 + 0.14512I$ $a = 0.798373 + 0.448929I$ $b = 1.90401 + 0.14512I$	$-8.63257 + 5.48554I$	$-4.82467 - 3.57754I$
$u = 1.90401 - 0.14512I$ $a = 0.798373 - 0.448929I$ $b = 1.90401 - 0.14512I$	$-8.63257 - 5.48554I$	$-4.82467 + 3.57754I$
$u = -1.90239 + 0.21588I$ $a = -0.651528 + 0.330559I$ $b = -1.90239 + 0.21588I$	$-11.79520 + 2.21872I$	$-6.42414 + 1.59237I$
$u = -1.90239 - 0.21588I$ $a = -0.651528 - 0.330559I$ $b = -1.90239 - 0.21588I$	$-11.79520 - 2.21872I$	$-6.42414 - 1.59237I$
$u = 1.91277 + 0.40668I$ $a = 0.696362 + 0.544185I$ $b = 1.91277 + 0.40668I$	$-7.3598 - 14.6056I$	$-3.48053 + 6.86328I$
$u = 1.91277 - 0.40668I$ $a = 0.696362 - 0.544185I$ $b = 1.91277 - 0.40668I$	$-7.3598 + 14.6056I$	$-3.48053 - 6.86328I$

II. $\boldsymbol{I^u_2 = \langle -5.48\times 10^{57}u^{27} - 1.04\times 10^{58}u^{26} + \cdots + 1.26\times 10^{60}b + 3.43\times 10^{60},\ 2.53\times 10^{60}u^{27} + 8.42\times 10^{58}u^{26} + \cdots + 3.71\times 10^{62}a - 9.79\times 10^{62},\ 2u^{28} - 31u^{26} + \cdots - 1810u + 589\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.00681744u^{27} - 0.000227005u^{26} + \cdots - 8.46563u + 2.64036 \\ 0.00434772u^{27} + 0.00823983u^{26} + \cdots + 3.63527u - 2.72467 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.00201318u^{27} + 0.000373266u^{26} + \cdots + 1.62410u + 3.93942 \\ 0.00381269u^{27} + 0.000556062u^{26} + \cdots - 0.710321u + 1.46510 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.00681744u^{27} - 0.000227005u^{26} + \cdots - 8.46563u + 2.64036 \\ 0.00232347u^{27} + 0.00897606u^{26} + \cdots + 5.43757u - 2.65782 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.0111652u^{27} - 0.00846684u^{26} + \cdots - 12.1009u + 5.36503 \\ -0.000787486u^{27} + 0.00285253u^{26} + \cdots - 0.739078u - 0.231186 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.00531622u^{27} - 0.00441396u^{26} + \cdots - 13.8077u + 0.531340 \\ 0.00187207u^{27} - 0.00379823u^{26} + \cdots - 6.50788u + 0.163980 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.0119948u^{27} - 0.00659420u^{26} + \cdots - 10.2083u + 8.38054 \\ 0.00447526u^{27} + 0.000556236u^{26} + \cdots - 3.48973u + 1.29218 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.00515768u^{27} + 0.00174483u^{26} + \cdots - 2.12442u + 4.32190 \\ -0.00281226u^{27} + 0.00400340u^{26} + \cdots + 4.13143u - 0.354315 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.0000410394u^{27} - 0.0223862u^{26} + \cdots - 14.9786u + 4.40670$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$4(4u^{28}+124u^{27}+\cdots+3496386u+346921)$
c_2, c_5, c_{10}	$2(2u^{28}-31u^{26}+\cdots+1810u+589)$
c_3	$(u^{14}+3u^{13}+\cdots+6u+2)^2$
c_4	$4(4u^{28}+4u^{27}+\cdots+2910u+1318)$
c_6, c_9	$(u^{14}+4u^{13}+\cdots+6u+2)^2$
c_7, c_8, c_{11}	$2(2u^{28}-3u^{26}+\cdots+18u+143)$
c_{12}	$4(4u^{28}+4u^{27}+\cdots-331822u+51386)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$16(16y^{28} - 1192y^{27} + \cdots + 1.12038 \times 10^{13}y + 1.20354 \times 10^{11})$
c_2, c_5, c_{10}	$4(4y^{28} - 124y^{27} + \cdots - 3496386y + 346921)$
c_3	$(y^{14} + 7y^{13} + \cdots + 40y + 4)^2$
c_4	$16(16y^{28} + 120y^{27} + \cdots + 3.30726 \times 10^{7}y + 1737124)$
c_6, c_9	$(y^{14} + 14y^{12} + \cdots - 16y + 4)^2$
c_7, c_8, c_{11}	$4(4y^{28} - 12y^{27} + \cdots - 208818y + 20449)$
c_{12}	$16(16y^{28} - 872y^{27} + \cdots + 9.39179 \times 10^{9}y + 2.64052 \times 10^{9})$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.966382+0.110966I$ $a=-0.828099-0.574299I$ $b=-0.89736-1.22031I$	$1.97484-7.76173I$	$-3.86929+6.38577I$
$u=-0.966382-0.110966I$ $a=-0.828099+0.574299I$ $b=-0.89736+1.22031I$	$1.97484+7.76173I$	$-3.86929-6.38577I$
$u=\ \ 0.851893+0.576043I$ $a=\ \ 0.774805+0.118277I$ $b=\ \ 1.41322-0.39522I$	$-0.285405-1.292740I$	$-2.58201+4.98724I$
$u=\ \ 0.851893-0.576043I$ $a=\ \ 0.774805-0.118277I$ $b=\ \ 1.41322+0.39522I$	$-0.285405+1.292740I$	$-2.58201-4.98724I$
$u=\ \ 0.809296+0.758852I$ $a=-0.701976+0.470898I$ $b=-0.656408+0.320572I$	$-1.78597-2.14155I$	$-6.76179+4.84545I$
$u=\ \ 0.809296-0.758852I$ $a=-0.701976-0.470898I$ $b=-0.656408-0.320572I$	$-1.78597+2.14155I$	$-6.76179-4.84545I$
$u=\ \ 0.820658+0.108803I$ $a=-0.497392-0.319928I$ $b=-0.69832+1.71552I$	$0.227845-0.102984I$	$-1.99347-4.00034I$
$u=\ \ 0.820658-0.108803I$ $a=-0.497392+0.319928I$ $b=-0.69832-1.71552I$	$0.227845+0.102984I$	$-1.99347+4.00034I$
$u=-0.656408+0.320572I$ $a=\ \ 1.047290+0.742422I$ $b=\ \ 0.809296+0.758852I$	$-1.78597-2.14155I$	$-6.76179+4.84545I$
$u=-0.656408-0.320572I$ $a=\ \ 1.047290-0.742422I$ $b=\ \ 0.809296-0.758852I$	$-1.78597+2.14155I$	$-6.76179-4.84545I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.130570 + 0.630186I$ $a = 0.307163 - 1.004640I$ $b = 0.261322 - 0.276894I$	$5.45172 + 3.41582I$	$0.19962 - 2.07440I$
$u = -1.130570 - 0.630186I$ $a = 0.307163 + 1.004640I$ $b = 0.261322 + 0.276894I$	$5.45172 - 3.41582I$	$0.19962 + 2.07440I$
$u = 1.41322 + 0.39522I$ $a = 0.288054 - 0.467672I$ $b = 0.851893 - 0.576043I$	$-0.285405 + 1.292740I$	$-2.58201 - 4.98724I$
$u = 1.41322 - 0.39522I$ $a = 0.288054 + 0.467672I$ $b = 0.851893 + 0.576043I$	$-0.285405 - 1.292740I$	$-2.58201 + 4.98724I$
$u = -0.89736 + 1.22031I$ $a = -0.584215 - 0.278401I$ $b = -0.966382 - 0.110966I$	$1.97484 + 7.76173I$	$-3.86929 - 6.38577I$
$u = -0.89736 - 1.22031I$ $a = -0.584215 + 0.278401I$ $b = -0.966382 + 0.110966I$	$1.97484 - 7.76173I$	$-3.86929 + 6.38577I$
$u = 0.261322 + 0.276894I$ $a = -2.02402 - 2.94250I$ $b = -1.130570 - 0.630186I$	$5.45172 - 3.41582I$	$0.19962 + 2.07440I$
$u = 0.261322 - 0.276894I$ $a = -2.02402 + 2.94250I$ $b = -1.130570 + 0.630186I$	$5.45172 + 3.41582I$	$0.19962 - 2.07440I$
$u = -1.77785 + 0.35616I$ $a = 0.794821 - 0.439524I$ $b = 2.03221 - 0.27091I$	$-10.49050 + 7.03206I$	$-4.68824 - 5.11742I$
$u = -1.77785 - 0.35616I$ $a = 0.794821 + 0.439524I$ $b = 2.03221 + 0.27091I$	$-10.49050 - 7.03206I$	$-4.68824 + 5.11742I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.78768 + 0.39075I$ $a = -0.782070 - 0.541782I$ $b = -1.84939 - 0.11154I$	$-9.89698 - 1.84815I$	$-3.80483 - 0.45512I$
$u = 1.78768 - 0.39075I$ $a = -0.782070 + 0.541782I$ $b = -1.84939 + 0.11154I$	$-9.89698 + 1.84815I$	$-3.80483 + 0.45512I$
$u = -0.69832 + 1.71552I$ $a = -0.082350 + 0.251169I$ $b = 0.820658 + 0.108803I$	$0.227845 - 0.102984I$	$-1.99347 - 4.00034I$
$u = -0.69832 - 1.71552I$ $a = -0.082350 - 0.251169I$ $b = 0.820658 - 0.108803I$	$0.227845 + 0.102984I$	$-1.99347 + 4.00034I$
$u = -1.84939 + 0.11154I$ $a = 0.680577 - 0.647893I$ $b = 1.78768 - 0.39075I$	$-9.89698 + 1.84815I$	$-3.80483 + 0.45512I$
$u = -1.84939 - 0.11154I$ $a = 0.680577 + 0.647893I$ $b = 1.78768 + 0.39075I$	$-9.89698 - 1.84815I$	$-3.80483 - 0.45512I$
$u = 2.03221 + 0.27091I$ $a = -0.676121 - 0.433678I$ $b = -1.77785 - 0.35616I$	$-10.49050 - 7.03206I$	$-4.00000 + 5.11742I$
$u = 2.03221 - 0.27091I$ $a = -0.676121 + 0.433678I$ $b = -1.77785 + 0.35616I$	$-10.49050 + 7.03206I$	$-4.00000 - 5.11742I$

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

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -2u^8 - 8u^7 - 6u^6 + 13u^5 + 23u^4 + 10u^3 - 3u^2 - 3u - 1 \\ -u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^8 + 3u^7 - u^6 - 10u^5 - 6u^4 + 7u^3 + 9u^2 + u - 2 \\ -u^7 - 3u^6 + 7u^4 + 5u^3 - u^2 - u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -2u^8 - 8u^7 - 6u^6 + 13u^5 + 23u^4 + 10u^3 - 3u^2 - 3u - 1 \\ -u^7 - 3u^6 + 7u^4 + 5u^3 - u^2 - 3u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -2u^8 - 8u^7 - 6u^6 + 13u^5 + 23u^4 + 10u^3 - 3u^2 - 2u - 1 \\ -u^7 - 3u^6 + 7u^4 + 6u^3 - u^2 - 3u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^8 - 3u^7 + u^6 + 10u^5 + 6u^4 - 8u^3 - 9u^2 + 2u + 2 \\ 2u^8 + 7u^7 + 2u^6 - 16u^5 - 16u^4 + 2u^3 + 8u^2 + u - 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 2u^8 + 5u^7 - 5u^6 - 19u^5 - 3u^4 + 19u^3 + 13u^2 - 4u - 3 \\ u^2 + u - 1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^7 - 4u^6 - 3u^5 + 7u^4 + 12u^3 + 3u^2 - 3u \\ -u^8 - 3u^7 + 6u^5 + 4u^4 + u^3 - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 6u^8 + 22u^7 + 14u^6 - 35u^5 - 59u^4 - 26u^3 + 10u^2 - 4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^9-10u^8+39u^7-77u^6+97u^5-91u^4+51u^3-26u^2+8u-1$
c_2, c_{10}	$u^9+4u^8+3u^7-7u^6-13u^5-5u^4+5u^3+4u^2-1$
c_3	$u^9+2u^8+3u^7-4u^5-6u^4+7u^2+5u+1$
c_4	$u^9-u^6+5u^5-14u^4-3u^3+3u^2+u-1$
c_5	$u^9-4u^8+3u^7+7u^6-13u^5+5u^4+5u^3-4u^2+1$
c_6	$u^9-2u^8+5u^7-6u^6+11u^5-8u^4+10u^3-5u^2+4u-1$
c_7	$u^9+u^8-2u^7-2u^6+2u^5+3u^4+2u^3+2u^2+u+1$
c_8, c_{11}	$u^9-u^8-2u^7+2u^6+2u^5-3u^4+2u^3-2u^2+u-1$
c_9	$u^9+2u^8+5u^7+6u^6+11u^5+8u^4+10u^3+5u^2+4u+1$
c_{12}	$u^9+2u^8-6u^7-7u^6+15u^5+4u^4-8u^3-3u^2+2u-1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^9 - 22y^8 + \cdots + 12y - 1$
c_2, c_5, c_{10}	$y^9 - 10y^8 + 39y^7 - 77y^6 + 97y^5 - 91y^4 + 51y^3 - 26y^2 + 8y - 1$
c_3	$y^9 + 2y^8 + y^7 - 2y^5 - 10y^4 + 44y^3 - 37y^2 + 11y - 1$
c_4	$y^9 + 10y^7 - 7y^6 - y^5 - 220y^4 + 101y^3 - 43y^2 + 7y - 1$
c_6, c_9	$y^9 + 6y^8 + 23y^7 + 62y^6 + 113y^5 + 132y^4 + 96y^3 + 39y^2 + 6y - 1$
c_7, c_8, c_{11}	$y^9 - 5y^8 + 12y^7 - 14y^6 + 6y^5 + y^4 - 6y^2 - 3y - 1$
c_{12}	$y^9 - 16y^8 + 94y^7 - 261y^6 + 393y^5 - 318y^4 + 134y^3 - 33y^2 - 2y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.865294 + 0.634244I$ $a = 0.435521 - 1.098430I$ $b = 0.865294 - 0.634244I$	$5.42733 + 5.08303I$	$0.17320 - 7.12597I$
$u = -0.865294 - 0.634244I$ $a = 0.435521 + 1.098430I$ $b = 0.865294 + 0.634244I$	$5.42733 - 5.08303I$	$0.17320 + 7.12597I$
$u = -0.538784 + 0.553717I$ $a = -1.116470 + 0.596317I$ $b = 0.538784 - 0.553717I$	$4.45461 + 7.56243I$	$-0.11124 - 7.39319I$
$u = -0.538784 - 0.553717I$ $a = -1.116470 - 0.596317I$ $b = 0.538784 + 0.553717I$	$4.45461 - 7.56243I$	$-0.11124 + 7.39319I$
$u = 1.45391$ $a = -0.210908$ $b = -1.45391$	-0.245409	0.377120
$u = 0.526629 + 0.094661I$ $a = -0.38098 + 1.63789I$ $b = -0.526629 - 0.094661I$	$-0.68115 + 1.57729I$	$-9.12272 - 4.78889I$
$u = 0.526629 - 0.094661I$ $a = -0.38098 - 1.63789I$ $b = -0.526629 + 0.094661I$	$-0.68115 - 1.57729I$	$-9.12272 + 4.78889I$
$u = -1.84951 + 0.27593I$ $a = 0.667388 - 0.551500I$ $b = 1.84951 - 0.27593I$	$-10.72300 + 4.06248I$	$-5.12780 - 2.06389I$
$u = -1.84951 - 0.27593I$ $a = 0.667388 + 0.551500I$ $b = 1.84951 + 0.27593I$	$-10.72300 - 4.06248I$	$-5.12780 + 2.06389I$

IV. $I_4^u = \langle b+1,\ 3a-4u-2,\ 2u^2+4u+3\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1\\-2u-\frac{3}{2}\end{pmatrix}$$
$$a_9 = \begin{pmatrix}\frac{4}{3}u+\frac{2}{3}\\-1\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-\frac{4}{3}u-\frac{8}{3}\\-u-2\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}\frac{4}{3}u+\frac{2}{3}\\2u+2\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}\frac{4}{3}u+\frac{5}{3}\\0.5\end{pmatrix}$$
$$a_1 = \begin{pmatrix}2u+\frac{5}{2}\\2u+\frac{15}{4}\end{pmatrix}$$
$$a_5 = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}\frac{5}{3}u+\frac{4}{3}\\\frac{3}{2}u+1\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-\frac{1}{3}u-\frac{2}{3}\\-\frac{3}{2}u-2\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}\frac{4}{3}u+\frac{13}{6}\\u+\frac{11}{4}\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$16y^2 + 56y + 81$
c_2, c_5, c_7 c_{11}	$4y^2 - 4y + 9$
c_3, c_6, c_9	$(y + 2)^2$
c_4, c_{12}	$(4y - 1)^2$
c_8, c_{10}	$(y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.000000 + 0.707107I$ $a = -0.666667 + 0.942809I$ $b = -1.00000$	4.93480	0
$u = -1.000000 - 0.707107I$ $a = -0.666667 - 0.942809I$ $b = -1.00000$	4.93480	0

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5 c_7, c_8, c_{10} c_{11}	$(y-1)^2$
c_3, c_4	$y^2 + 2y + 9$
c_6, c_9, c_{12}	$(y+2)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ \ 1.00000$ $a = \qquad 1.414210I$ $b = -1.00000$	4.93480	0
$u = \ \ 1.00000$ $a = \qquad -1.414210I$ $b = -1.00000$	4.93480	0

VI. $I_6^u = \langle 2b - a - 2,\ a^2 + 2,\ u - 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5 c_7, c_{11}	$(y-1)^2$
c_3, c_4, c_6 c_9, c_{12}	$(y+2)^2$
c_8, c_{10}	$4(4y^2-4y+9)$

(vi) Complex Volumes and Cusp Shapes

	Solutions to I^u_6	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u =$	1.00000		
$a =$	$1.414210I$	4.93480	0
$b =$	$1.000000 + 0.707107I$		
$u =$	1.00000		
$a =$	$-1.414210I$	4.93480	0
$b =$	$1.000000 - 0.707107I$		

VII. $I_7^u = \langle b+1,\ a,\ u-1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_4 = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_7^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = 0$ $b = -1.00000$	0	0

VIII. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^5(4u^2-4u+9)$ $\cdot(u^9-10u^8+39u^7-77u^6+97u^5-91u^4+51u^3-26u^2+8u-1)$ $\cdot(u^{19}+29u^{18}+\cdots-21u+1)$ $\cdot(4u^{28}+124u^{27}+\cdots+3496386u+346921)$
c_2	$(u-1)^5(2u^2+4u+3)$ $\cdot(u^9+4u^8+3u^7-7u^6-13u^5-5u^4+5u^3+4u^2-1)$ $\cdot(u^{19}+u^{18}+\cdots-u+1)(2u^{28}-31u^{26}+\cdots+1810u+589)$
c_3	$(u+1)(u^2+2)^2(u^2+2u+3)(u^9+2u^8+\cdots+5u+1)$ $\cdot((u^{14}+3u^{13}+\cdots+6u+2)^2)(u^{19}-12u^{18}+\cdots-112u+8)$
c_4	$(u-1)(2u+1)^2(u^2+2)(u^2+2u+3)$ $\cdot(u^9-u^6+\cdots+u-1)(u^{19}+u^{18}+\cdots+38u+19)$ $\cdot(4u^{28}+4u^{27}+\cdots+2910u+1318)$
c_5	$(u+1)^5(2u^2-4u+3)$ $\cdot(u^9-4u^8+3u^7+7u^6-13u^5+5u^4+5u^3-4u^2+1)$ $\cdot(u^{19}+u^{18}+\cdots-u+1)(2u^{28}-31u^{26}+\cdots+1810u+589)$
c_6	$u(u^2+2)^3(u^9-2u^8+\cdots+4u-1)$ $\cdot((u^{14}+4u^{13}+\cdots+6u+2)^2)(u^{19}-11u^{18}+\cdots+192u-16)$
c_7	$(u-1)^4(u+1)(2u^2+4u+3)$ $\cdot(u^9+u^8-2u^7-2u^6+2u^5+3u^4+2u^3+2u^2+u+1)$ $\cdot(u^{19}-6u^{17}+\cdots+2u+1)(2u^{28}-3u^{26}+\cdots+18u+143)$
c_8	$4(u-1)(u+1)^4(2u^2-4u+3)$ $\cdot(u^9-u^8-2u^7+2u^6+2u^5-3u^4+2u^3-2u^2+u-1)$ $\cdot(u^{19}-6u^{17}+\cdots+2u+1)(2u^{28}-3u^{26}+\cdots+18u+143)$
c_9	$u(u^2+2)^3(u^9+2u^8+\cdots+4u+1)$ $\cdot((u^{14}+4u^{13}+\cdots+6u+2)^2)(u^{19}-11u^{18}+\cdots+192u-16)$
c_{10}	$4(u-1)^5(2u^2+4u+3)$ $\cdot(u^9+4u^8+3u^7-7u^6-13u^5-5u^4+5u^3+4u^2-1)$ $\cdot(u^{19}+u^{18}+\cdots-u+1)(2u^{28}-31u^{26}+\cdots+1810u+589)$
c_{11}	$(u-1)(u+1)^4(2u^2-4u+3)$ $\cdot(u^9-u^8-2u^7+2u^6+2u^5-3u^4+2u^3-2u^2+u-1)$ $\cdot(u^{19}-6u^{17}+\cdots+2u+1)(2u^{28}-3u^{26}+\cdots+18u+143)$
c_{12}	$u(2u-1)^2(u^2+2)^2$ $\cdot(u^9+2u^8-6u^7-7u^6+15u^5+4u^4-8u^3-3u^2+2u-1)$ $\cdot(u^{19}-2u^{18}+\cdots+640u+206)$ $\cdot(4u^{28}+4u^{27}+\cdots-331822u+51386)$

IX. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^5)(16y^2+56y+81)(y^9-22y^8+\cdots+12y-1)$ $\cdot(y^{19}-89y^{18}+\cdots+167y-1)$ $\cdot(16y^{28}-1192y^{27}+\cdots+11203834917014y+120354180241)$
c_2, c_5	$(y-1)^5(4y^2-4y+9)$ $\cdot(y^9-10y^8+39y^7-77y^6+97y^5-91y^4+51y^3-26y^2+8y-1)$ $\cdot(y^{19}-29y^{18}+\cdots-21y-1)$ $\cdot(4y^{28}-124y^{27}+\cdots-3496386y+346921)$
c_3	$(y-1)(y+2)^4(y^2+2y+9)$ $\cdot(y^9+2y^8+y^7-2y^5-10y^4+44y^3-37y^2+11y-1)$ $\cdot((y^{14}+7y^{13}+\cdots+40y+4)^2)(y^{19}+4y^{18}+\cdots+2272y-64)$
c_4	$(y-1)(y+2)^2(4y-1)^2(y^2+2y+9)$ $\cdot(y^9+10y^7-7y^6-y^5-220y^4+101y^3-43y^2+7y-1)$ $\cdot(y^{19}+17y^{18}+\cdots+342y-361)$ $\cdot(16y^{28}+120y^{27}+\cdots+33072624y+1737124)$
c_6, c_9	$y(y+2)^6$ $\cdot(y^9+6y^8+23y^7+62y^6+113y^5+132y^4+96y^3+39y^2+6y-1)$ $\cdot((y^{14}+14y^{12}+\cdots-16y+4)^2)(y^{19}+9y^{18}+\cdots+10112y-256)$
c_7, c_{11}	$(y-1)^5(4y^2-4y+9)$ $\cdot(y^9-5y^8+12y^7-14y^6+6y^5+y^4-6y^2-3y-1)$ $\cdot(y^{19}-12y^{18}+\cdots+20y-1)(4y^{28}-12y^{27}+\cdots-208818y+20449)$
c_8	$16(y-1)^5(4y^2-4y+9)$ $\cdot(y^9-5y^8+12y^7-14y^6+6y^5+y^4-6y^2-3y-1)$ $\cdot(y^{19}-12y^{18}+\cdots+20y-1)(4y^{28}-12y^{27}+\cdots-208818y+20449)$
c_{10}	$16(y-1)^5(4y^2-4y+9)$ $\cdot(y^9-10y^8+39y^7-77y^6+97y^5-91y^4+51y^3-26y^2+8y-1)$ $\cdot(y^{19}-29y^{18}+\cdots-21y-1)$ $\cdot(4y^{28}-124y^{27}+\cdots-3496386y+346921)$
c_{12}	$y(y+2)^4(4y-1)^2$ $\cdot(y^9-16y^8+94y^7-261y^6+393y^5-318y^4+134y^3-33y^2-2y-1)$ $\cdot(y^{19}-44y^{18}+\cdots+39624y-42436)$ $\cdot(16y^{28}-872y^{27}+\cdots+9391789456y+2640520996)$