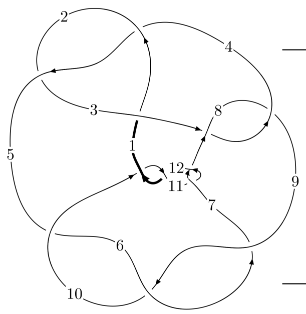
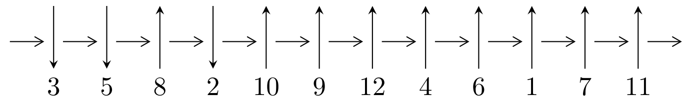
$12a_{0089}$ $(K12a_{0089})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -2.39749 \times 10^{215} u^{99} - 3.64797 \times 10^{215} u^{98} + \cdots + 1.47790 \times 10^{217} b - 8.18496 \times 10^{217}, \\
& - 7.22651 \times 10^{217} u^{99} - 1.52650 \times 10^{218} u^{98} + \cdots + 6.20718 \times 10^{218} a + 5.09074 \times 10^{219}, \\
& u^{100} + 2u^{99} + \cdots - 329u - 49 \rangle \\
I_2^u = \langle & 1878a^5 u - 2600a^4 u + \cdots + 23830a - 8647, \\
& a^6 + 3a^5 u - 4a^5 - 7a^4 u - a^4 + a^3 u - 3a^3 - 9a^2 u + 5a^2 + 6au + 2a - u,\ u^2 + 1 \rangle \\
I_3^u = \langle & b + 1,\ -u^3 - u^2 + a - 3u - 2,\ u^5 + u^4 + 4u^3 + 3u^2 + 3u + 1 \rangle
\end{aligned}$$

* 3 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. $\boldsymbol{I_1^u = \langle -2.40 \times 10^{215} u^{99} - 3.65 \times 10^{215} u^{98} + \cdots + 1.48 \times 10^{217} b - 8.18 \times 10^{217},\ -7.23 \times 10^{217} u^{99} - 1.53 \times 10^{218} u^{98} + \cdots + 6.21 \times 10^{218} a + 5.09 \times 10^{219},\ u^{100} + 2u^{99} + \cdots - 329u - 49 \rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.116422u^{99} + 0.245925u^{98} + \cdots - 89.5951u - 8.20137 \\ 0.0162222u^{99} + 0.0246835u^{98} + \cdots + 12.6540u + 5.53823 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.132644u^{99} + 0.270609u^{98} + \cdots - 76.9410u - 2.66314 \\ 0.0162222u^{99} + 0.0246835u^{98} + \cdots + 12.6540u + 5.53823 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.109624u^{99} + 0.205069u^{98} + \cdots - 101.450u - 13.1153 \\ 0.0556512u^{99} + 0.125051u^{98} + \cdots - 32.6639u - 1.40263 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.0962786u^{99} + 0.162953u^{98} + \cdots - 42.0923u + 2.63606 \\ -0.0148568u^{99} - 0.0180767u^{98} + \cdots + 15.1895u + 5.87732 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.0397497u^{99} + 0.138384u^{98} + \cdots - 87.1158u - 19.5365 \\ 0.0202763u^{99} + 0.0752641u^{98} + \cdots - 32.7675u - 4.86979 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.0290553u^{99} + 0.0399308u^{98} + \cdots + 26.9108u + 15.1478 \\ -0.0135353u^{99} - 0.0340762u^{98} + \cdots + 44.4150u + 8.98928 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0.109897u^{99} + 0.198612u^{98} + \cdots - 42.6716u + 4.91221 \\ -0.0101391u^{99} - 0.0246196u^{98} + \cdots + 21.3117u + 6.96002 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.216920u^{99} + 0.318284u^{98} + \cdots - 68.3104u + 21.0535$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{100} + 50u^{99} + \cdots + 79u + 1$
c_2, c_4	$u^{100} - 10u^{99} + \cdots + 11u - 1$
c_3, c_8	$u^{100} + u^{99} + \cdots + 224u + 32$
c_5, c_6, c_9	$u^{100} + 2u^{99} + \cdots - 329u - 49$
c_7, c_{11}	$u^{100} + 2u^{99} + \cdots - 15u - 17$
c_{10}, c_{12}	$u^{100} - 32u^{99} + \cdots + 149u + 289$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{100} + 10y^{99} + \cdots - 2487y + 1$
c_2, c_4	$y^{100} - 50y^{99} + \cdots - 79y + 1$
c_3, c_8	$y^{100} - 45y^{99} + \cdots - 52736y + 1024$
c_5, c_6, c_9	$y^{100} + 98y^{99} + \cdots + 34251y + 2401$
c_7, c_{11}	$y^{100} - 32y^{99} + \cdots + 149y + 289$
c_{10}, c_{12}	$y^{100} + 80y^{99} + \cdots - 3531239y + 83521$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.065515+0.990541I$ $a=-0.41447+7.77506I$ $b=-1.024690-0.010060I$	$-3.35320-2.04195I$	0
$u=-0.065515-0.990541I$ $a=-0.41447-7.77506I$ $b=-1.024690+0.010060I$	$-3.35320+2.04195I$	0
$u=-0.969042+0.362969I$ $a=-0.44792-1.56289I$ $b=\ \ 1.167800+0.578024I$	$-1.88652-12.41730I$	0
$u=-0.969042-0.362969I$ $a=-0.44792+1.56289I$ $b=\ \ 1.167800-0.578024I$	$-1.88652+12.41730I$	0
$u=\ \ 0.940871+0.436198I$ $a=-0.35176+1.46851I$ $b=\ \ 1.145610-0.541902I$	$-2.76156+6.42552I$	0
$u=\ \ 0.940871-0.436198I$ $a=-0.35176-1.46851I$ $b=\ \ 1.145610+0.541902I$	$-2.76156-6.42552I$	0
$u=-0.449054+0.956643I$ $a=\ \ 0.757248-1.013000I$ $b=\ \ 0.254382+0.493343I$	$-1.24139+2.42018I$	0
$u=-0.449054-0.956643I$ $a=\ \ 0.757248+1.013000I$ $b=\ \ 0.254382-0.493343I$	$-1.24139-2.42018I$	0
$u=-0.246189+1.031340I$ $a=-0.113223+0.585328I$ $b=\ \ 0.978093-0.719756I$	$2.20888+3.42556I$	0
$u=-0.246189-1.031340I$ $a=-0.113223-0.585328I$ $b=\ \ 0.978093+0.719756I$	$2.20888-3.42556I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.843566 + 0.298352I$ $a = -0.38582 + 1.43354I$ $b = 0.289367 - 0.846254I$	$0.73862 - 7.15845I$	0
$u = -0.843566 - 0.298352I$ $a = -0.38582 - 1.43354I$ $b = 0.289367 + 0.846254I$	$0.73862 + 7.15845I$	0
$u = -0.299712 + 1.087720I$ $a = 0.278229 - 1.043020I$ $b = 0.683576 + 0.775155I$	$3.05539 - 2.19835I$	0
$u = -0.299712 - 1.087720I$ $a = 0.278229 + 1.043020I$ $b = 0.683576 - 0.775155I$	$3.05539 + 2.19835I$	0
$u = 0.764156 + 0.417633I$ $a = 0.82151 - 2.08873I$ $b = -1.072760 + 0.478965I$	$-3.62812 + 6.33519I$	0
$u = 0.764156 - 0.417633I$ $a = 0.82151 + 2.08873I$ $b = -1.072760 - 0.478965I$	$-3.62812 - 6.33519I$	0
$u = 0.588441 + 0.632133I$ $a = 0.860063 + 0.744032I$ $b = -1.160920 - 0.298625I$	$-4.41103 - 1.68246I$	0
$u = 0.588441 - 0.632133I$ $a = 0.860063 - 0.744032I$ $b = -1.160920 + 0.298625I$	$-4.41103 + 1.68246I$	0
$u = 0.187210 + 1.126150I$ $a = 1.048240 + 0.603763I$ $b = -0.668387 - 0.373530I$	$-1.86846 + 1.01624I$	0
$u = 0.187210 - 1.126150I$ $a = 1.048240 - 0.603763I$ $b = -0.668387 + 0.373530I$	$-1.86846 - 1.01624I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.680822 + 0.503951I$ $a = 0.71326 + 2.08961I$ $b = -1.097340 - 0.410444I$	$-4.15515 - 0.77241I$	0
$u = -0.680822 - 0.503951I$ $a = 0.71326 - 2.08961I$ $b = -1.097340 + 0.410444I$	$-4.15515 + 0.77241I$	0
$u = 0.775959 + 0.333569I$ $a = -0.247079 - 1.299000I$ $b = 0.253877 + 0.752651I$	$-0.16735 + 1.55705I$	0
$u = 0.775959 - 0.333569I$ $a = -0.247079 + 1.299000I$ $b = 0.253877 - 0.752651I$	$-0.16735 - 1.55705I$	0
$u = 0.796339 + 0.840767I$ $a = -0.413671 - 0.190155I$ $b = 1.063020 + 0.436471I$	$-3.95267 - 0.55388I$	0
$u = 0.796339 - 0.840767I$ $a = -0.413671 + 0.190155I$ $b = 1.063020 - 0.436471I$	$-3.95267 + 0.55388I$	0
$u = -0.670815 + 0.499865I$ $a = 0.827036 - 0.598048I$ $b = -1.224950 + 0.246355I$	$-4.17026 - 3.77857I$	0
$u = -0.670815 - 0.499865I$ $a = 0.827036 + 0.598048I$ $b = -1.224950 - 0.246355I$	$-4.17026 + 3.77857I$	0
$u = 0.471451 + 1.064550I$ $a = 0.468004 + 0.750338I$ $b = 0.586409 - 0.261443I$	$-2.12923 + 2.75082I$	0
$u = 0.471451 - 1.064550I$ $a = 0.468004 - 0.750338I$ $b = 0.586409 + 0.261443I$	$-2.12923 - 2.75082I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.748764+0.934617I$ $a=-0.435746+0.254991I$ $b=\ \ 1.101640-0.489464I$	$-3.58978+6.56550I$	0
$u=-0.748764-0.934617I$ $a=-0.435746-0.254991I$ $b=\ \ 1.101640+0.489464I$	$-3.58978-6.56550I$	0
$u=\ \ 0.545121+0.587251I$ $a=\ \ 0.377482+1.297890I$ $b=\ \ 0.940217-0.555672I$	$0.74183+4.19177I$	$0.-6.66805I$
$u=\ \ 0.545121-0.587251I$ $a=\ \ 0.377482-1.297890I$ $b=\ \ 0.940217+0.555672I$	$0.74183-4.19177I$	$0.+6.66805I$
$u=-0.681505+0.289527I$ $a=\ \ 0.03851-1.94789I$ $b=\ \ 1.043400+0.637281I$	$4.27099-6.89948I$	$11.43396+7.69737I$
$u=-0.681505-0.289527I$ $a=\ \ 0.03851+1.94789I$ $b=\ \ 1.043400-0.637281I$	$4.27099+6.89948I$	$11.43396-7.69737I$
$u=-0.721641+0.152687I$ $a=-0.844995+1.089000I$ $b=\ \ 0.516426-0.779174I$	$5.82753-1.57926I$	$14.4879+1.7882I$
$u=-0.721641-0.152687I$ $a=-0.844995-1.089000I$ $b=\ \ 0.516426+0.779174I$	$5.82753+1.57926I$	$14.4879-1.7882I$
$u=-0.082557+1.272520I$ $a=-1.88035-0.05417I$ $b=-1.159760+0.213440I$	$-3.77500-2.20981I$	0
$u=-0.082557-1.272520I$ $a=-1.88035+0.05417I$ $b=-1.159760-0.213440I$	$-3.77500+2.20981I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.210143+1.259280I$ $a=0.208298-0.400854I$ $b=0.395459-0.440267I$	$-0.98799+1.90733I$	0
$u=-0.210143-1.259280I$ $a=0.208298+0.400854I$ $b=0.395459+0.440267I$	$-0.98799-1.90733I$	0
$u=-0.000512+1.327390I$ $a=-0.130531+0.995414I$ $b=0.925020-0.921002I$	$-0.781932+0.661024I$	0
$u=-0.000512-1.327390I$ $a=-0.130531-0.995414I$ $b=0.925020+0.921002I$	$-0.781932-0.661024I$	0
$u=0.609534+0.272478I$ $a=-0.584068-0.350171I$ $b=0.636787+0.561311I$	$1.64920-0.29233I$	$8.03329-0.15871I$
$u=0.609534-0.272478I$ $a=-0.584068+0.350171I$ $b=0.636787-0.561311I$	$1.64920+0.29233I$	$8.03329+0.15871I$
$u=-0.092924+1.331590I$ $a=-0.065930-1.068640I$ $b=0.866501+0.946140I$	$-0.60519-6.07717I$	0
$u=-0.092924-1.331590I$ $a=-0.065930+1.068640I$ $b=0.866501-0.946140I$	$-0.60519+6.07717I$	0
$u=0.171260+1.324520I$ $a=-1.05185-1.79678I$ $b=-1.035660+0.449155I$	$-3.23240+4.53436I$	0
$u=0.171260-1.324520I$ $a=-1.05185+1.79678I$ $b=-1.035660-0.449155I$	$-3.23240-4.53436I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.158952 + 1.352890I$ $a = 0.057726 - 0.217470I$ $b = 0.119895 + 0.688596I$	$-3.26940 + 2.41579I$	0
$u = 0.158952 - 1.352890I$ $a = 0.057726 + 0.217470I$ $b = 0.119895 - 0.688596I$	$-3.26940 - 2.41579I$	0
$u = -0.270114 + 1.346370I$ $a = -0.440781 + 0.149707I$ $b = 0.326391 - 0.819413I$	$1.09915 - 5.14819I$	0
$u = -0.270114 - 1.346370I$ $a = -0.440781 - 0.149707I$ $b = 0.326391 + 0.819413I$	$1.09915 + 5.14819I$	0
$u = 0.359092 + 0.487765I$ $a = 1.79802 + 1.38487I$ $b = -0.343192 - 0.347888I$	$-1.57085 + 2.44408I$	$6.62536 - 3.00383I$
$u = 0.359092 - 0.487765I$ $a = 1.79802 - 1.38487I$ $b = -0.343192 + 0.347888I$	$-1.57085 - 2.44408I$	$6.62536 + 3.00383I$
$u = -0.039784 + 1.394580I$ $a = -1.10221 + 0.98947I$ $b = -1.170370 - 0.381652I$	$-6.92039 - 1.32032I$	0
$u = -0.039784 - 1.394580I$ $a = -1.10221 - 0.98947I$ $b = -1.170370 + 0.381652I$	$-6.92039 + 1.32032I$	0
$u = 0.060535 + 0.600233I$ $a = 2.03401 - 0.69858I$ $b = -0.267096 + 0.124271I$	$-1.59835 + 2.35283I$	$6.98886 - 5.08882I$
$u = 0.060535 - 0.600233I$ $a = 2.03401 + 0.69858I$ $b = -0.267096 - 0.124271I$	$-1.59835 - 2.35283I$	$6.98886 + 5.08882I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.583705 + 0.093529I$ $a = 1.08030 - 2.39263I$ $b = -0.837645 + 0.440777I$	$1.17772 + 1.85934I$	$10.62955 - 4.30757I$
$u = 0.583705 - 0.093529I$ $a = 1.08030 + 2.39263I$ $b = -0.837645 - 0.440777I$	$1.17772 - 1.85934I$	$10.62955 + 4.30757I$
$u = -0.10232 + 1.46119I$ $a = 1.233410 - 0.510771I$ $b = 1.064130 + 0.480659I$	$-2.93294 - 2.08208I$	0
$u = -0.10232 - 1.46119I$ $a = 1.233410 + 0.510771I$ $b = 1.064130 - 0.480659I$	$-2.93294 + 2.08208I$	0
$u = -0.26298 + 1.44481I$ $a = 1.06935 - 1.24629I$ $b = 1.148140 + 0.579376I$	$-1.35388 - 10.35240I$	0
$u = -0.26298 - 1.44481I$ $a = 1.06935 + 1.24629I$ $b = 1.148140 - 0.579376I$	$-1.35388 + 10.35240I$	0
$u = -0.530564$ $a = 0.408996$ $b = -1.19118$	-0.0949506	15.0060
$u = 0.17399 + 1.46493I$ $a = 0.589969 + 0.807489I$ $b = -0.470039 - 0.824556I$	$-7.81095 + 4.69129I$	0
$u = 0.17399 - 1.46493I$ $a = 0.589969 - 0.807489I$ $b = -0.470039 + 0.824556I$	$-7.81095 - 4.69129I$	0
$u = -0.11054 + 1.47556I$ $a = 0.500820 - 0.770357I$ $b = -0.381208 + 0.834378I$	$-8.30671 + 1.25779I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.11054 - 1.47556I$ $a = 0.500820 + 0.770357I$ $b = -0.381208 - 0.834378I$	$-8.30671 - 1.25779I$	0
$u = 0.29268 + 1.46125I$ $a = -0.402718 - 0.591662I$ $b = 0.224404 + 0.986853I$	$-5.97166 + 5.43704I$	0
$u = 0.29268 - 1.46125I$ $a = -0.402718 + 0.591662I$ $b = 0.224404 - 0.986853I$	$-5.97166 - 5.43704I$	0
$u = -0.33248 + 1.45296I$ $a = -0.522607 + 0.612576I$ $b = 0.276570 - 1.013290I$	$-4.88626 - 11.41650I$	0
$u = -0.33248 - 1.45296I$ $a = -0.522607 - 0.612576I$ $b = 0.276570 + 1.013290I$	$-4.88626 + 11.41650I$	0
$u = -0.23283 + 1.49322I$ $a = -0.434106 + 0.048242I$ $b = -1.39371 + 0.24719I$	$-10.62360 - 7.05864I$	0
$u = -0.23283 - 1.49322I$ $a = -0.434106 - 0.048242I$ $b = -1.39371 - 0.24719I$	$-10.62360 + 7.05864I$	0
$u = 0.27946 + 1.48522I$ $a = -0.35493 - 1.59998I$ $b = -1.116750 + 0.624358I$	$-9.78659 + 10.13180I$	0
$u = 0.27946 - 1.48522I$ $a = -0.35493 + 1.59998I$ $b = -1.116750 - 0.624358I$	$-9.78659 - 10.13180I$	0
$u = -0.23041 + 1.49769I$ $a = -0.41694 + 1.47941I$ $b = -1.150690 - 0.589914I$	$-10.65950 - 4.06737I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.23041 - 1.49769I$ $a = -0.41694 - 1.47941I$ $b = -1.150690 + 0.589914I$	$-10.65950 + 4.06737I$	0
$u = 0.17781 + 1.50580I$ $a = -0.493571 + 0.136163I$ $b = -1.372600 - 0.289952I$	$-11.32570 + 0.98821I$	0
$u = 0.17781 - 1.50580I$ $a = -0.493571 - 0.136163I$ $b = -1.372600 + 0.289952I$	$-11.32570 - 0.98821I$	0
$u = 0.18673 + 1.51693I$ $a = 0.937998 + 0.821389I$ $b = 1.147980 - 0.495591I$	$-6.13141 + 6.86398I$	0
$u = 0.18673 - 1.51693I$ $a = 0.937998 - 0.821389I$ $b = 1.147980 + 0.495591I$	$-6.13141 - 6.86398I$	0
$u = -0.38259 + 1.49851I$ $a = 0.59734 - 1.46380I$ $b = 1.236450 + 0.623365I$	$-7.8475 - 17.3020I$	0
$u = -0.38259 - 1.49851I$ $a = 0.59734 + 1.46380I$ $b = 1.236450 - 0.623365I$	$-7.8475 + 17.3020I$	0
$u = -0.437376 + 0.101038I$ $a = -1.72342 - 0.02563I$ $b = 0.743247 - 0.727481I$	$3.35868 + 4.45930I$	$11.81530 - 5.58434I$
$u = -0.437376 - 0.101038I$ $a = -1.72342 + 0.02563I$ $b = 0.743247 + 0.727481I$	$3.35868 - 4.45930I$	$11.81530 + 5.58434I$
$u = 0.35136 + 1.52269I$ $a = 0.61315 + 1.32966I$ $b = 1.237220 - 0.593339I$	$-9.0801 + 11.1134I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.35136 - 1.52269I$ $a = 0.61315 - 1.32966I$ $b = 1.237220 + 0.593339I$	$-9.0801 - 11.1134I$	0
$u = 0.372232$ $a = 0.631357$ $b = 0.140150$	0.703212	14.5110
$u = -0.168382 + 0.282817I$ $a = -0.07085 + 2.51635I$ $b = -0.931838 - 0.189422I$	$-1.65732 - 0.64432I$	$-2.89537 + 1.61582I$
$u = -0.168382 - 0.282817I$ $a = -0.07085 - 2.51635I$ $b = -0.931838 + 0.189422I$	$-1.65732 + 0.64432I$	$-2.89537 - 1.61582I$
$u = -0.05157 + 1.68989I$ $a = 0.526136 + 0.107090I$ $b = 1.092650 - 0.236274I$	$-13.14570 + 3.76638I$	0
$u = -0.05157 - 1.68989I$ $a = 0.526136 - 0.107090I$ $b = 1.092650 + 0.236274I$	$-13.14570 - 3.76638I$	0
$u = 0.13501 + 1.69283I$ $a = 0.505949 + 0.016872I$ $b = 1.038160 + 0.196931I$	$-12.85800 + 2.90129I$	0
$u = 0.13501 - 1.69283I$ $a = 0.505949 - 0.016872I$ $b = 1.038160 - 0.196931I$	$-12.85800 - 2.90129I$	0
$u = -0.146371 + 0.249725I$ $a = 2.79586 - 1.02647I$ $b = 0.902300 + 0.690824I$	$2.91057 - 0.92428I$	$11.94422 + 0.25513I$
$u = -0.146371 - 0.249725I$ $a = 2.79586 + 1.02647I$ $b = 0.902300 - 0.690824I$	$2.91057 + 0.92428I$	$11.94422 - 0.25513I$

II. $\boldsymbol{I^u_2 =}$
$\boldsymbol{\langle 1878a^5u-2600a^4u+\cdots+23830a-8647,\ 3a^5u-7a^4u+\cdots+5a^2+2a,\ u^2+1\rangle}$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix}a\\-0.313575a^5u+0.434129a^4u+\cdots-3.97896a+1.44381\end{pmatrix}$$

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

$$a_2 = \begin{pmatrix}-0.313575a^5u+0.434129a^4u+\cdots-2.97896a+1.44381\\-0.313575a^5u+0.434129a^4u+\cdots-3.97896a+1.44381\end{pmatrix}$$

$$a_1 = \begin{pmatrix}-0.230422a^5u+0.782267a^4u+\cdots-1.18901a+0.965103\\0.165136a^5u-0.977292a^4u+\cdots+0.0687928a+1.64168\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}-0.230422a^5u+0.782267a^4u+\cdots-1.18901a+0.965103\\0.227918a^5u-0.654199a^4u+\cdots+1.66522a+0.175822\end{pmatrix}$$

$$a_4 = \begin{pmatrix}0.183336a^5u+0.225413a^4u+\cdots+3.74169a-0.115712\\0.478711a^5u-1.41142a^4u+\cdots+4.04775a-0.802137\end{pmatrix}$$

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

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

$$a_8 = \begin{pmatrix}-0.0719653a^5u+0.813157a^4u+\cdots+0.816330a+0.315913\\-0.231758a^5u+0.583904a^4u+\cdots-0.201703a-0.493071\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}-0.230422a^5u+0.782267a^4u+\cdots-1.18901a+0.965103\\0.458340a^5u-1.43647a^4u+\cdots+2.85423a-0.789280\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{5788}{5989}a^5u-\frac{14428}{5989}a^5-\frac{9080}{5989}a^4u+\frac{73372}{5989}a^4+\frac{59108}{5989}a^3u-\frac{39572}{5989}a^3+\frac{20364}{5989}a^2u+\frac{72864}{5989}a^2+\frac{29264}{5989}au-\frac{114876}{5989}a-\frac{34044}{5989}u+\frac{50976}{5989}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.000000I$ $a = -0.450984 + 1.062990I$ $b = 0.877439 - 0.744862I$	$1.37919 + 0.79824I$	$5.50976 + 0.48465I$
$u = 1.000000I$ $a = 0.696107 - 0.426734I$ $b = 0.877439 + 0.744862I$	$1.37919 - 0.79824I$	$5.50976 - 0.48465I$
$u = 1.000000I$ $a = -0.258387 - 1.162360I$ $b = -0.754878$	$-2.75839 - 2.02988I$	$-1.01951 + 3.46410I$
$u = 1.000000I$ $a = 0.111295 - 1.400630I$ $b = 0.877439 + 0.744862I$	$1.37919 - 4.85801I$	$5.50976 + 6.44355I$
$u = 1.000000I$ $a = 0.133827 + 0.089093I$ $b = 0.877439 - 0.744862I$	$1.37919 + 4.85801I$	$5.50976 - 6.44355I$
$u = 1.000000I$ $a = 3.76814 - 1.16236I$ $b = -0.754878$	$-2.75839 + 2.02988I$	$-1.01951 - 3.46410I$
$u = -1.000000I$ $a = -0.450984 - 1.062990I$ $b = 0.877439 + 0.744862I$	$1.37919 - 0.79824I$	$5.50976 - 0.48465I$
$u = -1.000000I$ $a = 0.696107 + 0.426734I$ $b = 0.877439 - 0.744862I$	$1.37919 + 0.79824I$	$5.50976 + 0.48465I$
$u = -1.000000I$ $a = -0.258387 + 1.162360I$ $b = -0.754878$	$-2.75839 + 2.02988I$	$-1.01951 - 3.46410I$
$u = -1.000000I$ $a = 0.111295 + 1.400630I$ $b = 0.877439 - 0.744862I$	$1.37919 + 4.85801I$	$5.50976 - 6.44355I$

Solutions to I_2^u		$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$-1.000000I$		
$a =$	$0.133827 - 0.089093I$	$1.37919 - 4.85801I$	$5.50976 + 6.44355I$
$b =$	$0.877439 + 0.744862I$		
$u =$	$-1.000000I$		
$a =$	$3.76814 + 1.16236I$	$-2.75839 - 2.02988I$	$-1.01951 + 3.46410I$
$b =$	-0.754878		

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

(i) Arc colorings

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

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

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

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

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

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

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

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

$$a_9 = \begin{pmatrix} -u \\ u^3+u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^2+1 \\ -u^4-2u^2 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} -u^2-1 \\ -u^2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u^4+5u^3+12u^2+16u+8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^5$
c_3, c_8	y^5
c_5, c_6, c_9 c_{10}, c_{12}	$y^5 + 7y^4 + 16y^3 + 13y^2 + 3y - 1$
c_7, c_{11}	$y^5 - y^4 + 4y^3 - 3y^2 + 3y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.233677 + 0.885557I$ $a = 1.10636 + 1.69341I$ $b = -1.00000$	$-3.46474 - 2.21397I$	$-0.36497 + 8.87119I$
$u = -0.233677 - 0.885557I$ $a = 1.10636 - 1.69341I$ $b = -1.00000$	$-3.46474 + 2.21397I$	$-0.36497 - 8.87119I$
$u = -0.416284$ $a = 0.852303$ $b = -1.00000$	-0.762751	3.17840
$u = -0.05818 + 1.69128I$ $a = -0.532511 + 0.056433I$ $b = -1.00000$	$-12.60320 - 3.33174I$	$7.77577 + 5.09400I$
$u = -0.05818 - 1.69128I$ $a = -0.532511 - 0.056433I$ $b = -1.00000$	$-12.60320 + 3.33174I$	$7.77577 - 5.09400I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^5)(u^3-u^2+2u-1)^4(u^{100}+50u^{99}+\cdots+79u+1)$
c_2	$((u-1)^5)(u^3+u^2-1)^4(u^{100}-10u^{99}+\cdots+11u-1)$
c_3, c_8	$u^5(u^6-3u^4+2u^2+1)^2(u^{100}+u^{99}+\cdots+224u+32)$
c_4	$((u+1)^5)(u^3-u^2+1)^4(u^{100}-10u^{99}+\cdots+11u-1)$
c_5, c_6	$((u^2+1)^6)(u^5+u^4+\cdots+3u+1)(u^{100}+2u^{99}+\cdots-329u-49)$
c_7	$((u^4-u^2+1)^3)(u^5+u^4-u^2+u+1)(u^{100}+2u^{99}+\cdots-15u-17)$
c_9	$((u^2+1)^6)(u^5-u^4+\cdots+3u-1)(u^{100}+2u^{99}+\cdots-329u-49)$
c_{10}	$(u^2+u+1)^6(u^5+u^4+4u^3+3u^2+3u+1)$ $\cdot(u^{100}-32u^{99}+\cdots+149u+289)$
c_{11}	$((u^4-u^2+1)^3)(u^5-u^4+u^2+u-1)(u^{100}+2u^{99}+\cdots-15u-17)$
c_{12}	$(u^2-u+1)^6(u^5-u^4+4u^3-3u^2+3u-1)$ $\cdot(u^{100}-32u^{99}+\cdots+149u+289)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^5)(y^3+3y^2+2y-1)^4(y^{100}+10y^{99}+\cdots-2487y+1)$
c_2, c_4	$((y-1)^5)(y^3-y^2+2y-1)^4(y^{100}-50y^{99}+\cdots-79y+1)$
c_3, c_8	$y^5(y^3-3y^2+2y+1)^4(y^{100}-45y^{99}+\cdots-52736y+1024)$
c_5, c_6, c_9	$(y+1)^{12}(y^5+7y^4+16y^3+13y^2+3y-1)$ $\cdot(y^{100}+98y^{99}+\cdots+34251y+2401)$
c_7, c_{11}	$(y^2-y+1)^6(y^5-y^4+4y^3-3y^2+3y-1)$ $\cdot(y^{100}-32y^{99}+\cdots+149y+289)$
c_{10}, c_{12}	$(y^2+y+1)^6(y^5+7y^4+16y^3+13y^2+3y-1)$ $\cdot(y^{100}+80y^{99}+\cdots-3531239y+83521)$