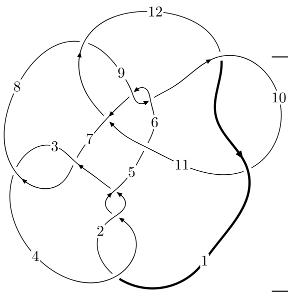
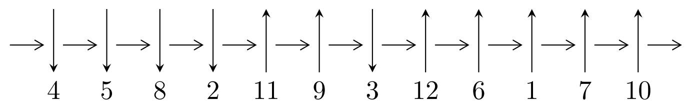
$12a_{0831}$ ($K12a_{0831}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -2.23861\times 10^{153}u^{112} - 1.94908\times 10^{154}u^{111} + \cdots + 1.41771\times 10^{153}b - 2.85035\times 10^{153},\\
& -1.06042\times 10^{155}u^{112} - 1.06831\times 10^{156}u^{111} + \cdots + 2.41011\times 10^{154}a - 2.12527\times 10^{155},\\
& u^{113} + 10u^{112} + \cdots + u + 1\rangle\\
I_2^u = \langle & b - a + 1,\ a^8 - 7a^7 + 18a^6 - 19a^5 + 3a^4 + 7a^3 - 3a - 1,\ u - 1\rangle\\
I_3^u = \langle & b - 1,\ 12u^2 + 17a + 11u + 9,\ u^3 + u^2 - 1\rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 124 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. $\boldsymbol{I_1^u = \langle -2.24\times 10^{153}u^{112} - 1.95\times 10^{154}u^{111} + \cdots + 1.42\times 10^{153}b - 2.85\times 10^{153},\ -1.06\times 10^{155}u^{112} - 1.07\times 10^{156}u^{111} + \cdots + 2.41\times 10^{154}a - 2.13\times 10^{155},\ u^{113} + 10u^{112} + \cdots + u + 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 4.39989u^{112} + 44.3263u^{111} + \cdots + 0.337698u + 8.81814 \\ 1.57903u^{112} + 13.7481u^{111} + \cdots - 1.54070u + 2.01053 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 146.341u^{112} + 1220.77u^{111} + \cdots + 56.2109u + 77.1163 \\ -24.3000u^{112} - 201.744u^{111} + \cdots - 0.0298499u - 14.3881 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 2.82086u^{112} + 30.5782u^{111} + \cdots + 1.87840u + 6.80761 \\ 1.57903u^{112} + 13.7481u^{111} + \cdots - 1.54070u + 2.01053 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -121.246u^{112} - 1055.93u^{111} + \cdots + 46.5652u - 94.4330 \\ 44.6934u^{112} + 377.381u^{111} + \cdots + 14.9969u + 28.5017 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 54.0067u^{112} + 457.695u^{111} + \cdots + 0.437708u + 36.6651 \\ -37.0169u^{112} - 318.661u^{111} + \cdots - 9.85778u - 26.5176 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 4.19011u^{112} + 42.4920u^{111} + \cdots - 7.17546u + 10.6493 \\ 1.66036u^{112} + 14.9044u^{111} + \cdots - 3.79535u + 2.40863 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -36.0266u^{112} - 322.681u^{111} + \cdots + 5.32016u - 34.2462 \\ 144.917u^{112} + 1252.66u^{111} + \cdots + 32.6876u + 104.913 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 110.765u^{112} + 946.066u^{111} + \cdots + 40.9255u + 80.6906$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_4	$u^{113} - 10u^{112} + \cdots + u - 1$
c_3, c_7	$u^{113} - 2u^{112} + \cdots + 896u - 256$
c_5	$17(17u^{113} + 212u^{112} + \cdots - 115224u - 34421)$
c_6, c_9	$u^{113} + 3u^{112} + \cdots + 3u + 1$
c_8	$17(17u^{113} + 219u^{112} + \cdots + 16199u + 2539)$
c_{10}, c_{12}	$u^{113} + 5u^{112} + \cdots - 1158u + 289$
c_{11}	$u^{113} + 2u^{112} + \cdots - 41820u - 2312$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$y^{113} - 100y^{112} + \cdots - 13y - 1$
c_3, c_7	$y^{113} - 48y^{112} + \cdots + 1425408y - 65536$
c_5	$289(289y^{113} - 1016y^{112} + \cdots - 6.58097 \times 10^9 y - 1.18481 \times 10^9)$
c_6, c_9	$y^{113} + 61y^{112} + \cdots + 19y - 1$
c_8	$289(289y^{113} + 6473y^{112} + \cdots - 3.80828 \times 10^8 y - 6446521)$
c_{10}, c_{12}	$y^{113} - 69y^{112} + \cdots + 10227136y - 83521$
c_{11}	$y^{113} + 18y^{112} + \cdots + 117380240y - 5345344$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.961684 + 0.261047I$ $a = 1.36712 - 0.54658I$ $b = 1.082080 + 0.570638I$	$-0.69818 + 1.82820I$	0
$u = 0.961684 - 0.261047I$ $a = 1.36712 + 0.54658I$ $b = 1.082080 - 0.570638I$	$-0.69818 - 1.82820I$	0
$u = 0.472379 + 0.866415I$ $a = 0.234670 + 0.271151I$ $b = -0.758562 - 0.306959I$	$-2.38708 + 0.06669I$	0
$u = 0.472379 - 0.866415I$ $a = 0.234670 - 0.271151I$ $b = -0.758562 + 0.306959I$	$-2.38708 - 0.06669I$	0
$u = 0.834559 + 0.522813I$ $a = 1.038410 + 0.755660I$ $b = -0.255306 + 1.036950I$	$-5.58135 + 3.04071I$	0
$u = 0.834559 - 0.522813I$ $a = 1.038410 - 0.755660I$ $b = -0.255306 - 1.036950I$	$-5.58135 - 3.04071I$	0
$u = 0.260449 + 0.934723I$ $a = 0.887866 + 0.693301I$ $b = -1.235440 + 0.431488I$	$3.36185 - 8.25297I$	0
$u = 0.260449 - 0.934723I$ $a = 0.887866 - 0.693301I$ $b = -1.235440 - 0.431488I$	$3.36185 + 8.25297I$	0
$u = 0.278186 + 0.916362I$ $a = 0.988889 + 0.883115I$ $b = -1.33223 + 0.63057I$	$-0.2735 - 14.1974I$	0
$u = 0.278186 - 0.916362I$ $a = 0.988889 - 0.883115I$ $b = -1.33223 - 0.63057I$	$-0.2735 + 14.1974I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.975251 + 0.427221I$ $a = 0.554224 - 0.085844I$ $b = -0.398985 - 0.526440I$	$-4.97488 - 1.61721I$	0
$u = 0.975251 - 0.427221I$ $a = 0.554224 + 0.085844I$ $b = -0.398985 + 0.526440I$	$-4.97488 + 1.61721I$	0
$u = 0.834818 + 0.710924I$ $a = 0.328257 + 0.684453I$ $b = -0.958208 + 0.448873I$	$-3.48666 - 5.58470I$	0
$u = 0.834818 - 0.710924I$ $a = 0.328257 - 0.684453I$ $b = -0.958208 - 0.448873I$	$-3.48666 + 5.58470I$	0
$u = 0.155170 + 0.882082I$ $a = 1.112470 + 0.225885I$ $b = -0.795879 + 0.295304I$	$-2.30731 - 2.91239I$	0
$u = 0.155170 - 0.882082I$ $a = 1.112470 - 0.225885I$ $b = -0.795879 - 0.295304I$	$-2.30731 + 2.91239I$	0
$u = 1.107870 + 0.183683I$ $a = 0.85034 - 1.86373I$ $b = 1.342020 - 0.009858I$	$0.221092 - 0.868785I$	0
$u = 1.107870 - 0.183683I$ $a = 0.85034 + 1.86373I$ $b = 1.342020 + 0.009858I$	$0.221092 + 0.868785I$	0
$u = 0.870052$ $a = 0.953545$ $b = 0.0935621$	-1.22815	0
$u = 0.308782 + 0.806948I$ $a = -0.244705 - 0.059763I$ $b = -0.182636 - 1.236170I$	$-3.93453 - 7.72346I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.308782 - 0.806948I$ $a = -0.244705 + 0.059763I$ $b = -0.182636 + 1.236170I$	$-3.93453 + 7.72346I$	0
$u = -1.15010$ $a = -0.276768$ $b = -1.44831$	4.44175	0
$u = -1.162700 + 0.028367I$ $a = -0.237024 + 0.254459I$ $b = -1.41287 + 0.30905I$	$0.26523 - 6.30460I$	0
$u = -1.162700 - 0.028367I$ $a = -0.237024 - 0.254459I$ $b = -1.41287 - 0.30905I$	$0.26523 + 6.30460I$	0
$u = 0.651270 + 0.520129I$ $a = 0.787605 + 0.344424I$ $b = -0.165317 + 0.384025I$	$-1.61934 - 0.33597I$	0
$u = 0.651270 - 0.520129I$ $a = 0.787605 - 0.344424I$ $b = -0.165317 - 0.384025I$	$-1.61934 + 0.33597I$	0
$u = 0.992579 + 0.617588I$ $a = -0.203051 + 0.044813I$ $b = -1.252640 - 0.592702I$	$-2.42982 + 8.85973I$	0
$u = 0.992579 - 0.617588I$ $a = -0.203051 - 0.044813I$ $b = -1.252640 + 0.592702I$	$-2.42982 - 8.85973I$	0
$u = 1.166290 + 0.156325I$ $a = 0.64576 - 2.49355I$ $b = 1.200250 - 0.227169I$	$0.082157 - 0.857061I$	0
$u = 1.166290 - 0.156325I$ $a = 0.64576 + 2.49355I$ $b = 1.200250 + 0.227169I$	$0.082157 + 0.857061I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.328848 + 0.750599I$ $a = -0.003576 - 0.299898I$ $b = 0.068339 - 0.729790I$	$-0.43516 - 3.99400I$	0
$u = 0.328848 - 0.750599I$ $a = -0.003576 + 0.299898I$ $b = 0.068339 + 0.729790I$	$-0.43516 + 3.99400I$	0
$u = -0.916804 + 0.750551I$ $a = 0.101204 - 0.392853I$ $b = -0.989163 + 0.036267I$	$4.65181 + 2.75031I$	0
$u = -0.916804 - 0.750551I$ $a = 0.101204 + 0.392853I$ $b = -0.989163 - 0.036267I$	$4.65181 - 2.75031I$	0
$u = -0.335291 + 0.714376I$ $a = 0.566059 - 0.992552I$ $b = -1.185720 - 0.216566I$	$5.67260 + 2.25032I$	0
$u = -0.335291 - 0.714376I$ $a = 0.566059 + 0.992552I$ $b = -1.185720 + 0.216566I$	$5.67260 - 2.25032I$	0
$u = 1.044170 + 0.624951I$ $a = -0.042033 + 0.198039I$ $b = -1.113430 - 0.361379I$	$1.01629 + 2.81685I$	0
$u = 1.044170 - 0.624951I$ $a = -0.042033 - 0.198039I$ $b = -1.113430 + 0.361379I$	$1.01629 - 2.81685I$	0
$u = 0.217309 + 0.720989I$ $a = -0.835422 - 0.443997I$ $b = 1.18367 - 0.86495I$	$1.51696 - 5.57365I$	0
$u = 0.217309 - 0.720989I$ $a = -0.835422 + 0.443997I$ $b = 1.18367 + 0.86495I$	$1.51696 + 5.57365I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.241820 + 0.192762I$ $a = 0.69993 - 2.78023I$ $b = 1.072940 - 0.785305I$	$-1.33451 - 3.90121I$	0
$u = 1.241820 - 0.192762I$ $a = 0.69993 + 2.78023I$ $b = 1.072940 + 0.785305I$	$-1.33451 + 3.90121I$	0
$u = 1.258900 + 0.067696I$ $a = 4.10773 - 3.17053I$ $b = 0.870105 + 0.079219I$	$-2.76031 + 0.24285I$	0
$u = 1.258900 - 0.067696I$ $a = 4.10773 + 3.17053I$ $b = 0.870105 - 0.079219I$	$-2.76031 - 0.24285I$	0
$u = -0.473545 + 0.525712I$ $a = -0.322671 - 0.676621I$ $b = -1.149030 + 0.324827I$	$1.40611 - 4.98571I$	0
$u = -0.473545 - 0.525712I$ $a = -0.322671 + 0.676621I$ $b = -1.149030 - 0.324827I$	$1.40611 + 4.98571I$	0
$u = -0.297951 + 0.640070I$ $a = 0.83981 - 1.43008I$ $b = -1.294630 - 0.500564I$	$2.05403 + 8.53878I$	$0. - 6.10703I$
$u = -0.297951 - 0.640070I$ $a = 0.83981 + 1.43008I$ $b = -1.294630 + 0.500564I$	$2.05403 - 8.53878I$	$0. + 6.10703I$
$u = 0.319533 + 0.609259I$ $a = 1.74585 - 5.66304I$ $b = 0.942388 + 0.016764I$	$-0.45862 - 1.47435I$	$28.3803 + 13.0429I$
$u = 0.319533 - 0.609259I$ $a = 1.74585 + 5.66304I$ $b = 0.942388 - 0.016764I$	$-0.45862 + 1.47435I$	$28.3803 - 13.0429I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.191537 + 0.658715I$ $a = -1.59049 - 0.38846I$ $b = 1.361490 - 0.310048I$	$2.81518 - 2.25501I$	$7.02368 + 2.41006I$
$u = 0.191537 - 0.658715I$ $a = -1.59049 + 0.38846I$ $b = 1.361490 + 0.310048I$	$2.81518 + 2.25501I$	$7.02368 - 2.41006I$
$u = 1.310790 + 0.282909I$ $a = 0.693374 + 1.205230I$ $b = -0.623900 + 0.414671I$	$-5.62759 - 0.96807I$	0
$u = 1.310790 - 0.282909I$ $a = 0.693374 - 1.205230I$ $b = -0.623900 - 0.414671I$	$-5.62759 + 0.96807I$	0
$u = 1.335570 + 0.125327I$ $a = -0.050034 - 1.326770I$ $b = -0.050118 - 0.612569I$	$-3.04736 - 1.94290I$	0
$u = 1.335570 - 0.125327I$ $a = -0.050034 + 1.326770I$ $b = -0.050118 + 0.612569I$	$-3.04736 + 1.94290I$	0
$u = -1.351420 + 0.124666I$ $a = 0.87760 - 1.20725I$ $b = 0.502291 - 1.207680I$	$-6.01723 - 1.75193I$	0
$u = -1.351420 - 0.124666I$ $a = 0.87760 + 1.20725I$ $b = 0.502291 + 1.207680I$	$-6.01723 + 1.75193I$	0
$u = -1.344680 + 0.210066I$ $a = 0.836484 - 0.154388I$ $b = 1.58899 - 0.57576I$	$-2.25009 + 1.62166I$	0
$u = -1.344680 - 0.210066I$ $a = 0.836484 + 0.154388I$ $b = 1.58899 + 0.57576I$	$-2.25009 - 1.62166I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.144484 + 0.621433I$ $a = -1.82353 + 0.32570I$ $b = 1.49332 + 0.05330I$	$3.01974 - 2.02401I$	$7.44184 + 5.54583I$
$u = 0.144484 - 0.621433I$ $a = -1.82353 - 0.32570I$ $b = 1.49332 - 0.05330I$	$3.01974 + 2.02401I$	$7.44184 - 5.54583I$
$u = 1.358000 + 0.177874I$ $a = -0.87914 - 1.83698I$ $b = -0.241407 - 1.159440I$	$-6.75012 - 5.58489I$	0
$u = 1.358000 - 0.177874I$ $a = -0.87914 + 1.83698I$ $b = -0.241407 + 1.159440I$	$-6.75012 + 5.58489I$	0
$u = 0.515055 + 0.354300I$ $a = 1.63764 + 0.84883I$ $b = 0.779173 - 0.264986I$	$-1.24671 - 2.00627I$	$-2.16610 + 1.88869I$
$u = 0.515055 - 0.354300I$ $a = 1.63764 - 0.84883I$ $b = 0.779173 + 0.264986I$	$-1.24671 + 2.00627I$	$-2.16610 - 1.88869I$
$u = -1.366790 + 0.165022I$ $a = 0.793493 - 1.017980I$ $b = 0.834662 - 0.775592I$	$-3.59891 + 1.83803I$	0
$u = -1.366790 - 0.165022I$ $a = 0.793493 + 1.017980I$ $b = 0.834662 + 0.775592I$	$-3.59891 - 1.83803I$	0
$u = -1.358380 + 0.239658I$ $a = 0.446987 + 0.792365I$ $b = 1.69053 + 0.00244I$	$-1.75667 + 5.14933I$	0
$u = -1.358380 - 0.239658I$ $a = 0.446987 - 0.792365I$ $b = 1.69053 - 0.00244I$	$-1.75667 - 5.14933I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.377970+0.261035I$ $a=\ 0.14224+1.62218I$ $b=\ 1.43979+0.49676I$	$-2.18494+5.60549I$	0
$u=-1.377970-0.261035I$ $a=\ 0.14224-1.62218I$ $b=\ 1.43979-0.49676I$	$-2.18494-5.60549I$	0
$u=-1.38768+0.28521I$ $a=\ 0.09829+2.00040I$ $b=\ 1.22309+1.04416I$	$-3.58758+9.21705I$	0
$u=-1.38768-0.28521I$ $a=\ 0.09829-2.00040I$ $b=\ 1.22309-1.04416I$	$-3.58758-9.21705I$	0
$u=-1.40882+0.17539I$ $a=\ 1.28217-1.09311I$ $b=\ 0.502638-0.150538I$	$-6.91302+4.04376I$	0
$u=-1.40882-0.17539I$ $a=\ 1.28217+1.09311I$ $b=\ 0.502638+0.150538I$	$-6.91302-4.04376I$	0
$u=\ 0.069032+0.563081I$ $a=-1.56321+0.92826I$ $b=\ 1.32629+0.60309I$	$2.27246+1.15394I$	$7.28806-2.01801I$
$u=\ 0.069032-0.563081I$ $a=-1.56321-0.92826I$ $b=\ 1.32629-0.60309I$	$2.27246-1.15394I$	$7.28806+2.01801I$
$u=-1.41303+0.23757I$ $a=-0.49956+4.32991I$ $b=\ 0.959384+0.078619I$	$-5.96934+4.58071I$	0
$u=-1.41303-0.23757I$ $a=-0.49956-4.32991I$ $b=\ 0.959384-0.078619I$	$-5.96934-4.58071I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.41519 + 0.25683I$ $a = -0.45467 + 2.07595I$ $b = -1.28914 + 0.62697I$	$-3.41637 - 11.84470I$	0
$u = 1.41519 - 0.25683I$ $a = -0.45467 - 2.07595I$ $b = -1.28914 - 0.62697I$	$-3.41637 + 11.84470I$	0
$u = 1.41838 + 0.28314I$ $a = -0.36970 + 1.57812I$ $b = -1.167110 + 0.421831I$	$0.12401 - 5.89051I$	0
$u = 1.41838 - 0.28314I$ $a = -0.36970 - 1.57812I$ $b = -1.167110 - 0.421831I$	$0.12401 + 5.89051I$	0
$u = -1.40383 + 0.38998I$ $a = 0.329832 - 1.165820I$ $b = -0.997247 - 0.398818I$	$-7.26453 + 7.54102I$	0
$u = -1.40383 - 0.38998I$ $a = 0.329832 + 1.165820I$ $b = -0.997247 + 0.398818I$	$-7.26453 - 7.54102I$	0
$u = 1.45983 + 0.13397I$ $a = -0.966889 - 0.302712I$ $b = -0.850000 - 0.413449I$	$-5.00665 + 2.66992I$	0
$u = 1.45983 - 0.13397I$ $a = -0.966889 + 0.302712I$ $b = -0.850000 + 0.413449I$	$-5.00665 - 2.66992I$	0
$u = -1.43775 + 0.29430I$ $a = -0.347366 + 1.225430I$ $b = 0.041871 + 0.948487I$	$-6.08574 + 7.79317I$	0
$u = -1.43775 - 0.29430I$ $a = -0.347366 - 1.225430I$ $b = 0.041871 - 0.948487I$	$-6.08574 - 7.79317I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.43710+0.31706I$ $a=-0.90012+1.32188I$ $b=-0.215361+1.377320I$	$-9.5150+11.7864I$	0
$u=-1.43710-0.31706I$ $a=-0.90012-1.32188I$ $b=-0.215361-1.377320I$	$-9.5150-11.7864I$	0
$u=-1.44024+0.38407I$ $a=-0.02505-1.60974I$ $b=-1.299480-0.508238I$	$-2.05065+12.98760I$	0
$u=-1.44024-0.38407I$ $a=-0.02505+1.60974I$ $b=-1.299480+0.508238I$	$-2.05065-12.98760I$	0
$u=-1.44514+0.37393I$ $a=\quad 0.01924-1.92503I$ $b=-1.37567-0.67966I$	$-5.7644+18.8401I$	0
$u=-1.44514-0.37393I$ $a=\quad 0.01924+1.92503I$ $b=-1.37567+0.67966I$	$-5.7644-18.8401I$	0
$u=-1.50495+0.04038I$ $a=-0.05721-1.58096I$ $b=-0.621244-1.028070I$	$-13.43700-1.72652I$	0
$u=-1.50495-0.04038I$ $a=-0.05721+1.58096I$ $b=-0.621244+1.028070I$	$-13.43700+1.72652I$	0
$u=-1.48763+0.28205I$ $a=-0.310225+0.302985I$ $b=-0.469343+0.449057I$	$-8.77346+3.93861I$	0
$u=-1.48763-0.28205I$ $a=-0.310225-0.302985I$ $b=-0.469343-0.449057I$	$-8.77346-3.93861I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.52846+0.08843I$ $a=-0.200446-1.066770I$ $b=-0.674054-0.660141I$	$-8.98195+2.48583I$	0
$u=-1.52846-0.08843I$ $a=-0.200446+1.066770I$ $b=-0.674054+0.660141I$	$-8.98195-2.48583I$	0
$u=-0.137852+0.423543I$ $a=-1.009920+0.386748I$ $b=\ 0.020374+0.995208I$	$-1.96447+3.28364I$	$2.37619-3.75916I$
$u=-0.137852-0.423543I$ $a=-1.009920-0.386748I$ $b=\ 0.020374-0.995208I$	$-1.96447-3.28364I$	$2.37619+3.75916I$
$u=\ 0.030826+0.442889I$ $a=\ 1.84670+0.42488I$ $b=\ 0.040269-0.374904I$	$-1.71164-2.03068I$	$0.92011+3.46679I$
$u=\ 0.030826-0.442889I$ $a=\ 1.84670-0.42488I$ $b=\ 0.040269+0.374904I$	$-1.71164+2.03068I$	$0.92011-3.46679I$
$u=-1.56813+0.05575I$ $a=-0.722442-1.139070I$ $b=-1.039110-0.697192I$	$-12.0123+7.8686I$	0
$u=-1.56813-0.05575I$ $a=-0.722442+1.139070I$ $b=-1.039110+0.697192I$	$-12.0123-7.8686I$	0
$u=\ 0.040683+0.360824I$ $a=-0.575408+1.142610I$ $b=\ 0.479990+0.395254I$	$1.156200+0.168786I$	$8.35325-0.17221I$
$u=\ 0.040683-0.360824I$ $a=-0.575408-1.142610I$ $b=\ 0.479990-0.395254I$	$1.156200-0.168786I$	$8.35325+0.17221I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.199873$ $a = -2.63962$ $b = 0.777741$	1.05923	11.4410
$u = -0.0730236 + 0.0762121I$ $a = 9.91388 + 6.35989I$ $b = 1.135790 - 0.225281I$	$0.958085 - 1.026070I$	$4.35276 - 0.71517I$
$u = -0.0730236 - 0.0762121I$ $a = 9.91388 - 6.35989I$ $b = 1.135790 + 0.225281I$	$0.958085 + 1.026070I$	$4.35276 + 0.71517I$

II. $\boldsymbol{I_2^u = \langle b - a + 1,\ a^8 - 7a^7 + 18a^6 - 19a^5 + 3a^4 + 7a^3 - 3a - 1,\ u - 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} a \\ a - 1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} a^2 - a - 1 \\ a^2 - 2a + 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ a - 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -a^5 + 4a^4 - 4a^3 - a^2 + 2a + 1 \\ -a^5 + 5a^4 - 9a^3 + 7a^2 - a - 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ -a^7 + 8a^6 - 25a^5 + 37a^4 - 23a^3 + 3a + 2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} a \\ a^2 - 2a + 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ -a^7 + 8a^6 - 25a^5 + 37a^4 - 23a^3 + 3a + 2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= a^7 + 2a^6 - 32a^5 + 73a^4 - 44a^3 - 25a^2 + 18a + 21$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^8$
c_3, c_7	y^8
c_5, c_{10}, c_{12}	$y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1$
c_6, c_9	$y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1$
c_8, c_{11}	$y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$ 1.00000 $a=$ $1.108090+0.747508I$ $b=$ $0.108090+0.747508I$	$-3.80435+2.57849I$	$-1.56478-3.68514I$
$u=$ 1.00000 $a=$ $1.108090-0.747508I$ $b=$ $0.108090-0.747508I$	$-3.80435-2.57849I$	$-1.56478+3.68514I$
$u=$ 1.00000 $a=$ 1.46364 $b=$ 0.463640	-0.799899	9.95010
$u=$ 1.00000 $a=-0.334527+0.318930I$ $b=-1.334530+0.318930I$	$0.73474-6.44354I$	$8.02705+7.90662I$
$u=$ 1.00000 $a=-0.334527-0.318930I$ $b=-1.334530-0.318930I$	$0.73474+6.44354I$	$8.02705-7.90662I$
$u=$ 1.00000 $a=-0.371002$ $b=-1.37100$	4.85780	14.7400
$u=$ 1.00000 $a=$ $2.18012+0.26860I$ $b=$ $1.180120+0.268597I$	$-0.604279+1.131230I$	$-3.30729+4.28492I$
$u=$ 1.00000 $a=$ $2.18012-0.26860I$ $b=$ $1.180120-0.268597I$	$-0.604279-1.131230I$	$-3.30729-4.28492I$

III. $I_3^u = \langle b-1,\ 12u^2+17a+11u+9,\ u^3+u^2-1\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ u^2+u-1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -\frac{12}{17}u^2 - \frac{11}{17}u - \frac{9}{17} \\ 1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} \frac{1}{289}u^2 - \frac{366}{289}u - \frac{63}{289} \\ \frac{20}{17}u^2 + \frac{24}{17}u - \frac{19}{17} \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -\frac{12}{17}u^2 - \frac{11}{17}u - \frac{26}{17} \\ 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.484429u^2 - 1.69896u - 0.480969 \\ \frac{39}{17}u^2 + \frac{23}{17}u - \frac{26}{17} \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -2u+1 \\ 5u^2+2u-4 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -\frac{12}{17}u^2 - \frac{11}{17}u - \frac{9}{17} \\ 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ 2u^2+u-2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^2+1 \\ u^2-u+1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{8258}{289}u^2 - \frac{4979}{289}u - \frac{3522}{289}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$u^3 + u^2 - 1$
c_3	$u^3 - u^2 + 2u - 1$
c_4	$u^3 - u^2 + 1$
c_5	$17(17u^3 - 10u^2 - u + 1)$
c_6	$u^3 + 3u^2 + 2u - 1$
c_7	$u^3 + u^2 + 2u + 1$
c_8	$17(17u^3 + 23u^2 + 8u + 1)$
c_9	$u^3 - 3u^2 + 2u + 1$
c_{10}	$(u+1)^3$
c_{11}	u^3
c_{12}	$(u-1)^3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$y^3 - y^2 + 2y - 1$
c_3, c_7	$y^3 + 3y^2 + 2y - 1$
c_5	$289(289y^3 - 134y^2 + 21y - 1)$
c_6, c_9	$y^3 - 5y^2 + 10y - 1$
c_8	$289(289y^3 - 257y^2 + 18y - 1)$
c_{10}, c_{12}	$(y-1)^3$
c_{11}	y^3

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.877439 + 0.744862I$ $a = -0.113478 + 0.440719I$ $b = \quad 1.00000$	$4.66906 + 2.82812I$	$9.0758 - 50.1835I$
$u = -0.877439 - 0.744862I$ $a = -0.113478 - 0.440719I$ $b = \quad 1.00000$	$4.66906 - 2.82812I$	$9.0758 + 50.1835I$
$u = \quad 0.754878$ $a = -1.42010$ $b = \quad 1.00000$	0.531480	-8.90930

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_2	$((u-1)^8)(u^3+u^2-1)(u^{113}-10u^{112}+\cdots+u-1)$
c_3	$u^8(u^3-u^2+2u-1)(u^{113}-2u^{112}+\cdots+896u-256)$
c_4	$((u+1)^8)(u^3-u^2+1)(u^{113}-10u^{112}+\cdots+u-1)$
c_5	$289(17u^3-10u^2-u+1)(u^8-u^7-3u^6+2u^5+3u^4-2u-1)$ $\cdot\,(17u^{113}+212u^{112}+\cdots-115224u-34421)$
c_6	$(u^3+3u^2+2u-1)(u^8+3u^7+\cdots+4u+1)$ $\cdot\,(u^{113}+3u^{112}+\cdots+3u+1)$
c_7	$u^8(u^3+u^2+2u+1)(u^{113}-2u^{112}+\cdots+896u-256)$
c_8	$289(17u^3+23u^2+8u+1)(u^8+u^7-u^6-2u^5+u^4+2u^3-2u-1)$ $\cdot\,(17u^{113}+219u^{112}+\cdots+16199u+2539)$
c_9	$(u^3-3u^2+2u+1)(u^8-3u^7+\cdots-4u+1)$ $\cdot\,(u^{113}+3u^{112}+\cdots+3u+1)$
c_{10}	$(u+1)^3(u^8-u^7-3u^6+2u^5+3u^4-2u-1)$ $\cdot\,(u^{113}+5u^{112}+\cdots-1158u+289)$
c_{11}	$u^3(u^8-u^7-u^6+2u^5+u^4-2u^3+2u-1)$ $\cdot\,(u^{113}+2u^{112}+\cdots-41820u-2312)$
c_{12}	$(u-1)^3(u^8+u^7-3u^6-2u^5+3u^4+2u-1)$ $\cdot\,(u^{113}+5u^{112}+\cdots-1158u+289)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$((y-1)^8)(y^3-y^2+2y-1)(y^{113}-100y^{112}+\cdots-13y-1)$
c_3, c_7	$y^8(y^3+3y^2+2y-1)(y^{113}-48y^{112}+\cdots+1425408y-65536)$
c_5	$83521(289y^3-134y^2+21y-1)$ $\cdot(y^8-7y^7+19y^6-22y^5+3y^4+14y^3-6y^2-4y+1)$ $\cdot(289y^{113}-1016y^{112}+\cdots-6580973566y-1184805241)$
c_6, c_9	$(y^3-5y^2+10y-1)$ $\cdot(y^8+5y^7+11y^6+6y^5-17y^4-34y^3-22y^2-4y+1)$ $\cdot(y^{113}+61y^{112}+\cdots+19y-1)$
c_8	$83521(289y^3-257y^2+18y-1)$ $\cdot(y^8-3y^7+7y^6-10y^5+11y^4-10y^3+6y^2-4y+1)$ $\cdot(289y^{113}+6473y^{112}+\cdots-380827737y-6446521)$
c_{10}, c_{12}	$(y-1)^3(y^8-7y^7+19y^6-22y^5+3y^4+14y^3-6y^2-4y+1)$ $\cdot(y^{113}-69y^{112}+\cdots+10227136y-83521)$
c_{11}	$y^3(y^8-3y^7+7y^6-10y^5+11y^4-10y^3+6y^2-4y+1)$ $\cdot(y^{113}+18y^{112}+\cdots+117380240y-5345344)$