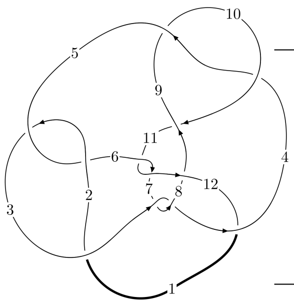
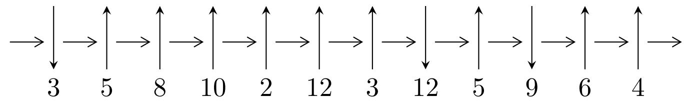
$12n_{0436}$ $(K12n_{0436})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -37827406u^{18} + 29757877u^{17} + \cdots + 120133473b + 294183386,\ a-1,\ u^{19} + 6u^{17} + \cdots + 2u + 1\rangle$$
$$I_2^u = \langle -u^4 - u^3 - 2u^2 + b - 2u + 2,\ a+1,\ u^5 + u^4 + 2u^3 + 3u^2 + u + 1\rangle$$
$$I_3^u = \langle b-1,\ 19u^{11} - 5u^{10} + 80u^9 - 30u^8 + 158u^7 - 42u^6 + 229u^5 - 4u^4 + 188u^3 + 17u^2 + 5a + 39u + 21,$$
$$u^{12} - u^{11} + 5u^{10} - 5u^9 + 12u^8 - 10u^7 + 19u^6 - 12u^5 + 18u^4 - 9u^3 + 8u^2 - 2u + 1\rangle$$
$$I_4^u = \langle b+1,\ 858366437u^{13} + 13303924407u^{12} + \cdots + 198592491933a - 215876970671,$$
$$u^{14} - 5u^{12} + u^{11} + 20u^{10} - 3u^9 - 41u^8 + 3u^7 + 27u^6 + 15u^5 + 23u^4 - 53u^3 - 33u^2 + 71u - 27\rangle$$
$$I_5^u = \langle b-1,\ a+u,\ u^2 + u + 1\rangle$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 52 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. $I_1^u = \langle -3.78\times 10^{7}u^{18} + 2.98\times 10^{7}u^{17} + \cdots + 1.20\times 10^{8}b + 2.94\times 10^{8},\ a - 1,\ u^{19} + 6u^{17} + \cdots + 2u + 1\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 0.314878u^{18} - 0.247707u^{17} + \cdots - 3.86583u - 2.44880 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u \\ 0.247707u^{18} - 0.105766u^{17} + \cdots + 4.07856u + 0.314878 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0.314878u^{18} - 0.247707u^{17} + \cdots - 3.86583u - 2.44880 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^2 + 1 \\ 0.420645u^{18} - 0.371361u^{17} + \cdots - 3.68529u - 2.20110 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.00612192u^{18} + 0.0147829u^{17} + \cdots + 0.322078u + 1.37136 \\ 0.297103u^{18} - 0.361177u^{17} + \cdots - 3.38666u - 1.84452 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.648921u^{18} + 0.257817u^{17} + \cdots + 6.78287u + 0.742285 \\ -0.744255u^{18} + 0.115009u^{17} + \cdots - 1.84764u + 0.485311 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.0953339u^{18} - 0.372826u^{17} + \cdots - 4.93523u - 1.22760 \\ 0.744255u^{18} - 0.115009u^{17} + \cdots + 1.84764u - 0.485311 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{42941320}{40044491}u^{18} + \frac{84579765}{40044491}u^{17} + \cdots + \frac{1067191176}{40044491}u + \frac{715529589}{40044491}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{10}	$u^{19} + 12u^{18} + \cdots - 12u - 1$
c_2, c_4, c_5 c_9	$u^{19} + 6u^{17} + \cdots + 2u - 1$
c_3, c_7	$u^{19} + 5u^{18} + \cdots - 5u - 3$
c_6, c_{11}, c_{12}	$u^{19} + u^{18} + \cdots + u - 3$
c_8	$u^{19} - u^{18} + \cdots - 2u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$y^{19} + 32y^{18} + \cdots + 116y - 1$
c_2, c_4, c_5 c_9	$y^{19} + 12y^{18} + \cdots - 12y - 1$
c_3, c_7	$y^{19} - 3y^{18} + \cdots + 103y - 9$
c_6, c_{11}, c_{12}	$y^{19} - 17y^{18} + \cdots + 73y - 9$
c_8	$y^{19} + 11y^{18} + \cdots + 44y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.581330 + 0.811360I$ $a = 1.00000$ $b = 1.79148 + 0.06667I$	$1.93762 + 6.06371I$	$8.03507 - 11.60220I$
$u = 0.581330 - 0.811360I$ $a = 1.00000$ $b = 1.79148 - 0.06667I$	$1.93762 - 6.06371I$	$8.03507 + 11.60220I$
$u = -0.052078 + 1.011790I$ $a = 1.00000$ $b = -0.842437 + 0.221761I$	$-5.84256 - 3.61662I$	$-2.20671 + 4.58081I$
$u = -0.052078 - 1.011790I$ $a = 1.00000$ $b = -0.842437 - 0.221761I$	$-5.84256 + 3.61662I$	$-2.20671 - 4.58081I$
$u = -0.565597 + 0.850482I$ $a = 1.00000$ $b = 1.102220 - 0.467413I$	$1.71886 - 3.11685I$	$6.74582 + 2.04810I$
$u = -0.565597 - 0.850482I$ $a = 1.00000$ $b = 1.102220 + 0.467413I$	$1.71886 + 3.11685I$	$6.74582 - 2.04810I$
$u = -0.435881 + 0.933169I$ $a = 1.00000$ $b = 0.557982 + 0.070489I$	$1.42719 - 4.85166I$	$4.33736 + 8.70146I$
$u = -0.435881 - 0.933169I$ $a = 1.00000$ $b = 0.557982 - 0.070489I$	$1.42719 + 4.85166I$	$4.33736 - 8.70146I$
$u = 0.372674 + 0.734435I$ $a = 1.00000$ $b = 0.950589 - 1.042440I$	$2.83649 + 2.15459I$	$8.45889 - 1.98320I$
$u = 0.372674 - 0.734435I$ $a = 1.00000$ $b = 0.950589 + 1.042440I$	$2.83649 - 2.15459I$	$8.45889 + 1.98320I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.23610 + 1.41105I$ $a = 1.00000$ $b = 3.07117 + 0.59581I$	$-8.40212 + 4.72676I$	$11.67641 + 3.78763I$
$u = 0.23610 - 1.41105I$ $a = 1.00000$ $b = 3.07117 - 0.59581I$	$-8.40212 - 4.72676I$	$11.67641 - 3.78763I$
$u = 0.010555 + 0.413321I$ $a = 1.00000$ $b = -1.95315 - 0.78032I$	$-2.02437 - 2.68122I$	$11.08292 + 6.93097I$
$u = 0.010555 - 0.413321I$ $a = 1.00000$ $b = -1.95315 + 0.78032I$	$-2.02437 + 2.68122I$	$11.08292 - 6.93097I$
$u = -0.374990$ $a = 1.00000$ $b = 0.313865$	0.679468	14.8670
$u = 1.15639 + 1.32365I$ $a = 1.00000$ $b = 2.04850 + 0.73446I$	$12.4777 + 13.4078I$	$7.73596 - 5.99135I$
$u = 1.15639 - 1.32365I$ $a = 1.00000$ $b = 2.04850 - 0.73446I$	$12.4777 - 13.4078I$	$7.73596 + 5.99135I$
$u = -1.11599 + 1.40313I$ $a = 1.00000$ $b = 2.11672 - 0.67442I$	$11.98080 - 5.53483I$	$7.70079 + 2.32699I$
$u = -1.11599 - 1.40313I$ $a = 1.00000$ $b = 2.11672 + 0.67442I$	$11.98080 + 5.53483I$	$7.70079 - 2.32699I$

II. $\boldsymbol{I_2^u = \langle -u^4 - u^3 - 2u^2 + b - 2u + 2,\ a + 1,\ u^5 + u^4 + 2u^3 + 3u^2 + u + 1 \rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

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

$$a_{10} = \begin{pmatrix} -1 \\ u^4 + u^3 + 2u^2 + 2u - 2 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} -1 \\ u^4 + u^3 + u^2 + 2u - 2 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} 0 \\ u^4 + u^2 + u - 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u \\ -u - 1 \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 5u^4 + 6u^3 + 10u^2 + 5u - 2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$y^5 - 9y^4 + 32y^3 - 43y^2 + 11y - 1$
c_2, c_4, c_5 c_9	$y^5 + 3y^4 - 7y^2 - 5y - 1$
c_3, c_7	$y^5 + 12y^3 - 9y^2 + 18y - 1$
c_6, c_{11}, c_{12}	$y^5 - 2y^4 - 7y^3 - 8y^2 - 4y - 1$
c_8	$y^5 - 6y^4 + 15y^3 - 19y^2 + 7y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.23887$ $a=-1.00000$ $b=-0.953942$	5.64999	7.52320
$u=-0.082938+0.638199I$ $a=-1.00000$ $b=-2.71682+0.90269I$	$-2.41512+2.46056I$	$-5.06862+1.07566I$
$u=-0.082938-0.638199I$ $a=-1.00000$ $b=-2.71682-0.90269I$	$-2.41512-2.46056I$	$-5.06862-1.07566I$
$u=\ \ 0.202374+1.381280I$ $a=-1.00000$ $b=-3.30621-0.67253I$	$-8.63454+4.90423I$	$-10.6930-12.7347I$
$u=\ \ 0.202374-1.381280I$ $a=-1.00000$ $b=-3.30621+0.67253I$	$-8.63454-4.90423I$	$-10.6930+12.7347I$

III. $I^u_3 = \langle b-1,\ 19u^{11}-5u^{10}+\cdots+5a+21,\ u^{12}-u^{11}+\cdots-2u+1\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_5 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_6 = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$
$$a_1 = \begin{pmatrix}u^2+1\\u^2\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-\frac{19}{5}u^{11}+u^{10}+\cdots-\frac{39}{5}u-\frac{21}{5}\\1\end{pmatrix}$$
$$a_4 = \begin{pmatrix}\frac{2}{5}u^{11}+2u^{10}+\cdots-\frac{53}{5}u+\frac{33}{5}\\\frac{14}{5}u^{11}-3u^{10}+\cdots+\frac{64}{5}u-\frac{19}{5}\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-\frac{19}{5}u^{11}+u^{10}+\cdots-\frac{39}{5}u-\frac{21}{5}\\\frac{1}{5}u^{11}+u^{10}+\cdots-\frac{9}{5}u+\frac{19}{5}\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-\frac{3}{5}u^{11}-2u^9+\cdots+\frac{7}{5}u+\frac{8}{5}\\-\frac{11}{5}u^{11}+2u^{10}+\cdots-\frac{31}{5}u-\frac{4}{5}\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-\frac{3}{5}u^{11}-2u^9+\cdots+\frac{7}{5}u+\frac{13}{5}\\-\frac{11}{5}u^{11}+2u^{10}+\cdots-\frac{31}{5}u+\frac{1}{5}\end{pmatrix}$$
$$a_7 = \begin{pmatrix}\frac{16}{5}u^{11}-3u^{10}+\cdots+\frac{81}{5}u-\frac{36}{5}\\\frac{2}{5}u^{11}+u^{10}+\cdots-\frac{18}{5}u+\frac{18}{5}\end{pmatrix}$$
$$a_8 = \begin{pmatrix}\frac{18}{5}u^{11}-2u^{10}+\cdots+\frac{63}{5}u-\frac{18}{5}\\\frac{2}{5}u^{11}+u^{10}+\cdots-\frac{18}{5}u+\frac{18}{5}\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= \frac{28}{5}u^{11}-10u^{10}+27u^9-46u^8+\frac{331}{5}u^7-\frac{439}{5}u^6+\frac{513}{5}u^5-\frac{573}{5}u^4+\frac{416}{5}u^3-\frac{466}{5}u^2+\frac{153}{5}u-\frac{43}{5}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{12} - 9u^{11} + \cdots - 12u + 1$
c_2, c_4	$u^{12} - u^{11} + \cdots - 2u + 1$
c_3	$(u^6 - u^5 + u^4 + u^3 + u + 1)^2$
c_5, c_9	$u^{12} + u^{11} + \cdots + 2u + 1$
c_6, c_{12}	$u^{12} - 3u^{11} + 3u^{10} + u^9 - 7u^8 + 7u^7 + 2u^6 - 7u^5 + 6u^4 - 4u^3 + 4u^2 + 1$
c_7	$(u^6 + u^5 + u^4 - u^3 - u + 1)^2$
c_8	$u^{12} - 4u^{11} + \cdots - 4u + 1$
c_{10}	$u^{12} + 9u^{11} + \cdots + 12u + 1$
c_{11}	$u^{12} + 3u^{11} + 3u^{10} - u^9 - 7u^8 - 7u^7 + 2u^6 + 7u^5 + 6u^4 + 4u^3 + 4u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$y^{12} - 3y^{11} + \cdots - 16y + 1$
c_2, c_4, c_5 c_9	$y^{12} + 9y^{11} + \cdots + 12y + 1$
c_3, c_7	$(y^6 + y^5 + 3y^4 + 3y^3 - y + 1)^2$
c_6, c_{11}, c_{12}	$y^{12} - 3y^{11} + \cdots + 8y + 1$
c_8	$y^{12} + 2y^{11} + \cdots + 2y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.692350 + 0.998374I$ $a = 0.563487 - 0.097097I$ $b = 1.00000$	$2.58561 - 4.66235I$	$13.2371 + 6.7464I$
$u = -0.692350 - 0.998374I$ $a = 0.563487 + 0.097097I$ $b = 1.00000$	$2.58561 + 4.66235I$	$13.2371 - 6.7464I$
$u = -0.132362 + 1.261240I$ $a = -0.394942 + 0.127357I$ $b = 1.00000$	$-4.97366 - 3.43143I$	$8.85710 + 2.47386I$
$u = -0.132362 - 1.261240I$ $a = -0.394942 - 0.127357I$ $b = 1.00000$	$-4.97366 + 3.43143I$	$8.85710 - 2.47386I$
$u = 0.925178 + 0.902848I$ $a = 0.743097 + 0.759251I$ $b = 1.00000$	$-0.90182 + 3.38184I$	$5.40576 - 3.42906I$
$u = 0.925178 - 0.902848I$ $a = 0.743097 - 0.759251I$ $b = 1.00000$	$-0.90182 - 3.38184I$	$5.40576 + 3.42906I$
$u = 0.293191 + 0.629796I$ $a = 1.72349 - 0.29698I$ $b = 1.00000$	$2.58561 + 4.66235I$	$13.2371 - 6.7464I$
$u = 0.293191 - 0.629796I$ $a = 1.72349 + 0.29698I$ $b = 1.00000$	$2.58561 - 4.66235I$	$13.2371 + 6.7464I$
$u = -0.002009 + 1.373350I$ $a = 0.658392 + 0.672704I$ $b = 1.00000$	$-0.90182 - 3.38184I$	$5.40576 + 3.42906I$
$u = -0.002009 - 1.373350I$ $a = 0.658392 - 0.672704I$ $b = 1.00000$	$-0.90182 + 3.38184I$	$5.40576 - 3.42906I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.108352 + 0.514973I$ $a = -2.29352 - 0.73959I$ $b = 1.00000$	$-4.97366 - 3.43143I$	$8.85710 + 2.47386I$
$u = 0.108352 - 0.514973I$ $a = -2.29352 + 0.73959I$ $b = 1.00000$	$-4.97366 + 3.43143I$	$8.85710 - 2.47386I$

IV. $\boldsymbol{I_4^u = \langle b+1,\ 8.58\times 10^8 u^{13} + 1.33\times 10^{10} u^{12} + \cdots + 1.99\times 10^{11} a - 2.16\times 10^{11},\ u^{14} - 5u^{12} + \cdots + 71u - 27\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

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

$$a_{10} = \begin{pmatrix} -0.00432225u^{13} - 0.0669911u^{12} + \cdots - 1.16044u + 1.08703 \\ -1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.230675u^{13} - 0.276112u^{12} + \cdots + 9.13016u - 2.99354 \\ -0.0669911u^{13} - 0.0949882u^{12} + \cdots + 2.39391u - 0.116701 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.00432225u^{13} - 0.0669911u^{12} + \cdots - 1.16044u + 1.08703 \\ -0.0949882u^{13} - 0.112404u^{12} + \cdots + 4.63967u - 2.80876 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.491617u^{13} - 0.549779u^{12} + \cdots + 22.4159u - 11.7697 \\ -0.708236u^{13} - 0.702608u^{12} + \cdots + 34.5053u - 20.2635 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.129369u^{13} - 0.179029u^{12} + \cdots + 4.92648u - 1.93084 \\ -0.0162597u^{13} - 0.0388906u^{12} + \cdots + 0.473434u - 0.414339 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.221319u^{13} + 0.290675u^{12} + \cdots - 7.66514u + 4.74095 \\ -0.0872540u^{13} - 0.0324988u^{12} + \cdots + 5.00660u - 3.42430 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.134065u^{13} - 0.258176u^{12} + \cdots + 2.65854u - 1.31665 \\ 0.0872540u^{13} + 0.0324988u^{12} + \cdots - 5.00660u + 3.42430 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{28175389}{29072243}u^{13} + \frac{25539934}{29072243}u^{12} + \cdots - \frac{1509716152}{29072243}u + \frac{1122329736}{29072243}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{10}	$u^{14} - 10u^{13} + \cdots - 3259u + 729$
c_2, c_4, c_5 c_9	$u^{14} - 5u^{12} + \cdots - 71u - 27$
c_3, c_7	$(u^7 - 2u^6 + 2u^5 + u^3 - u^2 + 1)^2$
c_6, c_{11}, c_{12}	$u^{14} - u^{13} + \cdots - 1592u - 389$
c_8	$u^{14} - 3u^{13} + \cdots + 359u + 69$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$y^{14} + 30y^{13} + \cdots + 128753y + 531441$
c_2, c_4, c_5 c_9	$y^{14} - 10y^{13} + \cdots - 3259y + 729$
c_3, c_7	$(y^7 + 6y^5 + 5y^3 - y^2 + 2y - 1)^2$
c_6, c_{11}, c_{12}	$y^{14} - 33y^{13} + \cdots - 366178y + 151321$
c_8	$y^{14} + 23y^{13} + \cdots - 87205y + 4761$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.09942$ $a = -1.35900$ $b = -1.00000$	6.43854	20.5760
$u = -0.223848 + 1.077330I$ $a = -0.411557 - 0.510160I$ $b = -1.00000$	$-2.34758 - 1.80700I$	$3.91671 + 3.17034I$
$u = -0.223848 - 1.077330I$ $a = -0.411557 + 0.510160I$ $b = -1.00000$	$-2.34758 + 1.80700I$	$3.91671 - 3.17034I$
$u = 1.065070 + 0.315249I$ $a = -0.970701 + 0.740024I$ $b = -1.00000$	$3.95079 - 2.05810I$	$10.60272 + 4.16307I$
$u = 1.065070 - 0.315249I$ $a = -0.970701 - 0.740024I$ $b = -1.00000$	$3.95079 + 2.05810I$	$10.60272 - 4.16307I$
$u = 0.641734 + 0.329182I$ $a = -0.95791 - 1.18741I$ $b = -1.00000$	$-2.34758 + 1.80700I$	$3.91671 - 3.17034I$
$u = 0.641734 - 0.329182I$ $a = -0.95791 + 1.18741I$ $b = -1.00000$	$-2.34758 - 1.80700I$	$3.91671 + 3.17034I$
$u = -1.267160 + 0.482164I$ $a = -0.651522 - 0.496695I$ $b = -1.00000$	$3.95079 - 2.05810I$	$10.60272 + 4.16307I$
$u = -1.267160 - 0.482164I$ $a = -0.651522 + 0.496695I$ $b = -1.00000$	$3.95079 + 2.05810I$	$10.60272 - 4.16307I$
$u = -1.49411$ $a = -0.735834$ $b = -1.00000$	6.43854	20.5760

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.46396+1.07750I$ $a=-0.255519-0.994371I$ $b=-1.00000$	$13.27180-3.91407I$	$8.69280+2.02914I$
$u=-1.46396-1.07750I$ $a=-0.255519+0.994371I$ $b=-1.00000$	$13.27180+3.91407I$	$8.69280-2.02914I$
$u=\quad 1.44551+1.18040I$ $a=-0.242413+0.943369I$ $b=-1.00000$	$13.27180-3.91407I$	$8.69280+2.02914I$
$u=\quad 1.44551-1.18040I$ $a=-0.242413-0.943369I$ $b=-1.00000$	$13.27180+3.91407I$	$8.69280-2.02914I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = 0.500000 - 0.866025I$ $b = 1.00000$	3.28987	12.0000
$u = -0.500000 - 0.866025I$ $a = 0.500000 + 0.866025I$ $b = 1.00000$	3.28987	12.0000

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^2-u+1)(u^5-3u^4+\cdots-5u+1)(u^{12}-9u^{11}+\cdots-12u+1)$ $\cdot(u^{14}-10u^{13}+\cdots-3259u+729)(u^{19}+12u^{18}+\cdots-12u-1)$
c_2, c_4	$(u^2+u+1)(u^5+u^4+\cdots+u+1)(u^{12}-u^{11}+\cdots-2u+1)$ $\cdot(u^{14}-5u^{12}+\cdots-71u-27)(u^{19}+6u^{17}+\cdots+2u-1)$
c_3	$(u-1)^2(u^5+4u^4+8u^3+7u^2+2u-1)(u^6-u^5+u^4+u^3+u+1)^2$ $\cdot((u^7-2u^6+2u^5+u^3-u^2+1)^2)(u^{19}+5u^{18}+\cdots-5u-3)$
c_5, c_9	$(u^2-u+1)(u^5-u^4+\cdots+u-1)(u^{12}+u^{11}+\cdots+2u+1)$ $\cdot(u^{14}-5u^{12}+\cdots-71u-27)(u^{19}+6u^{17}+\cdots+2u-1)$
c_6, c_{12}	$(u+1)^2(u^5+2u^4+u^3+2u^2+1)$ $\cdot(u^{12}-3u^{11}+3u^{10}+u^9-7u^8+7u^7+2u^6-7u^5+6u^4-4u^3+4u^2+1)$ $\cdot(u^{14}-u^{13}+\cdots-1592u-389)(u^{19}+u^{18}+\cdots+u-3)$
c_7	$(u+1)^2(u^5-4u^4+8u^3-7u^2+2u+1)(u^6+u^5+u^4-u^3-u+1)^2$ $\cdot((u^7-2u^6+2u^5+u^3-u^2+1)^2)(u^{19}+5u^{18}+\cdots-5u-3)$
c_8	$(u^2+u+1)(u^5-3u^3+u^2+3u+1)(u^{12}-4u^{11}+\cdots-4u+1)$ $\cdot(u^{14}-3u^{13}+\cdots+359u+69)(u^{19}-u^{18}+\cdots-2u-1)$
c_{10}	$(u^2+u+1)(u^5+3u^4+\cdots-5u-1)(u^{12}+9u^{11}+\cdots+12u+1)$ $\cdot(u^{14}-10u^{13}+\cdots-3259u+729)(u^{19}+12u^{18}+\cdots-12u-1)$
c_{11}	$(u-1)^2(u^5-2u^4+u^3-2u^2-1)$ $\cdot(u^{12}+3u^{11}+3u^{10}-u^9-7u^8-7u^7+2u^6+7u^5+6u^4+4u^3+4u^2+1)$ $\cdot(u^{14}-u^{13}+\cdots-1592u-389)(u^{19}+u^{18}+\cdots+u-3)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$(y^2+y+1)(y^5-9y^4+32y^3-43y^2+11y-1)$ $\cdot\,(y^{12}-3y^{11}+\cdots-16y+1)(y^{14}+30y^{13}+\cdots+128753y+531441)$ $\cdot\,(y^{19}+32y^{18}+\cdots+116y-1)$
c_2, c_4, c_5 c_9	$(y^2+y+1)(y^5+3y^4+\cdots-5y-1)(y^{12}+9y^{11}+\cdots+12y+1)$ $\cdot\,(y^{14}-10y^{13}+\cdots-3259y+729)(y^{19}+12y^{18}+\cdots-12y-1)$
c_3, c_7	$(y-1)^2(y^5+12y^3-9y^2+18y-1)(y^6+y^5+3y^4+3y^3-y+1)^2$ $\cdot\,((y^7+6y^5+5y^3-y^2+2y-1)^2)(y^{19}-3y^{18}+\cdots+103y-9)$
c_6, c_{11}, c_{12}	$((y-1)^2)(y^5-2y^4+\cdots-4y-1)(y^{12}-3y^{11}+\cdots+8y+1)$ $\cdot\,(y^{14}-33y^{13}+\cdots-366178y+151321)(y^{19}-17y^{18}+\cdots+73y-9)$
c_8	$(y^2+y+1)(y^5-6y^4+\cdots+7y-1)(y^{12}+2y^{11}+\cdots+2y+1)$ $\cdot\,(y^{14}+23y^{13}+\cdots-87205y+4761)(y^{19}+11y^{18}+\cdots+44y-1)$