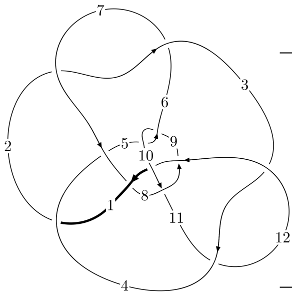
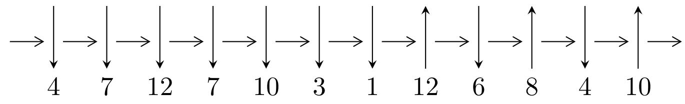
$12n_{0811}$ ($K12n_{0811}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -238u^{15} + 537u^{14} + \cdots + 1291b + 644,\ -932u^{15} - 273u^{14} + \cdots + 1291a + 3661,$$
$$u^{16} - 4u^{14} + 4u^{13} + 12u^{12} - 18u^{11} - 13u^{10} + 44u^9 - 6u^8 - 55u^7 + 38u^6 + 30u^5 - 42u^4 + u^3 + 17u^2 - 6u -$$
$$I_2^u = \langle 1.11360 \times 10^{68}u^{37} - 1.13094 \times 10^{68}u^{36} + \cdots + 3.45683 \times 10^{69}b - 5.20337 \times 10^{69},$$
$$-1.43917 \times 10^{70}u^{37} + 2.46784 \times 10^{70}u^{36} + \cdots + 2.73089 \times 10^{71}a + 1.06137 \times 10^{72},$$
$$u^{38} - u^{37} + \cdots - 62u - 79\rangle$$
$$I_3^u = \langle 23118092u^{15} - 125359960u^{14} + \cdots + 124624936 - 54569021,$$
$$21062121u^{15} - 121014315u^{14} + \cdots + 12462493a - 38321689,\ u^{16} - 6u^{15} + \cdots - 4u + 1\rangle$$
$$I_4^u = \langle -u^5 + u^3 - 2u^2 + b - u + 1,\ -u^5 + 2u^3 - 2u^2 + a - 2u + 2,\ u^6 + u^5 - 2u^4 + 3u^2 - u - 1\rangle$$
$$I_5^u = \langle b - 1,\ a,\ u - 1\rangle$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 77 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. $\boldsymbol{I^u_1 = \langle -238u^{15} + 537u^{14} + \cdots + 1291b + 644,\ -932u^{15} - 273u^{14} + \cdots + 1291a + 3661,\ u^{16} - 4u^{14} + \cdots - 6u - 1\rangle}$

(i) Arc colorings

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.721921u^{15} + 0.211464u^{14} + \cdots + 4.89388u - 2.83579 \\ 0.184353u^{15} - 0.415957u^{14} + \cdots + 1.94500u - 0.498838 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.721921u^{15} + 0.211464u^{14} + \cdots + 4.89388u - 2.83579 \\ -0.367932u^{15} - 0.711851u^{14} + \cdots - 0.0457010u - 0.710302 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.0503486u^{15} + 0.344694u^{14} + \cdots + 3.12006u - 0.981410 \\ -0.0503486u^{15} + 0.344694u^{14} + \cdots + 3.12006u + 0.0185902 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -1 \\ -0.0503486u^{15} + 0.344694u^{14} + \cdots + 3.12006u + 0.0185902 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.0503486u^{15} + 0.344694u^{14} + \cdots + 3.12006u - 0.981410 \\ -0.0751356u^{15} - 0.254841u^{14} + \cdots + 1.10225u - 0.326104 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.537568u^{15} + 0.627421u^{14} + \cdots + 2.94888u - 2.33695 \\ -0.211464u^{15} - 0.552285u^{14} + \cdots - 1.49574u - 0.721921 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.333075u^{15} - 0.181255u^{14} + \cdots + 0.948102u + 2.43067 \\ 0.344694u^{15} + 0.0247870u^{14} + \cdots - 1.28350u - 0.0503486 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.326104u^{15} + 0.0751356u^{14} + \cdots + 1.45314u - 3.05887 \\ -0.211464u^{15} - 0.552285u^{14} + \cdots - 1.49574u - 0.721921 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u \\ -0.344694u^{15} - 0.0247870u^{14} + \cdots + 1.28350u + 0.0503486 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{4859}{1291}u^{15} - \frac{196}{1291}u^{14} + \cdots + \frac{57432}{1291}u - \frac{9123}{1291}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{16} - u^{15} + \cdots - 8u + 1$
c_2, c_6	$u^{16} + 8u^{15} + \cdots + 20u - 8$
c_3, c_5, c_9 c_{11}	$u^{16} + u^{15} + \cdots + 8u + 2$
c_7	$u^{16} - 15u^{15} + \cdots + 384u - 64$
c_8	$u^{16} - 23u^{15} + \cdots + 2952u - 472$
c_{10}, c_{12}	$u^{16} - 4u^{14} + \cdots - 6u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{16} - 23y^{15} + \cdots - 32y + 1$
c_2, c_6	$y^{16} + 8y^{15} + \cdots - 1232y + 64$
c_3, c_5, c_9 c_{11}	$y^{16} + 13y^{15} + \cdots + 16y + 4$
c_7	$y^{16} - y^{15} + \cdots - 30720y + 4096$
c_8	$y^{16} - 31y^{15} + \cdots - 1605984y + 222784$
c_{10}, c_{12}	$y^{16} - 8y^{15} + \cdots - 70y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.728978 + 0.677201I$ $a = 0.532336 + 0.060278I$ $b = -0.100353 - 1.153050I$	$-2.58048 + 3.00554I$	$-8.10520 - 2.38597I$
$u = 0.728978 - 0.677201I$ $a = 0.532336 - 0.060278I$ $b = -0.100353 + 1.153050I$	$-2.58048 - 3.00554I$	$-8.10520 + 2.38597I$
$u = -0.973288 + 0.184794I$ $a = 0.75785 + 1.37831I$ $b = 0.04286 + 2.43021I$	$8.11198 - 4.38794I$	$-0.64562 + 2.92845I$
$u = -0.973288 - 0.184794I$ $a = 0.75785 - 1.37831I$ $b = 0.04286 - 2.43021I$	$8.11198 + 4.38794I$	$-0.64562 - 2.92845I$
$u = 0.888929$ $a = 1.47043$ $b = 1.55541$	-3.37262	-0.442120
$u = 0.758242 + 0.439908I$ $a = -0.459222 - 0.501064I$ $b = 0.174916 + 0.053608I$	$1.34319 + 1.06797I$	$1.49479 - 2.77265I$
$u = 0.758242 - 0.439908I$ $a = -0.459222 + 0.501064I$ $b = 0.174916 - 0.053608I$	$1.34319 - 1.06797I$	$1.49479 + 2.77265I$
$u = -1.184440 + 0.400458I$ $a = -0.342142 + 1.050790I$ $b = -0.07013 + 2.63493I$	$1.19975 - 5.05833I$	$-0.62604 + 3.74336I$
$u = -1.184440 - 0.400458I$ $a = -0.342142 - 1.050790I$ $b = -0.07013 - 2.63493I$	$1.19975 + 5.05833I$	$-0.62604 - 3.74336I$
$u = 0.939130 + 0.905743I$ $a = 0.479797 + 0.632021I$ $b = -0.395886 + 0.676605I$	$6.57781 + 4.06178I$	$0.252631 - 0.871494I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.939130 - 0.905743I$ $a = 0.479797 - 0.632021I$ $b = -0.395886 - 0.676605I$	$6.57781 - 4.06178I$	$0.252631 + 0.871494I$
$u = 0.778111 + 1.047600I$ $a = -1.027370 - 0.416604I$ $b = -0.364894 - 0.086454I$	$1.69590 - 0.28714I$	$-3.98649 + 0.31929I$
$u = 0.778111 - 1.047600I$ $a = -1.027370 + 0.416604I$ $b = -0.364894 + 0.086454I$	$1.69590 + 0.28714I$	$-3.98649 - 0.31929I$
$u = -1.42884 + 0.78989I$ $a = -0.004460 - 1.145420I$ $b = 0.25947 - 2.48543I$	$6.3323 - 15.0071I$	$-2.77467 + 7.02006I$
$u = -1.42884 - 0.78989I$ $a = -0.004460 + 1.145420I$ $b = 0.25947 + 2.48543I$	$6.3323 + 15.0071I$	$-2.77467 - 7.02006I$
$u = -0.124728$ $a = -3.34399$ $b = -0.647391$	-0.864939	-12.7770

II. $\boldsymbol{I_2^u = \langle 1.11 \times 10^{68} u^{37} - 1.13 \times 10^{68} u^{36} + \cdots + 3.46 \times 10^{69} b - 5.20 \times 10^{69},\ -1.44 \times 10^{70} u^{37} + 2.47 \times 10^{70} u^{36} + \cdots + 2.73 \times 10^{71} a + 1.06 \times 10^{72},\ u^{38} - u^{37} + \cdots - 62u - 79 \rangle}$

(i) Arc colorings

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

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

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

$$a_{6} = \begin{pmatrix} 0.0526998u^{37} - 0.0903674u^{36} + \cdots + 6.01858u - 3.88653 \\ -0.0322146u^{37} + 0.0327163u^{36} + \cdots - 13.6241u + 1.50524 \end{pmatrix}$$

$$a_{5} = \begin{pmatrix} 0.0526998u^{37} - 0.0903674u^{36} + \cdots + 6.01858u - 3.88653 \\ -0.0656788u^{37} + 0.0946351u^{36} + \cdots - 15.4520u + 4.48099 \end{pmatrix}$$

$$a_{9} = \begin{pmatrix} -0.0923222u^{37} + 0.172239u^{36} + \cdots - 2.83315u + 10.5939 \\ -0.0552169u^{37} + 0.106775u^{36} + \cdots - 3.51727u + 1.07664 \end{pmatrix}$$

$$a_{8} = \begin{pmatrix} -0.0371054u^{37} + 0.0654636u^{36} + \cdots + 0.684120u + 9.51724 \\ -0.0552169u^{37} + 0.106775u^{36} + \cdots - 3.51727u + 1.07664 \end{pmatrix}$$

$$a_{7} = \begin{pmatrix} -0.109138u^{37} + 0.206389u^{36} + \cdots - 4.00626u + 12.8342 \\ 0.0102538u^{37} - 0.0153113u^{36} + \cdots - 2.09807u - 4.36588 \end{pmatrix}$$

$$a_{4} = \begin{pmatrix} -0.0615144u^{37} + 0.0746738u^{36} + \cdots - 6.24915u + 6.93837 \\ -0.0514669u^{37} + 0.116872u^{36} + \cdots + 4.44234u + 3.78722 \end{pmatrix}$$

$$a_{2} = \begin{pmatrix} -0.0418893u^{37} + 0.0332093u^{36} + \cdots - 18.2103u + 7.21885 \\ -0.0520505u^{37} + 0.129376u^{36} + \cdots + 7.63964u + 3.43879 \end{pmatrix}$$

$$a_{3} = \begin{pmatrix} -0.112981u^{37} + 0.191546u^{36} + \cdots - 1.80681u + 10.7256 \\ -0.0514669u^{37} + 0.116872u^{36} + \cdots + 4.44234u + 3.78722 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.0830893u^{37} - 0.117168u^{36} + \cdots + 22.3030u - 10.8514 \\ 0.0370786u^{37} - 0.0992755u^{36} + \cdots - 12.0908u - 0.746538 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.0873374u^{37} - 0.323866u^{36} + \cdots - 73.1911u - 23.6929$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{38} - 4u^{37} + \cdots + 2639u - 353$
c_2, c_6	$(u^{19} - 3u^{18} + \cdots + 65u - 25)^2$
c_3, c_5, c_9 c_{11}	$u^{38} + 11u^{36} + \cdots + 2730u - 2315$
c_7	$(u^{19} + 6u^{18} + \cdots + 10u + 1)^2$
c_8	$(u^{19} + 12u^{18} + \cdots + 1502u + 625)^2$
c_{10}, c_{12}	$u^{38} - u^{37} + \cdots - 62u - 79$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{38} - 20y^{37} + \cdots + 770615y + 124609$
c_2, c_6	$(y^{19} + 17y^{18} + \cdots - 5175y - 625)^2$
c_3, c_5, c_9 c_{11}	$y^{38} + 22y^{37} + \cdots + 60589580y + 5359225$
c_7	$(y^{19} - 12y^{18} + \cdots + 30y - 1)^2$
c_8	$(y^{19} - 54y^{18} + \cdots - 2158996y - 390625)^2$
c_{10}, c_{12}	$y^{38} - 27y^{37} + \cdots - 169744y + 6241$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.679846 + 0.698404I$ $a = -0.273776 + 0.556482I$ $b = -0.473737 + 0.789202I$	$-2.35949 + 0.16321I$	$-2.70781 - 0.18622I$
$u = -0.679846 - 0.698404I$ $a = -0.273776 - 0.556482I$ $b = -0.473737 - 0.789202I$	$-2.35949 - 0.16321I$	$-2.70781 + 0.18622I$
$u = 0.960122 + 0.435314I$ $a = 0.593065 - 0.764570I$ $b = -0.438163 - 1.282160I$	$-1.51388 + 1.79009I$	$-4.72788 - 2.74496I$
$u = 0.960122 - 0.435314I$ $a = 0.593065 + 0.764570I$ $b = -0.438163 + 1.282160I$	$-1.51388 - 1.79009I$	$-4.72788 + 2.74496I$
$u = -1.07632$ $a = 1.52827$ $b = 1.02377$	-7.09286	-34.9180
$u = -0.189836 + 0.874146I$ $a = 0.036583 - 1.409850I$ $b = -0.274085 - 1.305950I$	$-2.35949 - 0.16321I$	$-2.70781 + 0.18622I$
$u = -0.189836 - 0.874146I$ $a = 0.036583 + 1.409850I$ $b = -0.274085 + 1.305950I$	$-2.35949 + 0.16321I$	$-2.70781 - 0.18622I$
$u = -0.879859 + 0.138648I$ $a = 1.18883 - 0.97573I$ $b = 0.737407 - 0.181415I$	$7.75558 + 3.00592I$	$-1.52759 - 2.83549I$
$u = -0.879859 - 0.138648I$ $a = 1.18883 + 0.97573I$ $b = 0.737407 + 0.181415I$	$7.75558 - 3.00592I$	$-1.52759 + 2.83549I$
$u = -1.058720 + 0.361703I$ $a = 0.182710 + 1.281260I$ $b = -0.60977 + 2.90746I$	$10.82200 - 4.29446I$	$-2.82455 + 4.66988I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.058720 - 0.361703I$ $a = 0.182710 - 1.281260I$ $b = -0.60977 - 2.90746I$	$10.82200 + 4.29446I$	$-2.82455 - 4.66988I$
$u = -0.917174 + 0.653292I$ $a = 0.361519 - 0.436397I$ $b = 0.077422 + 0.149014I$	$-1.68798 - 5.37827I$	$0.03508 + 8.21916I$
$u = -0.917174 - 0.653292I$ $a = 0.361519 + 0.436397I$ $b = 0.077422 - 0.149014I$	$-1.68798 + 5.37827I$	$0.03508 - 8.21916I$
$u = 1.114930 + 0.331378I$ $a = -0.097416 - 1.249650I$ $b = -0.20466 - 2.97495I$	$2.34940 + 5.26338I$	$-1.37964 - 4.11831I$
$u = 1.114930 - 0.331378I$ $a = -0.097416 + 1.249650I$ $b = -0.20466 + 2.97495I$	$2.34940 - 5.26338I$	$-1.37964 + 4.11831I$
$u = -0.772346 + 0.321245I$ $a = 1.182060 - 0.764049I$ $b = 0.507053 + 0.918255I$	$9.66886 + 1.37924I$	$-3.48192 + 4.90124I$
$u = -0.772346 - 0.321245I$ $a = 1.182060 + 0.764049I$ $b = 0.507053 - 0.918255I$	$9.66886 - 1.37924I$	$-3.48192 - 4.90124I$
$u = 0.637865 + 0.264901I$ $a = 1.10480 + 1.21426I$ $b = -0.357558 - 0.149777I$	$0.57050 - 2.67427I$	$0.072556 - 0.682395I$
$u = 0.637865 - 0.264901I$ $a = 1.10480 - 1.21426I$ $b = -0.357558 + 0.149777I$	$0.57050 + 2.67427I$	$0.072556 + 0.682395I$
$u = 1.048900 + 0.822943I$ $a = 0.305122 + 0.894638I$ $b = 0.586337 + 1.200440I$	$2.61541 + 7.05508I$	$-3.99946 - 5.58788I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.048900 - 0.822943I$ $a = 0.305122 - 0.894638I$ $b = 0.586337 - 1.200440I$	$2.61541 - 7.05508I$	$-3.99946 + 5.58788I$
$u = -0.407834 + 0.346492I$ $a = 1.26494 - 1.09438I$ $b = -1.010750 - 0.253529I$	$-1.51388 + 1.79009I$	$-4.72788 - 2.74496I$
$u = -0.407834 - 0.346492I$ $a = 1.26494 + 1.09438I$ $b = -1.010750 + 0.253529I$	$-1.51388 - 1.79009I$	$-4.72788 + 2.74496I$
$u = 1.27274 + 0.74326I$ $a = -0.483706 - 0.727031I$ $b = -0.12463 - 2.06088I$	$7.75558 + 3.00592I$	$-1.52759 - 2.83549I$
$u = 1.27274 - 0.74326I$ $a = -0.483706 + 0.727031I$ $b = -0.12463 + 2.06088I$	$7.75558 - 3.00592I$	$-1.52759 + 2.83549I$
$u = 0.87992 + 1.24235I$ $a = -0.116819 + 0.798464I$ $b = 0.65914 + 2.10587I$	$-1.68798 + 5.37827I$	$0. - 8.21916I$
$u = 0.87992 - 1.24235I$ $a = -0.116819 - 0.798464I$ $b = 0.65914 - 2.10587I$	$-1.68798 - 5.37827I$	$0. + 8.21916I$
$u = -0.25188 + 1.54807I$ $a = -1.122660 - 0.209177I$ $b = 0.206822 - 0.294680I$	$2.61541 + 7.05508I$	$-6.00000 - 5.58788I$
$u = -0.25188 - 1.54807I$ $a = -1.122660 + 0.209177I$ $b = 0.206822 + 0.294680I$	$2.61541 - 7.05508I$	$-6.00000 + 5.58788I$
$u = -1.52147 + 0.50416I$ $a = -1.238570 - 0.121447I$ $b = -0.791063 - 0.291030I$	$2.34940 - 5.26338I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.52147 - 0.50416I$ $a = -1.238570 + 0.121447I$ $b = -0.791063 + 0.291030I$	$2.34940 + 5.26338I$	0
$u = 1.45976 + 0.75358I$ $a = -0.605323 - 0.131479I$ $b = 0.968053 - 0.061001I$	$0.57050 + 2.67427I$	0
$u = 1.45976 - 0.75358I$ $a = -0.605323 + 0.131479I$ $b = 0.968053 + 0.061001I$	$0.57050 - 2.67427I$	0
$u = 0.265268$ $a = 2.21133$ $b = -5.15791$	-7.09286	-34.9180
$u = -1.76625 + 0.22968I$ $a = -0.073141 - 1.196270I$ $b = -0.02502 - 2.32333I$	$10.82200 - 4.29446I$	0
$u = -1.76625 - 0.22968I$ $a = -0.073141 + 1.196270I$ $b = -0.02502 + 2.32333I$	$10.82200 + 4.29446I$	0
$u = 1.97650 + 0.49731I$ $a = 0.099205 + 0.900550I$ $b = 0.13426 + 2.15608I$	$9.66886 + 1.37924I$	0
$u = 1.97650 - 0.49731I$ $a = 0.099205 - 0.900550I$ $b = 0.13426 - 2.15608I$	$9.66886 - 1.37924I$	0

III.
$\boldsymbol{I^u_3 = \langle 2.31\times 10^7u^{15} - 1.25\times 10^8u^{14} + \cdots + 1.25\times 10^7b - 5.46\times 10^7,\ 2.11\times 10^7u^{15} - 1.21\times 10^8u^{14} + \cdots + 1.25\times 10^7a - 3.83\times 10^7,\ u^{16} - 6u^{15} + \cdots - 4u + 1\rangle}$

(i) Arc colorings

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -1.69004u^{15} + 9.71028u^{14} + \cdots - 11.2665u + 3.07496 \\ -1.85501u^{15} + 10.0590u^{14} + \cdots - 7.38636u + 4.37866 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -1.69004u^{15} + 9.71028u^{14} + \cdots - 11.2665u + 3.07496 \\ -1.71227u^{15} + 9.23673u^{14} + \cdots - 7.35655u + 3.94870 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.376986u^{15} + 1.70048u^{14} + \cdots - 2.72215u - 1.41104 \\ -0.848481u^{15} + 4.83411u^{14} + \cdots - 1.79540u + 2.41738 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.471494u^{15} - 3.13362u^{14} + \cdots - 0.926749u - 3.82841 \\ -0.848481u^{15} + 4.83411u^{14} + \cdots - 1.79540u + 2.41738 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.288189u^{15} + 1.18161u^{14} + \cdots - 4.41227u - 1.10638 \\ -0.864013u^{15} + 4.90405u^{14} + \cdots - 1.58362u + 2.17451 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -1.60776u^{15} + 8.55089u^{14} + \cdots - 11.0989u + 0.0562033 \\ 0.926120u^{15} - 4.93366u^{14} + \cdots + 6.43429u - 1.93874 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.0288059u^{15} - 0.202607u^{14} + \cdots + 1.24805u - 4.58211 \\ -0.605617u^{15} + 3.36139u^{14} + \cdots - 2.47870u + 2.65769 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -0.681644u^{15} + 3.61723u^{14} + \cdots - 4.66458u - 1.88253 \\ 0.926120u^{15} - 4.93366u^{14} + \cdots + 6.43429u - 1.93874 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.566156u^{15} - 2.60910u^{14} + \cdots + 13.8955u + 1.50899 \\ 0.952811u^{15} - 5.42292u^{14} + \cdots - 0.106500u - 1.86985 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{124023768}{12462493}u^{15} + \frac{710614222}{12462493}u^{14} + \cdots - \frac{606563351}{12462493}u + \frac{272307501}{12462493}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{16} - 7u^{15} + \cdots - 29u - 53$
c_2	$(u^8 + u^7 + u^6 - 4u^4 + 2u^3 + 2u - 1)^2$
c_3, c_9	$u^{16} + u^{15} + \cdots - 12u - 2$
c_5, c_{11}	$u^{16} - u^{15} + \cdots + 12u - 2$
c_6	$(u^8 - u^7 + u^6 - 4u^4 - 2u^3 - 2u - 1)^2$
c_7	$(u^8 - 4u^6 + 7u^5 + u^4 - 5u^3 + 5u - 4)^2$
c_8	$(u^8 - 2u^7 - 9u^6 + 25u^5 + 3u^4 - 43u^3 + 9u^2 + 25u - 1)^2$
c_{10}, c_{12}	$u^{16} - 6u^{15} + \cdots - 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{16} - 17y^{15} + \cdots - 37835y + 2809$
c_2, c_6	$(y^8 + y^7 - 7y^6 - 12y^5 + 10y^4 - 6y^3 - 4y + 1)^2$
c_3, c_5, c_9 c_{11}	$y^{16} + 3y^{15} + \cdots - 28y + 4$
c_7	$(y^8 - 8y^7 + 18y^6 - 57y^5 + 63y^4 - 63y^3 + 42y^2 - 25y + 16)^2$
c_8	$(y^8 - 22y^7 + \cdots - 643y + 1)^2$
c_{10}, c_{12}	$y^{16} - 12y^{15} + \cdots - 6y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.530066 + 0.765157I$ $a = -0.145854 - 1.019240I$ $b = 0.100679 - 0.942977I$	-3.54970	$-10.93452 + 0.I$
$u = -0.530066 - 0.765157I$ $a = -0.145854 + 1.019240I$ $b = 0.100679 + 0.942977I$	-3.54970	$-10.93452 + 0.I$
$u = -0.964408 + 0.610229I$ $a = -0.510934 + 0.031145I$ $b = -0.521192 - 0.566442I$	$-2.38347 - 5.06224I$	$-9.20231 + 4.42667I$
$u = -0.964408 - 0.610229I$ $a = -0.510934 - 0.031145I$ $b = -0.521192 + 0.566442I$	$-2.38347 + 5.06224I$	$-9.20231 - 4.42667I$
$u = 1.14978$ $a = -1.51833$ $b = -1.08522$	-6.94401	19.2240
$u = -0.765359 + 0.097139I$ $a = 0.937764 - 1.042880I$ $b = 0.962499 + 0.741172I$	$9.91734 + 2.03431I$	$1.49914 - 4.94059I$
$u = -0.765359 - 0.097139I$ $a = 0.937764 + 1.042880I$ $b = 0.962499 - 0.741172I$	$9.91734 - 2.03431I$	$1.49914 + 4.94059I$
$u = 0.930008 + 1.034990I$ $a = -0.016590 + 0.832356I$ $b = 0.64870 + 2.33325I$	$-2.38347 + 5.06224I$	$-9.20231 - 4.42667I$
$u = 0.930008 - 1.034990I$ $a = -0.016590 - 0.832356I$ $b = 0.64870 - 2.33325I$	$-2.38347 - 5.06224I$	$-9.20231 + 4.42667I$
$u = 0.452649$ $a = 1.05539$ $b = 5.42502$	-6.94401	19.2240

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.38729 + 0.79942I$ $a = 0.639330 - 0.166225I$ $b = -0.600710 - 0.519283I$	$0.18039 + 3.47753I$	$-3.44178 - 6.27230I$
$u = 1.38729 - 0.79942I$ $a = 0.639330 + 0.166225I$ $b = -0.600710 + 0.519283I$	$0.18039 - 3.47753I$	$-3.44178 + 6.27230I$
$u = 0.234382 + 0.304234I$ $a = -1.95550 - 2.23470I$ $b = 0.291354 + 0.555465I$	$0.18039 + 3.47753I$	$-3.44178 - 6.27230I$
$u = 0.234382 - 0.304234I$ $a = -1.95550 + 2.23470I$ $b = 0.291354 - 0.555465I$	$0.18039 - 3.47753I$	$-3.44178 + 6.27230I$
$u = 1.90694 + 0.52056I$ $a = -0.216748 - 0.899742I$ $b = -0.05123 - 2.14476I$	$9.91734 + 2.03431I$	$1.49914 - 4.94059I$
$u = 1.90694 - 0.52056I$ $a = -0.216748 + 0.899742I$ $b = -0.05123 + 2.14476I$	$9.91734 - 2.03431I$	$1.49914 + 4.94059I$

IV. $\boldsymbol{I_4^u =}$
$\boldsymbol{\langle -u^5+u^3-2u^2+b-u+1,\ -u^5+2u^3-2u^2+a-2u+2,\ u^6+u^5-2u^4+3u^2-u-1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 6u^5 + 5u^4 - 10u^3 + 2u^2 + 9u - 8$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^6 - 2u^3 - 2u^2 + u + 1$
c_2	$u^6 + 3u^4 - u^3 + 4u^2 - 7u + 1$
c_3, c_9	$u^6 - u^5 + 3u^4 + 2u^3 - u^2 + 4u + 1$
c_5, c_{11}	$u^6 + u^5 + 3u^4 - 2u^3 - u^2 - 4u + 1$
c_6	$u^6 + 3u^4 + u^3 + 4u^2 + 7u + 1$
c_7	$u^6 - u^3 - 4u^2 - 4u - 1$
c_8	$u^6 + 5u^5 + 4u^4 - 14u^3 - 11u^2 + 3u - 1$
c_{10}, c_{12}	$u^6 + u^5 - 2u^4 + 3u^2 - u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^6 - 4y^4 - 2y^3 + 8y^2 - 5y + 1$
c_2, c_6	$y^6 + 6y^5 + 17y^4 + 25y^3 + 8y^2 - 41y + 1$
c_3, c_5, c_9 c_{11}	$y^6 + 5y^5 + 11y^4 - 9y^2 - 18y + 1$
c_7	$y^6 - 8y^4 - 3y^3 + 8y^2 - 8y + 1$
c_8	$y^6 - 17y^5 + 134y^4 - 316y^3 + 197y^2 + 13y + 1$
c_{10}, c_{12}	$y^6 - 5y^5 + 10y^4 - 12y^3 + 13y^2 - 7y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.772562 + 0.775063I$ $a = 0.298956 + 0.982149I$ $b = -0.404786 + 1.129280I$	$5.91845 + 4.87319I$	$-5.51837 - 6.60993I$
$u = 0.772562 - 0.775063I$ $a = 0.298956 - 0.982149I$ $b = -0.404786 - 1.129280I$	$5.91845 - 4.87319I$	$-5.51837 + 6.60993I$
$u = 0.827970$ $a = 0.280915$ $b = 1.02055$	0.0306709	−0.168770
$u = -1.45553 + 0.25337I$ $a = 0.221038 + 1.185900I$ $b = -0.12674 + 2.52662I$	$12.64200 - 3.59018I$	$1.92451 + 1.76671I$
$u = -1.45553 - 0.25337I$ $a = 0.221038 - 1.185900I$ $b = -0.12674 - 2.52662I$	$12.64200 + 3.59018I$	$1.92451 - 1.76671I$
$u = -0.462038$ $a = -2.32090$ $b = -0.957501$	−4.25280	−10.6440

V. $\boldsymbol{I_5^u = \langle b-1,\ a,\ u-1\rangle}$

(i) Arc colorings

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

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

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

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

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

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

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

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

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

$a_2 = \begin{pmatrix} 2 \\ -1 \end{pmatrix}$

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

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

(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_{10}, c_{12}	$u - 1$
c_3, c_5, c_7 c_9, c_{11}	u
c_6, c_8	$u + 1$

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

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

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_4	$(u-1)(u^6-2u^3-2u^2+u+1)(u^{16}-7u^{15}+\cdots-29u-53)$ $\cdot(u^{16}-u^{15}+\cdots-8u+1)(u^{38}-4u^{37}+\cdots+2639u-353)$
c_2	$(u-1)(u^6+3u^4-u^3+4u^2-7u+1)$ $\cdot((u^8+u^7+u^6-4u^4+2u^3+2u-1)^2)(u^{16}+8u^{15}+\cdots+20u-8)$ $\cdot(u^{19}-3u^{18}+\cdots+65u-25)^2$
c_3, c_9	$u(u^6-u^5+\cdots+4u+1)(u^{16}+u^{15}+\cdots-12u-2)$ $\cdot(u^{16}+u^{15}+\cdots+8u+2)(u^{38}+11u^{36}+\cdots+2730u-2315)$
c_5, c_{11}	$u(u^6+u^5+\cdots-4u+1)(u^{16}-u^{15}+\cdots+12u-2)$ $\cdot(u^{16}+u^{15}+\cdots+8u+2)(u^{38}+11u^{36}+\cdots+2730u-2315)$
c_6	$(u+1)(u^6+3u^4+u^3+4u^2+7u+1)$ $\cdot((u^8-u^7+u^6-4u^4-2u^3-2u-1)^2)(u^{16}+8u^{15}+\cdots+20u-8)$ $\cdot(u^{19}-3u^{18}+\cdots+65u-25)^2$
c_7	$u(u^6-u^3-4u^2-4u-1)(u^8-4u^6+7u^5+u^4-5u^3+5u-4)^2$ $\cdot(u^{16}-15u^{15}+\cdots+384u-64)(u^{19}+6u^{18}+\cdots+10u+1)^2$
c_8	$(u+1)(u^6+5u^5+4u^4-14u^3-11u^2+3u-1)$ $\cdot(u^8-2u^7-9u^6+25u^5+3u^4-43u^3+9u^2+25u-1)^2$ $\cdot(u^{16}-23u^{15}+\cdots+2952u-472)$ $\cdot(u^{19}+12u^{18}+\cdots+1502u+625)^2$
c_{10}, c_{12}	$(u-1)(u^6+u^5+\cdots-u-1)(u^{16}-4u^{14}+\cdots-6u-1)$ $\cdot(u^{16}-6u^{15}+\cdots-4u+1)(u^{38}-u^{37}+\cdots-62u-79)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y-1)(y^6-4y^4+\cdots-5y+1)(y^{16}-23y^{15}+\cdots-32y+1)$ $\cdot\,(y^{16}-17y^{15}+\cdots-37835y+2809)$ $\cdot\,(y^{38}-20y^{37}+\cdots+770615y+124609)$
c_2, c_6	$(y-1)(y^6+6y^5+17y^4+25y^3+8y^2-41y+1)$ $\cdot\,(y^8+y^7-7y^6-12y^5+10y^4-6y^3-4y+1)^2$ $\cdot\,(y^{16}+8y^{15}+\cdots-1232y+64)(y^{19}+17y^{18}+\cdots-5175y-625)^2$
c_3, c_5, c_9 c_{11}	$y(y^6+5y^5+\cdots-18y+1)(y^{16}+3y^{15}+\cdots-28y+4)$ $\cdot\,(y^{16}+13y^{15}+\cdots+16y+4)$ $\cdot\,(y^{38}+22y^{37}+\cdots+60589580y+5359225)$
c_7	$y(y^6-8y^4-3y^3+8y^2-8y+1)$ $\cdot\,(y^8-8y^7+18y^6-57y^5+63y^4-63y^3+42y^2-25y+16)^2$ $\cdot\,(y^{16}-y^{15}+\cdots-30720y+4096)(y^{19}-12y^{18}+\cdots+30y-1)^2$
c_8	$(y-1)(y^6-17y^5+134y^4-316y^3+197y^2+13y+1)$ $\cdot\,(y^8-22y^7+\cdots-643y+1)^2$ $\cdot\,(y^{16}-31y^{15}+\cdots-1605984y+222784)$ $\cdot\,(y^{19}-54y^{18}+\cdots-2158996y-390625)^2$
c_{10}, c_{12}	$(y-1)(y^6-5y^5+10y^4-12y^3+13y^2-7y+1)$ $\cdot\,(y^{16}-12y^{15}+\cdots-6y+1)(y^{16}-8y^{15}+\cdots-70y+1)$ $\cdot\,(y^{38}-27y^{37}+\cdots-169744y+6241)$