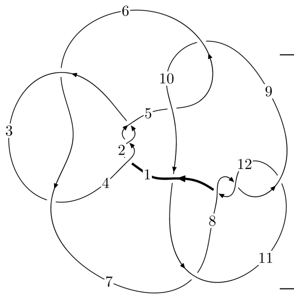
$12a_{0814}$ ($K12a_{0814}$)



A knot diagram[1]

Linearized knot diagam

$\to \downarrow \to \downarrow \to \downarrow \to \downarrow \to \downarrow \to \downarrow \to \downarrow \to \downarrow \to \downarrow \to \downarrow \to \downarrow \to \downarrow \to$

4 5 7 2 10 3 11 12 6 1 9 8

Solving Sequence

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

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

$$I_1^u = \langle 9.56930 \times 10^{26} u^{91} + 4.97491 \times 10^{26} u^{90} + \cdots + 1.83397 \times 10^{27} b + 3.92664 \times 10^{27},$$
$$- 5.52127 \times 10^{26} u^{91} - 8.62278 \times 10^{26} u^{90} + \cdots + 1.83397 \times 10^{27} a - 2.61403 \times 10^{27},\ u^{92} - 4u^{91} + \cdots - 8u^2$$
$$I_2^u = \langle b - u - 1,\ u^2 + a + u + 3,\ u^3 + 2u - 1 \rangle$$
$$I_3^u = \langle -u^2 a - u^2 + b + u - 1,\ -u^2 a + a^2 + 2au - u^2 - a + 2u - 3,\ u^3 - u^2 + 2u - 1 \rangle$$
$$I_4^u = \langle b - u - 1,\ -u^3 - u^2 + a - u - 1,\ u^4 + u^3 + 2u^2 + 2u + 1 \rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 105 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. $I_1^u = \langle 9.57 \times 10^{26} u^{91} + 4.97 \times 10^{26} u^{90} + \cdots + 1.83 \times 10^{27} b + 3.93 \times 10^{27},\ -5.52 \times 10^{26} u^{91} - 8.62 \times 10^{26} u^{90} + \cdots + 1.83 \times 10^{27} a - 2.61 \times 10^{27},\ u^{92} - 4u^{91} + \cdots - 8u^2 + 1 \rangle$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 0.301056u^{91} + 0.470171u^{90} + \cdots - 2.96443u + 1.42534 \\ -0.521781u^{91} - 0.271265u^{90} + \cdots - 1.81529u - 2.14106 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.132509u^{91} + 1.28972u^{90} + \cdots - 1.42156u + 1.98262 \\ -1.74961u^{91} + 3.41466u^{90} + \cdots - 2.45957u - 2.11975 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.499637u^{91} - 3.19051u^{90} + \cdots - 2.69354u - 1.70145 \\ 1.20761u^{91} - 2.29856u^{90} + \cdots + 2.49070u + 0.858623 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^4 - u^2 + 1 \\ -u^6 - 2u^4 - u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.133234u^{91} - 0.329272u^{90} + \cdots - 4.03448u - 0.614475 \\ -0.164836u^{91} + 0.0117691u^{90} + \cdots - 0.440981u - 0.836998 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.500057u^{91} - 1.31833u^{90} + \cdots - 1.15620u + 0.817075 \\ -0.663481u^{91} + 0.793381u^{90} + \cdots - 0.361576u - 1.01523 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^5 + 2u^3 + u \\ -u^5 - u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{2365091250833776522114268693}{916983961196051693206135667} u^{91} - \frac{18729853830167391906229939375}{1833967922392103386412271334} u^{90} + \cdots - \frac{1024932205509583481893242009}{1833967922392103386412271334} u - \frac{16203344775728881724174542717}{1833967922392103386412271334}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_4	$u^{92} - 11u^{91} + \cdots + 10u + 1$
c_3, c_6	$u^{92} + 4u^{91} + \cdots - 576u - 128$
c_5, c_9	$u^{92} + 2u^{91} + \cdots - 352u - 64$
c_7	$u^{92} + 4u^{91} + \cdots - 228u + 36$
c_8, c_{11}, c_{12}	$u^{92} - 4u^{91} + \cdots - 8u^2 + 1$
c_{10}	$u^{92} - 20u^{91} + \cdots - 102752u + 13633$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$y^{92} - 89y^{91} + \cdots - 208y + 1$
c_3, c_6	$y^{92} - 54y^{91} + \cdots - 716800y + 16384$
c_5, c_9	$y^{92} + 42y^{91} + \cdots - 25600y + 4096$
c_7	$y^{92} + 4y^{91} + \cdots + 8856y + 1296$
c_8, c_{11}, c_{12}	$y^{92} + 84y^{91} + \cdots - 16y + 1$
c_{10}	$y^{92} + 28y^{91} + \cdots + 10518208240y + 185858689$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.142365 + 1.052150I$ $a = 0.00718 + 2.51345I$ $b = 0.224624 - 1.256470I$	$-1.67872 + 2.40443I$	0
$u = -0.142365 - 1.052150I$ $a = 0.00718 - 2.51345I$ $b = 0.224624 + 1.256470I$	$-1.67872 - 2.40443I$	0
$u = -0.031893 + 1.093450I$ $a = 0.789128 + 0.767645I$ $b = -1.344780 - 0.179061I$	$0.0460196 + 0.0531118I$	0
$u = -0.031893 - 1.093450I$ $a = 0.789128 - 0.767645I$ $b = -1.344780 + 0.179061I$	$0.0460196 - 0.0531118I$	0
$u = -0.227106 + 1.094750I$ $a = -0.204440 + 0.030157I$ $b = 0.889203 + 0.208382I$	$0.63573 + 4.55193I$	0
$u = -0.227106 - 1.094750I$ $a = -0.204440 - 0.030157I$ $b = 0.889203 - 0.208382I$	$0.63573 - 4.55193I$	0
$u = -0.343914 + 1.068750I$ $a = 0.718999 - 1.078310I$ $b = -1.331240 - 0.090187I$	$-5.38660 + 7.98182I$	0
$u = -0.343914 - 1.068750I$ $a = 0.718999 + 1.078310I$ $b = -1.331240 + 0.090187I$	$-5.38660 - 7.98182I$	0
$u = 0.448104 + 0.745173I$ $a = 0.74104 - 1.60583I$ $b = -0.196534 - 0.021984I$	$-4.37379 + 8.39720I$	0
$u = 0.448104 - 0.745173I$ $a = 0.74104 + 1.60583I$ $b = -0.196534 + 0.021984I$	$-4.37379 - 8.39720I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.179563 + 1.129290I$ $a = -1.30215 - 1.10394I$ $b = 1.63847 - 0.22558I$	$-7.32936 - 2.64950I$	0
$u = 0.179563 - 1.129290I$ $a = -1.30215 + 1.10394I$ $b = 1.63847 + 0.22558I$	$-7.32936 + 2.64950I$	0
$u = 0.666539 + 0.497806I$ $a = 0.904957 - 0.193946I$ $b = 0.316460 - 0.675572I$	$0.72279 - 2.24152I$	$-17.3233 + 3.8345I$
$u = 0.666539 - 0.497806I$ $a = 0.904957 + 0.193946I$ $b = 0.316460 + 0.675572I$	$0.72279 + 2.24152I$	$-17.3233 - 3.8345I$
$u = 0.761685 + 0.298417I$ $a = 0.456120 + 0.768958I$ $b = 1.38372 - 1.02861I$	$-5.88875 - 12.68560I$	$-15.9259 + 8.5530I$
$u = 0.761685 - 0.298417I$ $a = 0.456120 - 0.768958I$ $b = 1.38372 + 1.02861I$	$-5.88875 + 12.68560I$	$-15.9259 - 8.5530I$
$u = -0.789964 + 0.118774I$ $a = -0.661860 - 0.366395I$ $b = -1.091720 - 0.159682I$	$-8.30183 - 3.84281I$	$-17.8337 + 2.8735I$
$u = -0.789964 - 0.118774I$ $a = -0.661860 + 0.366395I$ $b = -1.091720 + 0.159682I$	$-8.30183 + 3.84281I$	$-17.8337 - 2.8735I$
$u = 0.716560 + 0.297487I$ $a = 0.002046 - 1.151310I$ $b = -0.869946 + 0.259215I$	$-0.00340 - 8.16832I$	$-12.8516 + 8.4123I$
$u = 0.716560 - 0.297487I$ $a = 0.002046 + 1.151310I$ $b = -0.869946 - 0.259215I$	$-0.00340 + 8.16832I$	$-12.8516 - 8.4123I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.704793 + 0.307944I$ $a = -0.792982 + 0.830802I$ $b = -1.05582 - 1.30510I$	$-7.88429 + 5.84555I$	$-17.7064 - 5.3639I$
$u = -0.704793 - 0.307944I$ $a = -0.792982 - 0.830802I$ $b = -1.05582 + 1.30510I$	$-7.88429 - 5.84555I$	$-17.7064 + 5.3639I$
$u = 0.387666 + 0.648093I$ $a = 0.001726 + 0.890620I$ $b = 0.716919 + 0.032222I$	$1.33594 + 4.23494I$	$-9.89163 - 3.43303I$
$u = 0.387666 - 0.648093I$ $a = 0.001726 - 0.890620I$ $b = 0.716919 - 0.032222I$	$1.33594 - 4.23494I$	$-9.89163 + 3.43303I$
$u = 0.694128 + 0.276007I$ $a = -0.208000 - 0.170305I$ $b = -1.67772 + 0.64980I$	$-2.89176 - 5.69556I$	$-14.8915 + 6.2831I$
$u = 0.694128 - 0.276007I$ $a = -0.208000 + 0.170305I$ $b = -1.67772 - 0.64980I$	$-2.89176 + 5.69556I$	$-14.8915 - 6.2831I$
$u = 0.639348 + 0.362879I$ $a = -0.080883 + 0.391950I$ $b = 0.796662 - 0.064064I$	$2.87803 - 3.21226I$	$-7.10916 + 5.15078I$
$u = 0.639348 - 0.362879I$ $a = -0.080883 - 0.391950I$ $b = 0.796662 + 0.064064I$	$2.87803 + 3.21226I$	$-7.10916 - 5.15078I$
$u = -0.409671 + 0.598345I$ $a = -1.35127 - 1.41304I$ $b = 0.419113 - 0.362791I$	$-6.70228 - 1.95771I$	$-15.9931 - 0.5196I$
$u = -0.409671 - 0.598345I$ $a = -1.35127 + 1.41304I$ $b = 0.419113 + 0.362791I$	$-6.70228 + 1.95771I$	$-15.9931 + 0.5196I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.119770 + 1.269710I$ $a = -0.147331 - 0.963782I$ $b = 0.148541 + 0.825571I$	$3.07060 + 1.96014I$	0
$u = -0.119770 - 1.269710I$ $a = -0.147331 + 0.963782I$ $b = 0.148541 - 0.825571I$	$3.07060 - 1.96014I$	0
$u = 0.654898 + 0.270175I$ $a = -0.727352 + 1.149210I$ $b = -0.045234 + 0.192756I$	$-1.56617 - 2.78383I$	$-14.9152 + 4.7455I$
$u = 0.654898 - 0.270175I$ $a = -0.727352 - 1.149210I$ $b = -0.045234 - 0.192756I$	$-1.56617 + 2.78383I$	$-14.9152 - 4.7455I$
$u = -0.694676 + 0.105876I$ $a = 0.717960 + 0.636631I$ $b = -0.237790 + 0.206297I$	$-2.32258 - 1.07187I$	$-15.2882 + 4.7085I$
$u = -0.694676 - 0.105876I$ $a = 0.717960 - 0.636631I$ $b = -0.237790 - 0.206297I$	$-2.32258 + 1.07187I$	$-15.2882 - 4.7085I$
$u = 0.504245 + 0.477251I$ $a = -0.159414 - 0.994757I$ $b = -0.156886 + 0.230667I$	$3.40182 - 0.56518I$	$-5.80669 + 2.57586I$
$u = 0.504245 - 0.477251I$ $a = -0.159414 + 0.994757I$ $b = -0.156886 - 0.230667I$	$3.40182 + 0.56518I$	$-5.80669 - 2.57586I$
$u = -0.662313 + 0.175373I$ $a = -0.022080 - 0.544950I$ $b = 1.85088 + 0.97936I$	$-4.18177 + 0.78779I$	$-16.7968 - 0.8436I$
$u = -0.662313 - 0.175373I$ $a = -0.022080 + 0.544950I$ $b = 1.85088 - 0.97936I$	$-4.18177 - 0.78779I$	$-16.7968 + 0.8436I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.636842 + 0.239791I$ $a = 0.056662 - 1.355770I$ $b = 0.795740 + 0.685955I$	$-1.99118 + 2.67547I$	$-15.2993 - 6.0545I$
$u = -0.636842 - 0.239791I$ $a = 0.056662 + 1.355770I$ $b = 0.795740 - 0.685955I$	$-1.99118 - 2.67547I$	$-15.2993 + 6.0545I$
$u = 0.290523 + 0.597652I$ $a = -0.34550 + 2.29035I$ $b = -0.306287 - 0.344198I$	$-1.48070 + 2.06950I$	$-11.57303 - 0.92768I$
$u = 0.290523 - 0.597652I$ $a = -0.34550 - 2.29035I$ $b = -0.306287 + 0.344198I$	$-1.48070 - 2.06950I$	$-11.57303 + 0.92768I$
$u = -0.260268 + 1.313650I$ $a = 0.276935 - 1.203230I$ $b = -0.47777 + 1.57760I$	$2.10659 + 2.37333I$	0
$u = -0.260268 - 1.313650I$ $a = 0.276935 + 1.203230I$ $b = -0.47777 - 1.57760I$	$2.10659 - 2.37333I$	0
$u = -0.195760 + 1.328170I$ $a = 2.45199 - 2.17556I$ $b = -2.43344 + 2.90159I$	$1.71998 + 2.56116I$	0
$u = -0.195760 - 1.328170I$ $a = 2.45199 + 2.17556I$ $b = -2.43344 - 2.90159I$	$1.71998 - 2.56116I$	0
$u = -0.338504 + 1.319110I$ $a = 0.899677 - 0.362618I$ $b = -1.041090 - 0.688240I$	$-3.80390 + 0.22278I$	0
$u = -0.338504 - 1.319110I$ $a = 0.899677 + 0.362618I$ $b = -1.041090 + 0.688240I$	$-3.80390 - 0.22278I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.618274 + 0.124073I$ $a = 1.250510 - 0.537485I$ $b = 1.251080 - 0.087774I$	$-10.31260 - 0.38606I$	$-19.6066 + 9.7099I$
$u = 0.618274 - 0.124073I$ $a = 1.250510 + 0.537485I$ $b = 1.251080 + 0.087774I$	$-10.31260 + 0.38606I$	$-19.6066 - 9.7099I$
$u = 0.230538 + 1.357000I$ $a = -1.213770 - 0.237388I$ $b = 1.37325 - 0.97206I$	$-5.59686 - 3.43534I$	0
$u = 0.230538 - 1.357000I$ $a = -1.213770 + 0.237388I$ $b = 1.37325 + 0.97206I$	$-5.59686 + 3.43534I$	0
$u = -0.255344 + 1.366370I$ $a = -3.38633 + 0.53751I$ $b = 3.62963 + 0.34549I$	$0.70883 + 4.11092I$	0
$u = -0.255344 - 1.366370I$ $a = -3.38633 - 0.53751I$ $b = 3.62963 - 0.34549I$	$0.70883 - 4.11092I$	0
$u = -0.177622 + 1.386400I$ $a = 1.86610 - 0.97129I$ $b = -2.19074 + 1.06368I$	$4.32545 + 2.08315I$	0
$u = -0.177622 - 1.386400I$ $a = 1.86610 + 0.97129I$ $b = -2.19074 - 1.06368I$	$4.32545 - 2.08315I$	0
$u = -0.25033 + 1.39564I$ $a = -2.35899 + 0.08339I$ $b = 2.87723 + 0.04231I$	$3.23137 + 5.92026I$	0
$u = -0.25033 - 1.39564I$ $a = -2.35899 - 0.08339I$ $b = 2.87723 - 0.04231I$	$3.23137 - 5.92026I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.15781 + 1.41089I$ $a = 2.15833 - 0.39554I$ $b = -2.63802 + 1.10324I$	$5.23253 - 2.39068I$	0
$u = 0.15781 - 1.41089I$ $a = 2.15833 + 0.39554I$ $b = -2.63802 - 1.10324I$	$5.23253 + 2.39068I$	0
$u = 0.12683 + 1.41487I$ $a = -0.729131 - 0.110038I$ $b = 0.861769 + 1.075790I$	$4.56630 + 0.56531I$	0
$u = 0.12683 - 1.41487I$ $a = -0.729131 + 0.110038I$ $b = 0.861769 - 1.075790I$	$4.56630 - 0.56531I$	0
$u = 0.25775 + 1.40739I$ $a = -0.554080 - 0.855524I$ $b = 0.93444 + 1.57819I$	$3.79344 - 6.12228I$	0
$u = 0.25775 - 1.40739I$ $a = -0.554080 + 0.855524I$ $b = 0.93444 - 1.57819I$	$3.79344 + 6.12228I$	0
$u = 0.27288 + 1.41137I$ $a = 2.55359 + 0.49150I$ $b = -2.89375 + 0.48625I$	$2.49560 - 9.21773I$	0
$u = 0.27288 - 1.41137I$ $a = 2.55359 - 0.49150I$ $b = -2.89375 - 0.48625I$	$2.49560 + 9.21773I$	0
$u = 0.11384 + 1.44409I$ $a = -1.88011 - 0.47011I$ $b = 2.46388 + 0.65654I$	$7.85404 + 2.62441I$	0
$u = 0.11384 - 1.44409I$ $a = -1.88011 + 0.47011I$ $b = 2.46388 - 0.65654I$	$7.85404 - 2.62441I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.28096 + 1.42230I$ $a = 2.01261 + 0.55638I$ $b = -2.69665 - 0.44481I$	$5.49300 - 11.79800I$	0
$u = 0.28096 - 1.42230I$ $a = 2.01261 - 0.55638I$ $b = -2.69665 + 0.44481I$	$5.49300 + 11.79800I$	0
$u = -0.27578 + 1.42573I$ $a = 2.79313 + 0.98533I$ $b = -3.16091 - 1.91717I$	$-2.33948 + 9.41935I$	0
$u = -0.27578 - 1.42573I$ $a = 2.79313 - 0.98533I$ $b = -3.16091 + 1.91717I$	$-2.33948 - 9.41935I$	0
$u = 0.17968 + 1.44599I$ $a = 1.255330 - 0.089450I$ $b = -1.69161 - 0.12091I$	$9.52465 - 3.04531I$	0
$u = 0.17968 - 1.44599I$ $a = 1.255330 + 0.089450I$ $b = -1.69161 + 0.12091I$	$9.52465 + 3.04531I$	0
$u = -0.13242 + 1.45194I$ $a = -0.68894 + 1.87780I$ $b = 0.70885 - 2.81549I$	$-0.261764 - 0.086646I$	0
$u = -0.13242 - 1.45194I$ $a = -0.68894 - 1.87780I$ $b = 0.70885 + 2.81549I$	$-0.261764 + 0.086646I$	0
$u = 0.24084 + 1.43911I$ $a = -1.43804 - 0.52544I$ $b = 1.83565 + 0.29596I$	$8.65874 - 6.43078I$	0
$u = 0.24084 - 1.43911I$ $a = -1.43804 + 0.52544I$ $b = 1.83565 - 0.29596I$	$8.65874 + 6.43078I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.30135 + 1.42773I$ $a = -2.83705 + 0.26025I$ $b = 3.29716 - 1.20217I$	$-0.3747 - 16.5437I$	0
$u = 0.30135 - 1.42773I$ $a = -2.83705 - 0.26025I$ $b = 3.29716 + 1.20217I$	$-0.3747 + 16.5437I$	0
$u = 0.07972 + 1.47696I$ $a = 1.09343 + 1.10864I$ $b = -1.27233 - 2.06372I$	$2.77556 + 6.92698I$	0
$u = 0.07972 - 1.47696I$ $a = 1.09343 - 1.10864I$ $b = -1.27233 + 2.06372I$	$2.77556 - 6.92698I$	0
$u = -0.517611$ $a = 4.21782$ $b = -2.35556$	-2.53998	-87.3520
$u = 0.323090 + 0.404159I$ $a = -0.870583 + 0.503536I$ $b = -0.938911 + 0.326913I$	$-0.442132 - 0.425306I$	$-11.54885 + 1.57345I$
$u = 0.323090 - 0.404159I$ $a = -0.870583 - 0.503536I$ $b = -0.938911 - 0.326913I$	$-0.442132 + 0.425306I$	$-11.54885 - 1.57345I$
$u = 0.22336 + 1.49048I$ $a = -0.84405 + 1.24122I$ $b = 1.00216 - 2.02573I$	$7.17979 - 5.45280I$	0
$u = 0.22336 - 1.49048I$ $a = -0.84405 - 1.24122I$ $b = 1.00216 + 2.02573I$	$7.17979 + 5.45280I$	0
$u = -0.391886$ $a = 0.753572$ $b = -0.538627$	-0.730054	-13.0620

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.246092 + 0.167191I$ $a = 1.31115 + 1.05386I$ $b = -0.719211 + 0.058991I$	$-0.764396 - 0.029182I$	$-11.62093 - 0.70639I$
$u = -0.246092 - 0.167191I$ $a = 1.31115 - 1.05386I$ $b = -0.719211 - 0.058991I$	$-0.764396 + 0.029182I$	$-11.62093 + 0.70639I$

II. $I_2^u = \langle b - u - 1,\ u^2 + a + u + 3,\ u^3 + 2u - 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 3u^2 + u + 2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.22670 + 1.46771I$ $a = -0.670516 - 0.802255I$ $b = \quad 0.77330 + 1.46771I$	$7.79580 + 5.13794I$	$-4.53505 - 0.52866I$
$u = -0.22670 - 1.46771I$ $a = -0.670516 + 0.802255I$ $b = \quad 0.77330 - 1.46771I$	$7.79580 - 5.13794I$	$-4.53505 + 0.52866I$
$u = \quad 0.453398$ $a = -3.65897$ $b = \quad 1.45340$	-2.43213	3.07010

III.

$\boldsymbol{I_3^u = \langle -u^2a - u^2 + b + u - 1,\ -u^2a + a^2 + 2au - u^2 - a + 2u - 3,\ u^3 - u^2 + 2u - 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 3u^2a + 3au + 4u^2 + u - 15$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.215080 + 1.307140I$ $a = -1.286800 - 0.397354I$ $b = 1.48511 - 0.80786I$	$-5.85852 - 2.82812I$	$-13.61882 - 1.93520I$
$u = 0.215080 + 1.307140I$ $a = 0.19428 - 1.65465I$ $b = -0.27003 + 2.11500I$	$2.03717 - 2.82812I$	$-12.9982 + 11.8301I$
$u = 0.215080 - 1.307140I$ $a = -1.286800 + 0.397354I$ $b = 1.48511 + 0.80786I$	$-5.85852 + 2.82812I$	$-13.61882 + 1.93520I$
$u = 0.215080 - 1.307140I$ $a = 0.19428 + 1.65465I$ $b = -0.27003 - 2.11500I$	$2.03717 + 2.82812I$	$-12.9982 - 11.8301I$
$u = 0.569840$ $a = -1.38856$ $b = 0.303987$	-2.10041	-16.8580
$u = 0.569840$ $a = 1.57360$ $b = 1.26585$	-9.99610	-8.90830

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.621744 + 0.440597I$ $a = 0.692440 + 0.318148I$ $b = 0.378256 + 0.440597I$	$1.64493 + 2.02988I$	$-8.92268 - 2.50966I$
$u = -0.621744 - 0.440597I$ $a = 0.692440 - 0.318148I$ $b = 0.378256 - 0.440597I$	$1.64493 - 2.02988I$	$-8.92268 + 2.50966I$
$u = 0.121744 + 1.306620I$ $a = -1.192440 - 0.547877I$ $b = 1.12174 + 1.30662I$	$1.64493 - 2.02988I$	$-14.5773 + 1.8205I$
$u = 0.121744 - 1.306620I$ $a = -1.192440 + 0.547877I$ $b = 1.12174 - 1.30662I$	$1.64493 + 2.02988I$	$-14.5773 - 1.8205I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_2	$((u-1)^7)(u^2+u-1)^3(u^{92}-11u^{91}+\cdots+10u+1)$
c_3	$u^7(u^2+u-1)^3(u^{92}+4u^{91}+\cdots-576u-128)$
c_4	$((u+1)^7)(u^2-u-1)^3(u^{92}-11u^{91}+\cdots+10u+1)$
c_5	$u^6(u^3+2u-1)(u^4+u^3+\cdots+2u+1)(u^{92}+2u^{91}+\cdots-352u-64)$
c_6	$u^7(u^2-u-1)^3(u^{92}+4u^{91}+\cdots-576u-128)$
c_7	$(u^2+u+1)^2(u^3-3u^2+5u-2)(u^3+u^2-1)^2$ $\cdot(u^{92}+4u^{91}+\cdots-228u+36)$
c_8	$(u^3+2u-1)(u^3-u^2+2u-1)^2(u^4+u^3+2u^2+2u+1)$ $\cdot(u^{92}-4u^{91}+\cdots-8u^2+1)$
c_9	$u^6(u^3+2u+1)(u^4-u^3+\cdots-2u+1)(u^{92}+2u^{91}+\cdots-352u-64)$
c_{10}	$(u^3+2u-1)(u^3+u^2-1)^2(u^4+u^3+2u^2+2u+1)$ $\cdot(u^{92}-20u^{91}+\cdots-102752u+13633)$
c_{11}, c_{12}	$(u^3+2u+1)(u^3+u^2+2u+1)^2(u^4-u^3+2u^2-2u+1)$ $\cdot(u^{92}-4u^{91}+\cdots-8u^2+1)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$((y-1)^7)(y^2-3y+1)^3(y^{92}-89y^{91}+\cdots-208y+1)$
c_3, c_6	$y^7(y^2-3y+1)^3(y^{92}-54y^{91}+\cdots-716800y+16384)$
c_5, c_9	$y^6(y^3+4y^2+4y-1)(y^4+3y^3+2y^2+1)$ $\cdot(y^{92}+42y^{91}+\cdots-25600y+4096)$
c_7	$(y^2+y+1)^2(y^3-y^2+2y-1)^2(y^3+y^2+13y-4)$ $\cdot(y^{92}+4y^{91}+\cdots+8856y+1296)$
c_8, c_{11}, c_{12}	$(y^3+3y^2+2y-1)^2(y^3+4y^2+4y-1)(y^4+3y^3+2y^2+1)$ $\cdot(y^{92}+84y^{91}+\cdots-16y+1)$
c_{10}	$(y^3-y^2+2y-1)^2(y^3+4y^2+4y-1)(y^4+3y^3+2y^2+1)$ $\cdot(y^{92}+28y^{91}+\cdots+10518208240y+185858689)$