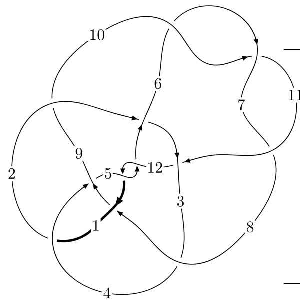
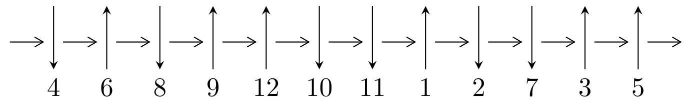
$12a_{0896}$ ($K12a_{0896}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -1.34885\times10^{51}u^{44} - 9.18014\times10^{50}u^{43} + \cdots + 1.51382\times10^{51}b + 5.69474\times10^{50},\ a-1,$$
$$u^{45} + u^{44} + \cdots + u^2 + 1\rangle$$
$$I_2^u = \langle -3.32331\times10^{380}u^{89} + 1.05242\times10^{381}u^{88} + \cdots + 6.08883\times10^{382}b + 3.39083\times10^{385},$$
$$4.71676\times10^{505}u^{89} - 6.33964\times10^{505}u^{88} + \cdots + 1.97874\times10^{507}a - 1.81413\times10^{510},$$
$$u^{90} + 16u^{88} + \cdots + 27804u + 13223\rangle$$
$$I_3^u = \langle -3.69959\times10^{18}u^{30} + 9.95612\times10^{17}u^{29} + \cdots + 5.38462\times10^{18}b - 7.23401\times10^{18},\ a+1,$$
$$u^{31} + 7u^{29} + \cdots + 5u - 1\rangle$$
$$I_4^u = \langle 4u^5 + 6u^4 - u^3 - 20u^2 + 7b + 2u + 1,\ 2u^5 + 3u^4 + 3u^3 - 3u^2 + 7a + u - 17,\ u^6 + u^5 - u^4 - 4u^3 + 3u^2 - 1\rangle$$
$$I_5^u = \langle -u^2 + b,\ a-1,\ u^3 - u^2 + 1\rangle$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 175 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. $I^u_1 = \langle -1.35 \times 10^{51} u^{44} - 9.18 \times 10^{50} u^{43} + \cdots + 1.51 \times 10^{51} b + 5.69 \times 10^{50},\ a - 1,\ u^{45} + u^{44} + \cdots + u^2 + 1 \rangle$

(i) Arc colorings

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

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

$$a_1 = \begin{pmatrix} 1 \\ 0.891028u^{44} + 0.606424u^{43} + \cdots + 1.18246u - 0.376185 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -0.891028u^{44} - 0.606424u^{43} + \cdots - 1.18246u + 1.37618 \\ 1.21699u^{44} + 0.887098u^{43} + \cdots + 2.07349u - 0.660788 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.637367u^{44} + 0.854223u^{43} + \cdots + 2.26087u + 0.274666 \\ -0.967895u^{44} - 1.55698u^{43} + \cdots - 3.27442u - 1.38255 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u \\ 0.284603u^{44} + 0.610564u^{43} + \cdots + 1.37618u + 0.891028 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.325961u^{44} + 0.280673u^{43} + \cdots + 0.891028u + 0.715397 \\ 0.0822486u^{44} + 0.0152712u^{43} + \cdots - 0.0512955u - 0.592079 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.891028u^{44} - 0.606424u^{43} + \cdots - 1.18246u + 1.37618 \\ 0.891028u^{44} + 0.606424u^{43} + \cdots + 1.18246u - 0.376185 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.513771u^{44} - 0.317623u^{43} + \cdots + 0.304119u - 2.06785 \\ -1.40480u^{44} - 0.288801u^{43} + \cdots - 1.48658u + 3.44403 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.547463u^{44} - 0.224911u^{43} + \cdots + 0.274234u + 0.710542 \\ 0.0683607u^{44} - 0.240991u^{43} + \cdots - 0.677215u - 0.00789983 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.0291410u^{44} + 0.0929449u^{43} + \cdots + 0.162826u + 0.628549 \\ -0.547462u^{44} - 0.504253u^{43} + \cdots - 1.14241u + 0.332842 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 1.86191u^{44} - 0.722513u^{43} + \cdots - 3.52946u - 9.43826$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{45} - 38u^{44} + \cdots + 6130u - 359$
c_2, c_{11}	$u^{45} + 10u^{43} + \cdots + 20u + 1$
c_3, c_9	$u^{45} - 2u^{44} + \cdots - 40u - 29$
c_4, c_8	$u^{45} - u^{44} + \cdots - u^2 - 1$
c_5, c_{12}	$u^{45} - 31u^{44} + \cdots - 294912u + 16384$
c_6, c_7, c_{10}	$u^{45} + 14u^{44} + \cdots - 2718u + 359$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{45} - 6y^{44} + \cdots + 2626096y - 128881$
c_2, c_{11}	$y^{45} + 20y^{44} + \cdots + 102y - 1$
c_3, c_9	$y^{45} - 32y^{44} + \cdots + 8212y - 841$
c_4, c_8	$y^{45} + 7y^{44} + \cdots - 2y - 1$
c_5, c_{12}	$y^{45} + 29y^{44} + \cdots + 2818572288y - 268435456$
c_6, c_7, c_{10}	$y^{45} - 48y^{44} + \cdots + 8215378y - 128881$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.564365 + 0.813191I$ $a = 1.00000$ $b = 1.43006 + 0.12131I$	$-10.06830 - 1.98394I$	$-8.02610 - 1.64389I$
$u = 0.564365 - 0.813191I$ $a = 1.00000$ $b = 1.43006 - 0.12131I$	$-10.06830 + 1.98394I$	$-8.02610 + 1.64389I$
$u = 0.861594 + 0.529697I$ $a = 1.00000$ $b = 0.545565 + 0.293703I$	$-2.87992 - 0.01145I$	$-0.21811 - 1.91159I$
$u = 0.861594 - 0.529697I$ $a = 1.00000$ $b = 0.545565 - 0.293703I$	$-2.87992 + 0.01145I$	$-0.21811 + 1.91159I$
$u = -0.886384 + 0.514640I$ $a = 1.00000$ $b = 0.184354 - 1.267760I$	$-7.90377 - 3.03475I$	$-5.38740 + 3.35696I$
$u = -0.886384 - 0.514640I$ $a = 1.00000$ $b = 0.184354 + 1.267760I$	$-7.90377 + 3.03475I$	$-5.38740 - 3.35696I$
$u = 0.520913 + 0.886886I$ $a = 1.00000$ $b = -0.095343 + 0.666527I$	$-2.31399 - 0.51377I$	$0.04847 + 2.37831I$
$u = 0.520913 - 0.886886I$ $a = 1.00000$ $b = -0.095343 - 0.666527I$	$-2.31399 + 0.51377I$	$0.04847 - 2.37831I$
$u = 1.04650$ $a = 1.00000$ $b = 0.642997$	-4.08586	0.408890
$u = 0.110876 + 0.934785I$ $a = 1.00000$ $b = 0.59974 + 1.58783I$	$-15.0174 + 9.5517I$	$-11.30337 - 5.82529I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.110876 - 0.934785I$ $a = 1.00000$ $b = 0.59974 - 1.58783I$	$-15.0174 - 9.5517I$	$-11.30337 + 5.82529I$
$u = -0.746442 + 0.758900I$ $a = 1.00000$ $b = 1.55978 - 0.32620I$	$-2.07357 - 2.36812I$	$-8.67698 + 3.34660I$
$u = -0.746442 - 0.758900I$ $a = 1.00000$ $b = 1.55978 + 0.32620I$	$-2.07357 + 2.36812I$	$-8.67698 - 3.34660I$
$u = -0.799306 + 0.819667I$ $a = 1.00000$ $b = 0.570328 - 0.772743I$	$1.29123 - 2.57191I$	$4.76466 + 2.68923I$
$u = -0.799306 - 0.819667I$ $a = 1.00000$ $b = 0.570328 + 0.772743I$	$1.29123 + 2.57191I$	$4.76466 - 2.68923I$
$u = -0.168001 + 0.797619I$ $a = 1.00000$ $b = 0.53691 - 1.68323I$	$-7.37427 - 6.32942I$	$-9.48603 + 7.78051I$
$u = -0.168001 - 0.797619I$ $a = 1.00000$ $b = 0.53691 + 1.68323I$	$-7.37427 + 6.32942I$	$-9.48603 - 7.78051I$
$u = 0.827483 + 0.858917I$ $a = 1.00000$ $b = 1.35844 + 0.46171I$	$-2.04447 + 8.65353I$	$-4.06807 - 10.54213I$
$u = 0.827483 - 0.858917I$ $a = 1.00000$ $b = 1.35844 - 0.46171I$	$-2.04447 - 8.65353I$	$-4.06807 + 10.54213I$
$u = -0.749281 + 0.254934I$ $a = 1.00000$ $b = 0.516102 + 0.768074I$	$-3.98822 + 3.85846I$	$-2.02148 - 3.79152I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.749281 - 0.254934I$ $a = 1.00000$ $b = 0.516102 - 0.768074I$	$-3.98822 - 3.85846I$	$-2.02148 + 3.79152I$
$u = -0.833708 + 0.928129I$ $a = 1.00000$ $b = 1.249040 - 0.390530I$	$-9.3721 - 13.0009I$	$-5.25647 + 8.83296I$
$u = -0.833708 - 0.928129I$ $a = 1.00000$ $b = 1.249040 + 0.390530I$	$-9.3721 + 13.0009I$	$-5.25647 - 8.83296I$
$u = 0.844710 + 0.937409I$ $a = 1.00000$ $b = 0.780518 + 1.119500I$	$-1.71437 + 6.73061I$	$1.80265 - 3.50880I$
$u = 0.844710 - 0.937409I$ $a = 1.00000$ $b = 0.780518 - 1.119500I$	$-1.71437 - 6.73061I$	$1.80265 + 3.50880I$
$u = -0.997302 + 0.850314I$ $a = 1.00000$ $b = 0.218571 - 1.335140I$	$-7.80196 - 2.75376I$	$-5.66454 + 2.70325I$
$u = -0.997302 - 0.850314I$ $a = 1.00000$ $b = 0.218571 + 1.335140I$	$-7.80196 + 2.75376I$	$-5.66454 - 2.70325I$
$u = 0.624390 + 0.272453I$ $a = 1.00000$ $b = 0.637919 - 0.583986I$	$1.80790 - 1.85836I$	$6.01405 + 4.43250I$
$u = 0.624390 - 0.272453I$ $a = 1.00000$ $b = 0.637919 + 0.583986I$	$1.80790 + 1.85836I$	$6.01405 - 4.43250I$
$u = -0.638144$ $a = 1.00000$ $b = 0.598650$	1.12382	8.76820

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.190746 + 0.607300I$ $a = 1.00000$ $b = 1.11113 - 1.73200I$	$-12.15650 + 4.47549I$	$-17.4373 - 6.8654I$
$u = 0.190746 - 0.607300I$ $a = 1.00000$ $b = 1.11113 + 1.73200I$	$-12.15650 - 4.47549I$	$-17.4373 + 6.8654I$
$u = -0.409456 + 0.405741I$ $a = 1.00000$ $b = 1.143850 + 0.374109I$	$0.413454 - 0.362124I$	$-0.08354 + 12.33091I$
$u = -0.409456 - 0.405741I$ $a = 1.00000$ $b = 1.143850 - 0.374109I$	$0.413454 + 0.362124I$	$-0.08354 - 12.33091I$
$u = 0.045222 + 0.572912I$ $a = 1.00000$ $b = 0.67501 + 2.05430I$	$-5.79288 + 0.97880I$	$-15.3278 - 7.0460I$
$u = 0.045222 - 0.572912I$ $a = 1.00000$ $b = 0.67501 - 2.05430I$	$-5.79288 - 0.97880I$	$-15.3278 + 7.0460I$
$u = -0.89373 + 1.26100I$ $a = 1.00000$ $b = 0.55988 - 1.53758I$	$-15.4401 - 4.9169I$	0
$u = -0.89373 - 1.26100I$ $a = 1.00000$ $b = 0.55988 + 1.53758I$	$-15.4401 + 4.9169I$	0
$u = 0.446498$ $a = 1.00000$ $b = -0.315894$	-1.26643	-7.40190
$u = 0.95420 + 1.27132I$ $a = 1.00000$ $b = 0.51075 + 1.57322I$	$-8.22182 + 9.30501I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.95420 - 1.27132I$ $a = 1.00000$ $b = 0.51075 - 1.57322I$	$-8.22182 - 9.30501I$	0
$u = -0.98146 + 1.29918I$ $a = 1.00000$ $b = 0.47604 - 1.55107I$	$-8.3468 - 14.9243I$	0
$u = -0.98146 - 1.29918I$ $a = 1.00000$ $b = 0.47604 + 1.55107I$	$-8.3468 + 14.9243I$	0
$u = 0.99315 + 1.32754I$ $a = 1.00000$ $b = 0.46850 + 1.52794I$	$-15.4174 + 18.9895I$	0
$u = 0.99315 - 1.32754I$ $a = 1.00000$ $b = 0.46850 - 1.52794I$	$-15.4174 - 18.9895I$	0

II. $\boldsymbol{I_2^u = \langle -3.32\times 10^{380}u^{89} + 1.05\times 10^{381}u^{88} + \cdots + 6.09\times 10^{382}b + 3.39\times 10^{385},\ 4.72\times 10^{505}u^{89} - 6.34\times 10^{505}u^{88} + \cdots + 1.98\times 10^{507}a - 1.81\times 10^{510},\ u^{90} + 16u^{88} + \cdots + 27804u + 13223\rangle}$

(i) Arc colorings

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

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

$$a_1 = \begin{pmatrix} -0.0238372u^{89} + 0.0320388u^{88} + \cdots + 1190.55u + 916.809 \\ 0.00545804u^{89} - 0.0172843u^{88} + \cdots - 1066.22u - 556.893 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -0.0179315u^{89} + 0.0355371u^{88} + \cdots + 1681.16u + 1050.05 \\ 0.00275467u^{89} - 0.0181637u^{88} + \cdots - 1241.58u - 603.151 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.0564612u^{89} - 0.0105856u^{88} + \cdots - 2999.25u - 587.000 \\ 0.0151156u^{89} + 0.00342591u^{88} + \cdots + 772.555u + 140.383 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.0777944u^{89} - 0.00696445u^{88} + \cdots - 3748.70u - 624.134 \\ 0.0209030u^{89} - 0.00163004u^{88} + \cdots + 743.221u + 54.5481 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.0413987u^{89} + 0.00457945u^{88} + \cdots + 1167.99u + 97.9233 \\ -0.0202129u^{89} + 0.0103608u^{88} + \cdots + 77.8237u + 311.014 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.0292952u^{89} + 0.0493231u^{88} + \cdots + 2256.77u + 1473.70 \\ 0.00545804u^{89} - 0.0172843u^{88} + \cdots - 1066.22u - 556.893 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.00638901u^{89} + 0.0283773u^{88} + \cdots + 1384.54u + 874.053 \\ 0.00226377u^{89} - 0.00747429u^{88} + \cdots - 475.892u - 245.530 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.0165806u^{89} - 0.0504084u^{88} + \cdots - 2216.94u - 1573.52 \\ -7.94570\times 10^{-6}u^{89} + 0.0145851u^{88} + \cdots + 696.480u + 472.656 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.00521884u^{89} + 0.0284894u^{88} + \cdots + 1162.49u + 850.729 \\ 0.0108268u^{89} - 0.0138182u^{88} + \cdots - 522.776u - 422.861 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.0576964u^{89} - 0.0343449u^{88} + \cdots + 67.3647u - 1298.54$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{15}+7u^{14}+\cdots+3u+2)^6$
c_2, c_{11}	$u^{90}-3u^{89}+\cdots+368583436u+40813519$
c_3, c_9	$u^{90}-30u^{88}+\cdots-482802778u+510990799$
c_4, c_8	$u^{90}+16u^{88}+\cdots-27804u+13223$
c_5, c_{12}	$(u^3+u^2+2u+1)^{30}$
c_6, c_7, c_{10}	$(u^{15}-2u^{14}+\cdots+2u-1)^6$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{15} - 3y^{14} + \cdots + 37y - 4)^6$
c_2, c_{11}	$y^{90} + 49y^{89} + \cdots + 40419511289995220y + 1665743333163361$
c_3, c_9	$y^{90} - 60y^{89} + \cdots - 8685965663911962662y + 261111596662658401$
c_4, c_8	$y^{90} + 32y^{89} + \cdots + 10436735834y + 174847729$
c_5, c_{12}	$(y^3 + 3y^2 + 2y - 1)^{30}$
c_6, c_7, c_{10}	$(y^{15} - 16y^{14} + \cdots + 10y - 1)^6$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.450793 + 0.892322I$ $a = -0.083499 + 0.394491I$ $b = -0.215080 - 1.307140I$	$-8.77242 - 3.24501I$	0
$u = -0.450793 - 0.892322I$ $a = -0.083499 - 0.394491I$ $b = -0.215080 + 1.307140I$	$-8.77242 + 3.24501I$	0
$u = -0.617369 + 0.794033I$ $a = 0.381707 - 1.140980I$ $b = -0.569840$	$-2.56985 - 2.66927I$	0
$u = -0.617369 - 0.794033I$ $a = 0.381707 + 1.140980I$ $b = -0.569840$	$-2.56985 + 2.66927I$	0
$u = 0.743863 + 0.683033I$ $a = 0.097393 + 1.311270I$ $b = -0.569840$	$-9.52410 + 6.60915I$	0
$u = 0.743863 - 0.683033I$ $a = 0.097393 - 1.311270I$ $b = -0.569840$	$-9.52410 - 6.60915I$	0
$u = 0.889484 + 0.425134I$ $a = -0.156501 - 0.638037I$ $b = -0.215080 - 1.307140I$	$-3.40947 - 0.77561I$	0
$u = 0.889484 - 0.425134I$ $a = -0.156501 + 0.638037I$ $b = -0.215080 + 1.307140I$	$-3.40947 + 0.77561I$	0
$u = -0.067727 + 0.935174I$ $a = 1.34010 + 1.55198I$ $b = -0.215080 - 1.307140I$	$-13.6617 - 3.7810I$	0
$u = -0.067727 - 0.935174I$ $a = 1.34010 - 1.55198I$ $b = -0.215080 + 1.307140I$	$-13.6617 + 3.7810I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.449921 + 0.963859I$ $a = -0.980503 - 0.235140I$ $b = -0.569840$	$-1.94719 - 3.90370I$	0
$u = -0.449921 - 0.963859I$ $a = -0.980503 + 0.235140I$ $b = -0.569840$	$-1.94719 + 3.90370I$	0
$u = 0.918363 + 0.551105I$ $a = -0.185150 - 0.199254I$ $b = -0.569840$	$-1.152450 + 0.239040I$	0
$u = 0.918363 - 0.551105I$ $a = -0.185150 + 0.199254I$ $b = -0.569840$	$-1.152450 - 0.239040I$	0
$u = 0.667791 + 0.839271I$ $a = -0.964419 - 0.231283I$ $b = -0.569840$	$-1.94719 + 3.90370I$	0
$u = 0.667791 - 0.839271I$ $a = -0.964419 + 0.231283I$ $b = -0.569840$	$-1.94719 - 3.90370I$	0
$u = -0.240440 + 0.893607I$ $a = -1.93250 - 0.64358I$ $b = -0.215080 + 1.307140I$	$-13.14860 - 2.82812I$	0
$u = -0.240440 - 0.893607I$ $a = -1.93250 + 0.64358I$ $b = -0.215080 - 1.307140I$	$-13.14860 + 2.82812I$	0
$u = -0.343833 + 0.825774I$ $a = -0.704493 + 0.709711I$ $b = -0.569840$	-9.01101	0
$u = -0.343833 - 0.825774I$ $a = -0.704493 - 0.709711I$ $b = -0.569840$	-9.01101	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.894446+0.671691I$ $a=-1.53052+0.76645I$ $b=-0.215080+1.307140I$	$-3.40947-6.43185I$	0
$u=-0.894446-0.671691I$ $a=-1.53052-0.76645I$ $b=-0.215080-1.307140I$	$-3.40947+6.43185I$	0
$u=-0.737965+0.864959I$ $a=-0.940659+0.405639I$ $b=-0.569840$	$-8.34415-4.54595I$	0
$u=-0.737965-0.864959I$ $a=-0.940659-0.405639I$ $b=-0.569840$	$-8.34415+4.54595I$	0
$u=-0.226624+1.137730I$ $a=-0.673885+0.049576I$ $b=-0.215080+1.307140I$	$-6.08478+1.07558I$	0
$u=-0.226624-1.137730I$ $a=-0.673885-0.049576I$ $b=-0.215080-1.307140I$	$-6.08478-1.07558I$	0
$u=\ \ 0.343312+1.112980I$ $a=-0.896393+0.386550I$ $b=-0.569840$	$-8.34415+4.54595I$	0
$u=\ \ 0.343312-1.112980I$ $a=-0.896393-0.386550I$ $b=-0.569840$	$-8.34415-4.54595I$	0
$u=-0.675478+0.482146I$ $a=-1.56017+0.55469I$ $b=-0.569840$	$-4.63484-6.07313I$	0
$u=-0.675478-0.482146I$ $a=-1.56017-0.55469I$ $b=-0.569840$	$-4.63484+6.07313I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.670320 + 1.007490I$ $a = 0.263695 + 0.788224I$ $b = -0.569840$	$-2.56985 - 2.66927I$	0
$u = 0.670320 - 1.007490I$ $a = 0.263695 - 0.788224I$ $b = -0.569840$	$-2.56985 + 2.66927I$	0
$u = 0.096315 + 0.777932I$ $a = -1.47594 + 0.10858I$ $b = -0.215080 - 1.307140I$	$-6.08478 - 1.07558I$	0
$u = 0.096315 - 0.777932I$ $a = -1.47594 - 0.10858I$ $b = -0.215080 + 1.307140I$	$-6.08478 + 1.07558I$	0
$u = 0.125972 + 0.769406I$ $a = 2.07233 - 1.72737I$ $b = -0.215080 + 1.307140I$	$-6.70744 - 0.15885I$	0
$u = 0.125972 - 0.769406I$ $a = 2.07233 + 1.72737I$ $b = -0.215080 - 1.307140I$	$-6.70744 + 0.15885I$	0
$u = 0.491223 + 0.602213I$ $a = -2.75042 - 0.20746I$ $b = -0.215080 - 1.307140I$	$-5.29004 + 3.06716I$	0
$u = 0.491223 - 0.602213I$ $a = -2.75042 + 0.20746I$ $b = -0.215080 + 1.307140I$	$-5.29004 - 3.06716I$	0
$u = -0.013207 + 0.748305I$ $a = -1.91042 - 0.26991I$ $b = -0.215080 + 1.307140I$	$-12.48170 + 1.71783I$	0
$u = -0.013207 - 0.748305I$ $a = -1.91042 + 0.26991I$ $b = -0.215080 - 1.307140I$	$-12.48170 - 1.71783I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.864777 + 0.967206I$ $a = -0.474007 - 0.033892I$ $b = -0.569840$	$0.72812 - 3.60373I$	0
$u = -0.864777 - 0.967206I$ $a = -0.474007 + 0.033892I$ $b = -0.569840$	$0.72812 + 3.60373I$	0
$u = -0.823191 + 1.041930I$ $a = 0.056332 - 0.758438I$ $b = -0.569840$	$-9.52410 + 6.60915I$	0
$u = -0.823191 - 1.041930I$ $a = 0.056332 + 0.758438I$ $b = -0.569840$	$-9.52410 - 6.60915I$	0
$u = -0.025786 + 0.651575I$ $a = 2.24023 + 2.69442I$ $b = -0.215080 - 1.307140I$	$-6.70744 + 5.49740I$	$-13.1635 - 7.8232I$
$u = -0.025786 - 0.651575I$ $a = 2.24023 - 2.69442I$ $b = -0.215080 + 1.307140I$	$-6.70744 - 5.49740I$	$-13.1635 + 7.8232I$
$u = 0.132046 + 0.634057I$ $a = -0.36262 - 1.47836I$ $b = -0.215080 + 1.307140I$	$-3.40947 + 0.77561I$	$0. - 4.54523I$
$u = 0.132046 - 0.634057I$ $a = -0.36262 + 1.47836I$ $b = -0.215080 - 1.307140I$	$-3.40947 - 0.77561I$	$0. + 4.54523I$
$u = -0.078402 + 0.638322I$ $a = 1.63347 - 3.13438I$ $b = -0.215080 + 1.307140I$	$-13.6617 - 9.4373I$	$-12.6504 + 8.6739I$
$u = -0.078402 - 0.638322I$ $a = 1.63347 + 3.13438I$ $b = -0.215080 - 1.307140I$	$-13.6617 + 9.4373I$	$-12.6504 - 8.6739I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.786420 + 1.126910I$ $a = -0.569028 + 0.202308I$ $b = -0.569840$	$-4.63484 + 6.07313I$	0
$u = 0.786420 - 1.126910I$ $a = -0.569028 - 0.202308I$ $b = -0.569840$	$-4.63484 - 6.07313I$	0
$u = 0.442691 + 0.429154I$ $a = -2.09894 - 0.15007I$ $b = -0.569840$	$0.72812 + 3.60373I$	$6.57622 - 7.52468I$
$u = 0.442691 - 0.429154I$ $a = -2.09894 + 0.15007I$ $b = -0.569840$	$0.72812 - 3.60373I$	$6.57622 + 7.52468I$
$u = 0.152739 + 0.594127I$ $a = -2.35997 + 1.77116I$ $b = -0.215080 - 1.307140I$	$-5.29004 + 2.58908I$	$-11.14999 + 0.51999I$
$u = 0.152739 - 0.594127I$ $a = -2.35997 - 1.77116I$ $b = -0.215080 + 1.307140I$	$-5.29004 - 2.58908I$	$-11.14999 - 0.51999I$
$u = -0.568197 + 1.287040I$ $a = -1.267700 - 0.428387I$ $b = -0.215080 + 1.307140I$	$-12.4817 - 7.3741I$	0
$u = -0.568197 - 1.287040I$ $a = -1.267700 + 0.428387I$ $b = -0.215080 - 1.307140I$	$-12.4817 + 7.3741I$	0
$u = 1.20106 + 0.74724I$ $a = -1.016280 - 0.705009I$ $b = -0.215080 - 1.307140I$	$-8.77242 + 8.90126I$	0
$u = 1.20106 - 0.74724I$ $a = -1.016280 + 0.705009I$ $b = -0.215080 + 1.307140I$	$-8.77242 - 8.90126I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.22721 + 1.42601I$ $a = -0.513202 - 0.072507I$ $b = -0.215080 - 1.307140I$	$-12.48170 - 1.71783I$	0
$u = 0.22721 - 1.42601I$ $a = -0.513202 + 0.072507I$ $b = -0.215080 + 1.307140I$	$-12.48170 + 1.71783I$	0
$u = 0.72157 + 1.25200I$ $a = -1.172060 + 0.201299I$ $b = -0.215080 - 1.307140I$	$-6.08478 + 6.73182I$	0
$u = 0.72157 - 1.25200I$ $a = -1.172060 - 0.201299I$ $b = -0.215080 + 1.307140I$	$-6.08478 - 6.73182I$	0
$u = -0.314372 + 0.252342I$ $a = -0.51354 + 2.42621I$ $b = -0.215080 + 1.307140I$	$-8.77242 + 3.24501I$	$-5.19749 - 3.94232I$
$u = -0.314372 - 0.252342I$ $a = -0.51354 - 2.42621I$ $b = -0.215080 - 1.307140I$	$-8.77242 - 3.24501I$	$-5.19749 + 3.94232I$
$u = -0.060224 + 0.285025I$ $a = -2.50261 - 2.69326I$ $b = -0.569840$	$-1.152450 - 0.239040I$	$-4.62073 + 3.49944I$
$u = -0.060224 - 0.285025I$ $a = -2.50261 + 2.69326I$ $b = -0.569840$	$-1.152450 + 0.239040I$	$-4.62073 - 3.49944I$
$u = -1.09775 + 1.32216I$ $a = -0.828754 + 0.142338I$ $b = -0.215080 + 1.307140I$	$-6.08478 - 6.73182I$	0
$u = -1.09775 - 1.32216I$ $a = -0.828754 - 0.142338I$ $b = -0.215080 - 1.307140I$	$-6.08478 + 6.73182I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.69380 + 1.60616I$ $a = -0.664295 - 0.460833I$ $b = -0.215080 + 1.307140I$	$-8.77242 - 8.90126I$	0
$u = -0.69380 - 1.60616I$ $a = -0.664295 + 0.460833I$ $b = -0.215080 - 1.307140I$	$-8.77242 + 8.90126I$	0
$u = -1.41275 + 1.13160I$ $a = -0.271059 + 0.203430I$ $b = -0.215080 + 1.307140I$	$-5.29004 - 2.58908I$	0
$u = -1.41275 - 1.13160I$ $a = -0.271059 - 0.203430I$ $b = -0.215080 - 1.307140I$	$-5.29004 + 2.58908I$	0
$u = 1.27165 + 1.38817I$ $a = -0.707985 - 0.239246I$ $b = -0.215080 - 1.307140I$	$-12.4817 + 7.3741I$	0
$u = 1.27165 - 1.38817I$ $a = -0.707985 + 0.239246I$ $b = -0.215080 + 1.307140I$	$-12.4817 - 7.3741I$	0
$u = 1.03976 + 1.57215I$ $a = -0.465804 - 0.155127I$ $b = -0.215080 - 1.307140I$	$-13.14860 + 2.82812I$	0
$u = 1.03976 - 1.57215I$ $a = -0.465804 + 0.155127I$ $b = -0.215080 + 1.307140I$	$-13.14860 - 2.82812I$	0
$u = 0.85415 + 1.71359I$ $a = -0.522372 + 0.261593I$ $b = -0.215080 - 1.307140I$	$-3.40947 + 6.43185I$	0
$u = 0.85415 - 1.71359I$ $a = -0.522372 - 0.261593I$ $b = -0.215080 + 1.307140I$	$-3.40947 - 6.43185I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.54214 + 1.14812I$ $a = 0.318729 - 0.369121I$ $b = -0.215080 - 1.307140I$	$-13.6617 - 3.7810I$	0
$u = -1.54214 - 1.14812I$ $a = 0.318729 + 0.369121I$ $b = -0.215080 + 1.307140I$	$-13.6617 + 3.7810I$	0
$u = 1.59010 + 1.37686I$ $a = 0.284725 + 0.237330I$ $b = -0.215080 + 1.307140I$	$-6.70744 - 0.15885I$	0
$u = 1.59010 - 1.37686I$ $a = 0.284725 - 0.237330I$ $b = -0.215080 - 1.307140I$	$-6.70744 + 0.15885I$	0
$u = -1.22614 + 1.75825I$ $a = -0.361524 - 0.027269I$ $b = -0.215080 + 1.307140I$	$-5.29004 - 3.06716I$	0
$u = -1.22614 - 1.75825I$ $a = -0.361524 + 0.027269I$ $b = -0.215080 - 1.307140I$	$-5.29004 + 3.06716I$	0
$u = 1.87268 + 1.28842I$ $a = 0.130755 + 0.250899I$ $b = -0.215080 + 1.307140I$	$-13.6617 - 9.4373I$	0
$u = 1.87268 - 1.28842I$ $a = 0.130755 - 0.250899I$ $b = -0.215080 - 1.307140I$	$-13.6617 + 9.4373I$	0
$u = -1.81338 + 1.39020I$ $a = 0.182451 - 0.219442I$ $b = -0.215080 - 1.307140I$	$-6.70744 + 5.49740I$	0
$u = -1.81338 - 1.39020I$ $a = 0.182451 + 0.219442I$ $b = -0.215080 + 1.307140I$	$-6.70744 - 5.49740I$	0

III. $I_3^u = \langle -3.70\times 10^{18}u^{30} + 9.96\times 10^{17}u^{29} + \cdots + 5.38\times 10^{18}b - 7.23\times 10^{18},\ a+1,\ u^{31} + 7u^{29} + \cdots + 5u - 1\rangle$

(i) Arc colorings

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

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

$$a_1 = \begin{pmatrix} -1 \\ 0.687066u^{30} - 0.184899u^{29} + \cdots - 2.25076u + 1.34346 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -0.687066u^{30} + 0.184899u^{29} + \cdots + 2.25076u - 2.34346 \\ 1.01508u^{30} - 0.316079u^{29} + \cdots - 3.86233u + 1.52836 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.273150u^{30} - 0.129280u^{29} + \cdots + 1.26711u - 0.892808 \\ 0.199034u^{30} + 0.563048u^{29} + \cdots + 1.19801u + 0.0764620 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u \\ -0.184899u^{30} - 0.328012u^{29} + \cdots - 1.09187u + 0.687066 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.328012u^{30} + 0.131179u^{29} + \cdots + 1.61156u + 0.815101 \\ 0.173470u^{30} - 0.176685u^{29} + \cdots - 0.510970u - 0.141970 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.687066u^{30} + 0.184899u^{29} + \cdots + 2.25076u - 2.34346 \\ 0.687066u^{30} - 0.184899u^{29} + \cdots - 2.25076u + 1.34346 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.861767u^{30} + 0.195690u^{29} + \cdots + 2.88366u + 2.22327 \\ -0.174701u^{30} - 0.380589u^{29} + \cdots - 5.13442u + 0.120186 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.917103u^{30} + 0.102366u^{29} + \cdots + 2.22586u - 3.15296 \\ 0.549174u^{30} - 0.178950u^{29} + \cdots - 2.95367u + 1.59945 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.976443u^{30} - 0.107241u^{29} + \cdots - 0.0258383u + 2.19375 \\ -0.429849u^{30} + 0.244613u^{29} + \cdots + 0.837359u - 0.645111 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{796042686367841452}{1076924491171495217}u^{30} - \frac{124597577081519071}{1076924491171495217}u^{29} + \cdots - \frac{4509135594763592556}{1076924491171495217}u - \frac{8475131366304178091}{1076924491171495217}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{31} - 17u^{30} + \cdots - 675u + 125$
c_2, c_{11}	$u^{31} + u^{30} + \cdots + 5u + 1$
c_3, c_9	$u^{31} - u^{30} + \cdots + 9u - 5$
c_4, c_8	$u^{31} + 7u^{29} + \cdots + 5u - 1$
c_5	$u^{31} + 3u^{30} + \cdots - 11u - 1$
c_6, c_7	$u^{31} + 7u^{30} + \cdots - 7u - 1$
c_{10}	$u^{31} - 7u^{30} + \cdots - 7u + 1$
c_{12}	$u^{31} - 3u^{30} + \cdots - 11u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{31} - 3y^{30} + \cdots + 66875y - 15625$
c_2, c_{11}	$y^{31} + 15y^{30} + \cdots - 19y - 1$
c_3, c_9	$y^{31} - 21y^{30} + \cdots + 271y - 25$
c_4, c_8	$y^{31} + 14y^{30} + \cdots + 29y - 1$
c_5, c_{12}	$y^{31} + 29y^{30} + \cdots - 49y - 1$
c_6, c_7, c_{10}	$y^{31} - 33y^{30} + \cdots + 17y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.648286 + 0.754489I$ $a = -1.00000$ $b = -1.174450 + 0.065990I$	$-1.06960 - 2.52573I$	$-0.97289 + 4.21055I$
$u = -0.648286 - 0.754489I$ $a = -1.00000$ $b = -1.174450 - 0.065990I$	$-1.06960 + 2.52573I$	$-0.97289 - 4.21055I$
$u = -0.717224 + 0.669825I$ $a = -1.00000$ $b = 0.257971 + 1.326830I$	$-5.78468 + 5.10779I$	$-3.55866 - 4.23910I$
$u = -0.717224 - 0.669825I$ $a = -1.00000$ $b = 0.257971 - 1.326830I$	$-5.78468 - 5.10779I$	$-3.55866 + 4.23910I$
$u = 0.567412 + 0.860698I$ $a = -1.00000$ $b = -0.134089 + 0.259707I$	$-5.81103 + 5.95428I$	$-7.31020 - 6.20707I$
$u = 0.567412 - 0.860698I$ $a = -1.00000$ $b = -0.134089 - 0.259707I$	$-5.81103 - 5.95428I$	$-7.31020 + 6.20707I$
$u = 0.834900 + 0.622023I$ $a = -1.00000$ $b = 0.273119 - 1.277200I$	$-12.7318 - 8.6679I$	$-6.18088 + 3.52393I$
$u = 0.834900 - 0.622023I$ $a = -1.00000$ $b = 0.273119 + 1.277200I$	$-12.7318 + 8.6679I$	$-6.18088 - 3.52393I$
$u = -0.511967 + 0.908761I$ $a = -1.00000$ $b = -0.098130 + 0.143148I$	$-0.40464 - 3.63769I$	$-2.30641 + 7.43260I$
$u = -0.511967 - 0.908761I$ $a = -1.00000$ $b = -0.098130 - 0.143148I$	$-0.40464 + 3.63769I$	$-2.30641 - 7.43260I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.158913 + 0.892932I$ $a = -1.00000$ $b = -0.551228 + 1.110630I$	$-10.39450 + 2.88170I$	$-11.38413 - 2.82306I$
$u = 0.158913 - 0.892932I$ $a = -1.00000$ $b = -0.551228 - 1.110630I$	$-10.39450 - 2.88170I$	$-11.38413 + 2.82306I$
$u = 0.316469 + 0.849402I$ $a = -1.00000$ $b = -0.050130 - 1.355780I$	$-5.24998 - 0.51758I$	$-4.94219 - 0.74761I$
$u = 0.316469 - 0.849402I$ $a = -1.00000$ $b = -0.050130 + 1.355780I$	$-5.24998 + 0.51758I$	$-4.94219 + 0.74761I$
$u = 0.454331 + 1.060200I$ $a = -1.00000$ $b = 0.207848 - 0.647004I$	$-2.85285 - 0.21028I$	$-11.80650 - 3.51427I$
$u = 0.454331 - 1.060200I$ $a = -1.00000$ $b = 0.207848 + 0.647004I$	$-2.85285 + 0.21028I$	$-11.80650 + 3.51427I$
$u = -0.324813 + 1.152260I$ $a = -1.00000$ $b = -0.121376 + 1.089130I$	$-11.90770 - 0.54038I$	$-10.95038 + 0.86090I$
$u = -0.324813 - 1.152260I$ $a = -1.00000$ $b = -0.121376 - 1.089130I$	$-11.90770 + 0.54038I$	$-10.95038 - 0.86090I$
$u = 0.825735 + 0.973090I$ $a = -1.00000$ $b = -0.909947 - 0.952241I$	$-2.37016 + 7.01319I$	$-8.52027 - 7.50036I$
$u = 0.825735 - 0.973090I$ $a = -1.00000$ $b = -0.909947 + 0.952241I$	$-2.37016 - 7.01319I$	$-8.52027 + 7.50036I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.374801 + 0.583539I$ $a = -1.00000$ $b = 0.16632 - 1.61798I$	$-5.28116 - 0.41038I$	$-5.11571 - 1.35653I$
$u = 0.374801 - 0.583539I$ $a = -1.00000$ $b = 0.16632 + 1.61798I$	$-5.28116 + 0.41038I$	$-5.11571 + 1.35653I$
$u = -0.530463 + 0.248412I$ $a = -1.00000$ $b = 0.70417 + 1.37721I$	$-11.44770 - 4.22530I$	$-6.25593 + 2.96955I$
$u = -0.530463 - 0.248412I$ $a = -1.00000$ $b = 0.70417 - 1.37721I$	$-11.44770 + 4.22530I$	$-6.25593 - 2.96955I$
$u = -0.83545 + 1.30181I$ $a = -1.00000$ $b = -0.248311 + 1.201430I$	$-11.50640 - 6.10842I$	$-8.18083 + 3.25324I$
$u = -0.83545 - 1.30181I$ $a = -1.00000$ $b = -0.248311 - 1.201430I$	$-11.50640 + 6.10842I$	$-8.18083 - 3.25324I$
$u = 0.90195 + 1.26479I$ $a = -1.00000$ $b = -0.230613 - 1.306900I$	$-5.51611 + 6.41525I$	$-0.53175 - 3.38483I$
$u = 0.90195 - 1.26479I$ $a = -1.00000$ $b = -0.230613 + 1.306900I$	$-5.51611 - 6.41525I$	$-0.53175 + 3.38483I$
$u = -0.94996 + 1.26460I$ $a = -1.00000$ $b = -0.141674 + 1.331080I$	$-9.75201 - 7.20993I$	$-8.34427 + 4.81835I$
$u = -0.94996 - 1.26460I$ $a = -1.00000$ $b = -0.141674 - 1.331080I$	$-9.75201 + 7.20993I$	$-8.34427 - 4.81835I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.167328$ $a = -1.00000$ $b = 1.10105$	0.188948	−9.27800

IV. $\boldsymbol{I^u_4 = \langle 4u^5 + 6u^4 - u^3 - 20u^2 + 7b + 2u + 1,\ 2u^5 + 3u^4 + 3u^3 - 3u^2 + 7a + u - 17,\ u^6 + u^5 - u^4 - 4u^3 + 3u^2 - 1\rangle}$

(i) Arc colorings

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

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

$$a_1 = \begin{pmatrix} -\frac{2}{7}u^5 - \frac{3}{7}u^4 + \cdots - \frac{1}{7}u + \frac{17}{7} \\ -\frac{4}{7}u^5 - \frac{6}{7}u^4 + \cdots - \frac{2}{7}u - \frac{1}{7} \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -\frac{2}{7}u^5 - \frac{3}{7}u^4 + \cdots - \frac{1}{7}u + \frac{17}{7} \\ -\frac{4}{7}u^5 - \frac{6}{7}u^4 + \cdots - \frac{2}{7}u - \frac{1}{7} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} \frac{3}{7}u^5 + \frac{15}{7}u^4 + \cdots - \frac{44}{7}u + \frac{6}{7} \\ \frac{6}{7}u^5 + \frac{9}{7}u^4 + \cdots + \frac{10}{7}u + \frac{12}{7} \end{pmatrix}$$

$$a_8 = \begin{pmatrix} \frac{3}{7}u^5 + \frac{15}{7}u^4 + \cdots - \frac{44}{7}u + \frac{6}{7} \\ \frac{6}{7}u^5 + \frac{9}{7}u^4 + \cdots + \frac{10}{7}u + \frac{12}{7} \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -\frac{12}{7}u^5 - \frac{18}{7}u^4 + \cdots - \frac{6}{7}u + \frac{4}{7} \\ -\frac{3}{7}u^5 - \frac{1}{7}u^4 + \cdots - \frac{12}{7}u - \frac{6}{7} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} \frac{2}{7}u^5 + \frac{3}{7}u^4 + \cdots + \frac{1}{7}u + \frac{18}{7} \\ -\frac{4}{7}u^5 - \frac{6}{7}u^4 + \cdots - \frac{2}{7}u - \frac{1}{7} \end{pmatrix}$$

$$a_6 = \begin{pmatrix} \frac{9}{7}u^5 + \frac{17}{7}u^4 + \cdots - \frac{6}{7}u + \frac{4}{7} \\ \frac{3}{7}u^5 + \frac{1}{7}u^4 + \cdots + \frac{12}{7}u + \frac{6}{7} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{9}{7}u^5 - \frac{17}{7}u^4 + \cdots + \frac{6}{7}u - \frac{4}{7} \\ -\frac{3}{7}u^5 - \frac{1}{7}u^4 + \cdots - \frac{12}{7}u - \frac{6}{7} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} \frac{12}{7}u^5 + \frac{32}{7}u^4 + \cdots - \frac{50}{7}u + \frac{10}{7} \\ \frac{9}{7}u^5 + \frac{10}{7}u^4 + \cdots + \frac{22}{7}u + \frac{18}{7} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{4}{7}u^5 + \frac{20}{7}u^4 + \frac{20}{7}u^3 - \frac{20}{7}u^2 - \frac{40}{7}u + \frac{43}{7}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	y^6
c_2, c_{11}	$(y^3 - y^2 + 2y - 1)^2$
c_3, c_4, c_8 c_9	$y^6 - 3y^5 + 15y^4 - 24y^3 + 11y^2 - 6y + 1$
c_5, c_{12}	$(y^3 + 3y^2 + 2y - 1)^2$
c_6, c_7, c_{10}	$(y - 1)^6$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.22142$ $a = 0.381966$ $b = 0.569840$	-0.531480	8.01950
$u = 0.542287 + 0.460350I$ $a = 2.61803$ $b = 0.215080 + 1.307140I$	$-4.66906 + 2.82812I$	$1.49024 - 2.97945I$
$u = 0.542287 - 0.460350I$ $a = 2.61803$ $b = 0.215080 - 1.307140I$	$-4.66906 - 2.82812I$	$1.49024 + 2.97945I$
$u = -0.466540$ $a = 2.61803$ $b = 0.569840$	-0.531480	8.01950
$u = -1.41973 + 1.20521I$ $a = 0.381966$ $b = 0.215080 - 1.307140I$	$-4.66906 - 2.82812I$	$1.49024 + 2.97945I$
$u = -1.41973 - 1.20521I$ $a = 0.381966$ $b = 0.215080 + 1.307140I$	$-4.66906 + 2.82812I$	$1.49024 - 2.97945I$

V. $I_5^u = \langle -u^2 + b,\ a - 1,\ u^3 - u^2 + 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u + 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.877439 + 0.744862I$ $a = 1.00000$ $b = 0.215080 + 1.307140I$	$-3.02413 + 2.82812I$	$2.49024 - 2.97945I$
$u = 0.877439 - 0.744862I$ $a = 1.00000$ $b = 0.215080 - 1.307140I$	$-3.02413 - 2.82812I$	$2.49024 + 2.97945I$
$u = -0.754878$ $a = 1.00000$ $b = 0.569840$	1.11345	9.01950

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^9(u^{15}+7u^{14}+\cdots+3u+2)^6(u^{31}-17u^{30}+\cdots-675u+125)$ $\cdot(u^{45}-38u^{44}+\cdots+6130u-359)$
c_2, c_{11}	$((u^3-u^2+1)^2)(u^3+u^2-1)(u^{31}+u^{30}+\cdots+5u+1)$ $\cdot(u^{45}+10u^{43}+\cdots+20u+1)$ $\cdot(u^{90}-3u^{89}+\cdots+368583436u+40813519)$
c_3, c_9	$(u^3+u^2-1)(u^6+u^5+\cdots+3u^2-1)(u^{31}-u^{30}+\cdots+9u-5)$ $\cdot(u^{45}-2u^{44}+\cdots-40u-29)$ $\cdot(u^{90}-30u^{88}+\cdots-482802778u+510990799)$
c_4, c_8	$(u^3+u^2-1)(u^6+u^5+\cdots+3u^2-1)(u^{31}+7u^{29}+\cdots+5u-1)$ $\cdot(u^{45}-u^{44}+\cdots-u^2-1)(u^{90}+16u^{88}+\cdots-27804u+13223)$
c_5	$((u^3-u^2+2u-1)^3)(u^3+u^2+2u+1)^{30}(u^{31}+3u^{30}+\cdots-11u-1)$ $\cdot(u^{45}-31u^{44}+\cdots-294912u+16384)$
c_6, c_7	$u^3(u-1)^6(u^{15}-2u^{14}+\cdots+2u-1)^6(u^{31}+7u^{30}+\cdots-7u-1)$ $\cdot(u^{45}+14u^{44}+\cdots-2718u+359)$
c_{10}	$u^3(u+1)^6(u^{15}-2u^{14}+\cdots+2u-1)^6(u^{31}-7u^{30}+\cdots-7u+1)$ $\cdot(u^{45}+14u^{44}+\cdots-2718u+359)$
c_{12}	$(u^3-u^2+2u-1)(u^3+u^2+2u+1)^{32}(u^{31}-3u^{30}+\cdots-11u+1)$ $\cdot(u^{45}-31u^{44}+\cdots-294912u+16384)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^9(y^{15}-3y^{14}+\cdots+37y-4)^6(y^{31}-3y^{30}+\cdots+66875y-15625)$ $\cdot(y^{45}-6y^{44}+\cdots+2626096y-128881)$
c_2, c_{11}	$((y^3-y^2+2y-1)^3)(y^{31}+15y^{30}+\cdots-19y-1)$ $\cdot(y^{45}+20y^{44}+\cdots+102y-1)$ $\cdot(y^{90}+49y^{89}+\cdots+40419511289995220y+1665743333163361)$
c_3, c_9	$(y^3-y^2+2y-1)(y^6-3y^5+15y^4-24y^3+11y^2-6y+1)$ $\cdot(y^{31}-21y^{30}+\cdots+271y-25)(y^{45}-32y^{44}+\cdots+8212y-841)$ $\cdot(y^{90}-60y^{89}+\cdots-8685965663911962662y+261111596662658401)$
c_4, c_8	$(y^3-y^2+2y-1)(y^6-3y^5+15y^4-24y^3+11y^2-6y+1)$ $\cdot(y^{31}+14y^{30}+\cdots+29y-1)(y^{45}+7y^{44}+\cdots-2y-1)$ $\cdot(y^{90}+32y^{89}+\cdots+10436735834y+174847729)$
c_5, c_{12}	$((y^3+3y^2+2y-1)^{33})(y^{31}+29y^{30}+\cdots-49y-1)$ $\cdot(y^{45}+29y^{44}+\cdots+2818572288y-268435456)$
c_6, c_7, c_{10}	$y^3(y-1)^6(y^{15}-16y^{14}+\cdots+10y-1)^6$ $\cdot(y^{31}-33y^{30}+\cdots+17y-1)$ $\cdot(y^{45}-48y^{44}+\cdots+8215378y-128881)$