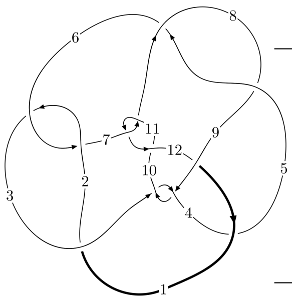
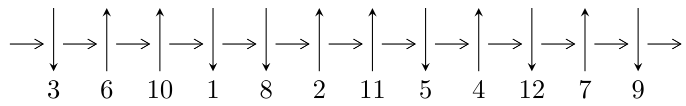
$12a_{0460}$ ($K12a_{0460}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 2.48339 \times 10^{23} u^{25} - 2.92787 \times 10^{23} u^{24} + \cdots + 5.04980 \times 10^{23} b + 1.13922 \times 10^{24},\ a - 1,\ u^{26} - u^{25} + \cdots + u$$

$$I_2^u = \langle 2.42800 \times 10^{731} u^{107} - 2.38703 \times 10^{732} u^{106} + \cdots + 1.67435 \times 10^{731} b - 2.81845 \times 10^{733},$$
$$7.28015 \times 10^{733} u^{107} - 1.32007 \times 10^{734} u^{106} + \cdots + 1.67435 \times 10^{731} a + 3.97573 \times 10^{733},$$
$$u^{108} - 2u^{107} + \cdots - 20u + 1\rangle$$

$$I_3^u = \langle -10u^{11} - 2u^{10} - 3u^9 - 4u^8 - 75u^7 - 20u^6 - 18u^5 - 14u^4 - 138u^3 - 46u^2 + 9b - 22u + 10,\ a + 1,$$
$$u^{12} + u^{11} + u^{10} + u^9 + 8u^8 + 8u^7 + 7u^6 + 5u^5 + 16u^4 + 16u^3 + 12u^2 + 4u + 1\rangle$$

$$I_4^u = \langle -2970u^{11} - 16830u^{10} + \cdots + 3431b - 12700,\ 2891u^{11} + 14095u^{10} + \cdots + 3431a + 4241,$$
$$u^{12} + 5u^{11} + 11u^{10} + 15u^9 + 11u^8 + 7u^7 + 11u^6 + 10u^5 + 22u^4 + 17u^3 + 12u^2 + 4u + 1\rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 158 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. $I_1^u = \langle 2.48 \times 10^{23} u^{25} - 2.93 \times 10^{23} u^{24} + \cdots + 5.05 \times 10^{23} b + 1.14 \times 10^{24},\ a - 1,\ u^{26} - u^{25} + \cdots + u + 1 \rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ -0.491779u^{25} + 0.579798u^{24} + \cdots - 0.505057u - 2.25597 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.491779u^{25} + 0.579798u^{24} + \cdots - 0.505057u - 1.25597 \\ -0.491779u^{25} + 0.579798u^{24} + \cdots - 0.505057u - 2.25597 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1.04793u^{25} - 1.22784u^{24} + \cdots + 1.46589u + 1.80094 \\ 1.53971u^{25} - 1.80763u^{24} + \cdots + 1.97095u + 3.05691 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.145439u^{25} - 0.0814371u^{24} + \cdots + 9.19172u + 0.529548 \\ -0.0826126u^{25} - 0.323908u^{24} + \cdots + 13.6227u + 1.32755 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.491779u^{25} + 0.579798u^{24} + \cdots - 0.505057u - 1.25597 \\ -0.544904u^{25} + 0.618776u^{24} + \cdots - 0.101297u - 2.34399 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1.15418u^{25} - 1.30579u^{24} + \cdots + 0.658374u + 1.97698 \\ 1.81723u^{25} - 2.07044u^{24} + \cdots + 0.160858u + 3.38456 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u \\ 0.0880194u^{25} - 0.141144u^{24} + \cdots - 0.764194u + 0.491779 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.326147u^{25} + 0.397989u^{24} + \cdots - 1.37309u - 1.07607 \\ -0.671424u^{25} + 0.829108u^{24} + \cdots + 0.230116u - 2.31880 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.0777366u^{25} + 0.193064u^{24} + \cdots - 1.97629u - 0.609278 \\ -0.108030u^{25} + 0.293691u^{24} + \cdots - 3.45433u - 1.07896 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{187716561302259298072416 9}{504980160038115323854327}u^{25} + \frac{3778465665043053085315905}{504980160038115323854327}u^{24} + \cdots + \frac{4750472667547566317292293}{504980160038115323854327}u - \frac{1509378005933917950046046 8}{504980160038115323854327}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{10}	$u^{26} + 12u^{25} + \cdots + 4u + 1$
c_2, c_6, c_7 c_{11}	$u^{26} + 6u^{24} + \cdots + 2u^2 + 1$
c_3, c_9	$u^{26} - 19u^{25} + \cdots - 480u + 64$
c_4, c_{12}	$u^{26} - u^{25} + \cdots + u + 1$
c_5, c_8	$u^{26} - 20u^{25} + \cdots - 3200u + 256$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$y^{26} + 12y^{25} + \cdots + 52y + 1$
c_2, c_6, c_7 c_{11}	$y^{26} + 12y^{25} + \cdots + 4y + 1$
c_3, c_9	$y^{26} + 7y^{25} + \cdots + 113664y + 4096$
c_4, c_{12}	$y^{26} - y^{25} + \cdots - 13y + 1$
c_5, c_8	$y^{26} + 8y^{25} + \cdots + 376832y + 65536$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.980147 + 0.493143I$ $a = 1.00000$ $b = -0.097435 + 1.302150I$	$-8.66439 + 2.11653I$	$-9.55328 - 2.96629I$
$u = 0.980147 - 0.493143I$ $a = 1.00000$ $b = -0.097435 - 1.302150I$	$-8.66439 - 2.11653I$	$-9.55328 + 2.96629I$
$u = -0.835611 + 0.330454I$ $a = 1.00000$ $b = 0.088041 + 0.233474I$	$-3.41305 + 2.07895I$	$-8.48167 - 4.03330I$
$u = -0.835611 - 0.330454I$ $a = 1.00000$ $b = 0.088041 - 0.233474I$	$-3.41305 - 2.07895I$	$-8.48167 + 4.03330I$
$u = -0.841886 + 0.846942I$ $a = 1.00000$ $b = -0.551696 - 1.010760I$	$-0.36897 + 3.07127I$	$4.11344 - 1.54353I$
$u = -0.841886 - 0.846942I$ $a = 1.00000$ $b = -0.551696 + 1.010760I$	$-0.36897 - 3.07127I$	$4.11344 + 1.54353I$
$u = 0.607328 + 1.030390I$ $a = 1.00000$ $b = -1.019660 - 0.255795I$	$8.43200 - 1.21326I$	$6.60796 - 0.78913I$
$u = 0.607328 - 1.030390I$ $a = 1.00000$ $b = -1.019660 + 0.255795I$	$8.43200 + 1.21326I$	$6.60796 + 0.78913I$
$u = -0.672508 + 1.044570I$ $a = 1.00000$ $b = -1.265530 + 0.111225I$	$5.67863 + 12.91670I$	$2.46808 - 9.29051I$
$u = -0.672508 - 1.044570I$ $a = 1.00000$ $b = -1.265530 - 0.111225I$	$5.67863 - 12.91670I$	$2.46808 + 9.29051I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.053110 + 0.717831I$ $a = 1.00000$ $b = -0.71946 + 1.36827I$	$-3.27197 - 12.97210I$	$-3.09380 + 10.19707I$
$u = 1.053110 - 0.717831I$ $a = 1.00000$ $b = -0.71946 - 1.36827I$	$-3.27197 + 12.97210I$	$-3.09380 - 10.19707I$
$u = -0.950340 + 0.886902I$ $a = 1.00000$ $b = -0.728257 - 1.002330I$	$-0.50796 + 2.99665I$	$1.09938 + 0.94127I$
$u = -0.950340 - 0.886902I$ $a = 1.00000$ $b = -0.728257 + 1.002330I$	$-0.50796 - 2.99665I$	$1.09938 - 0.94127I$
$u = -0.038282 + 0.628175I$ $a = 1.00000$ $b = -0.439675 - 0.624417I$	$0.741759 + 1.109910I$	$4.81799 - 4.19754I$
$u = -0.038282 - 0.628175I$ $a = 1.00000$ $b = -0.439675 + 0.624417I$	$0.741759 - 1.109910I$	$4.81799 + 4.19754I$
$u = 1.15658 + 0.97329I$ $a = 1.00000$ $b = -0.155801 + 1.162270I$	$-6.40471 - 2.84865I$	$-6.81101 + 1.79383I$
$u = 1.15658 - 0.97329I$ $a = 1.00000$ $b = -0.155801 - 1.162270I$	$-6.40471 + 2.84865I$	$-6.81101 - 1.79383I$
$u = -1.09737 + 1.20424I$ $a = 1.00000$ $b = -0.586826 - 1.223610I$	$5.41008 + 6.92479I$	$3.59556 - 2.88333I$
$u = -1.09737 - 1.20424I$ $a = 1.00000$ $b = -0.586826 + 1.223610I$	$5.41008 - 6.92479I$	$3.59556 + 2.88333I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.335440 + 0.149830I$ $a = 1.00000$ $b = -1.68515 - 1.35872I$	$0.05066 - 4.70849I$	$-17.9430 - 22.7027I$
$u = -0.335440 - 0.149830I$ $a = 1.00000$ $b = -1.68515 + 1.35872I$	$0.05066 + 4.70849I$	$-17.9430 + 22.7027I$
$u = 0.300191 + 0.199599I$ $a = 1.00000$ $b = -1.70559 - 1.25362I$	$0.54033 + 4.39868I$	$-18.8485 + 23.0455I$
$u = 0.300191 - 0.199599I$ $a = 1.00000$ $b = -1.70559 + 1.25362I$	$0.54033 - 4.39868I$	$-18.8485 - 23.0455I$
$u = 1.17409 + 1.20279I$ $a = 1.00000$ $b = -0.63296 + 1.35652I$	$1.7776 - 19.4776I$	$-0.47118 + 10.59359I$
$u = 1.17409 - 1.20279I$ $a = 1.00000$ $b = -0.63296 - 1.35652I$	$1.7776 + 19.4776I$	$-0.47118 - 10.59359I$

II. $\boldsymbol{I_2^u = \langle 2.43 \times 10^{731} u^{107} - 2.39 \times 10^{732} u^{106} + \cdots + 1.67 \times 10^{731} b - 2.82 \times 10^{733},\ 7.28 \times 10^{733} u^{107} - 1.32 \times 10^{734} u^{106} + \cdots + 1.67 \times 10^{731} a + 3.98 \times 10^{733},\ u^{108} - 2u^{107} + \cdots - 20u + 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -434.804u^{107} + 788.409u^{106} + \cdots - 3722.54u - 237.449 \\ -1.45011u^{107} + 14.2565u^{106} + \cdots - 3022.02u + 168.331 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -436.254u^{107} + 802.666u^{106} + \cdots - 6744.57u - 69.1179 \\ -1.45011u^{107} + 14.2565u^{106} + \cdots - 3022.02u + 168.331 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -98.7030u^{107} + 223.517u^{106} + \cdots - 14231.9u + 752.948 \\ 59.4757u^{107} - 116.128u^{106} + \cdots + 3284.49u - 141.375 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 366.665u^{107} - 598.891u^{106} + \cdots - 10189.2u + 982.445 \\ 43.6603u^{107} - 93.2854u^{106} + \cdots + 4379.94u - 217.361 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -447.709u^{107} + 819.400u^{106} + \cdots - 5555.39u - 150.317 \\ 0.0613482u^{107} + 10.9872u^{106} + \cdots - 2905.51u + 163.150 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -315.680u^{107} + 621.328u^{106} + \cdots - 20148.2u + 893.980 \\ 42.4213u^{107} - 83.8262u^{106} + \cdots + 2573.67u - 114.999 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 124.688u^{107} - 66.7682u^{106} + \cdots - 40929.4u + 2596.77 \\ 23.2879u^{107} - 31.9082u^{106} + \cdots - 2269.25u + 158.179 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1075.27u^{107} - 2230.33u^{106} + \cdots + 91993.9u - 4332.91 \\ 74.0637u^{107} - 162.195u^{106} + \cdots + 9089.99u - 459.539 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -113.491u^{107} + 45.4757u^{106} + \cdots + 41470.9u - 2618.38 \\ -24.5783u^{107} + 33.0243u^{106} + \cdots + 2558.49u - 176.685 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 56.1746u^{107} - 176.849u^{106} + \cdots + 21058.5u - 1189.99$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{10}	$u^{108} + 41u^{107} + \cdots + 263054u + 2809$
c_2, c_6, c_7 c_{11}	$u^{108} - u^{107} + \cdots - 412u + 53$
c_3, c_9	$(u^{54} + 9u^{53} + \cdots + 40u + 5)^2$
c_4, c_{12}	$u^{108} - 2u^{107} + \cdots - 20u + 1$
c_5, c_8	$(u^{54} + 8u^{53} + \cdots + 143u + 17)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$y^{108} + 57y^{107} + \cdots - 29072544170y + 7890481$
c_2, c_6, c_7 c_{11}	$y^{108} + 41y^{107} + \cdots + 263054y + 2809$
c_3, c_9	$(y^{54} + 31y^{53} + \cdots + 570y + 25)^2$
c_4, c_{12}	$y^{108} + 4y^{107} + \cdots + 72y + 1$
c_5, c_8	$(y^{54} + 42y^{53} + \cdots - 1919y + 289)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.332751 + 0.945381I$ $a = 1.71262 + 1.34617I$ $b = -0.403499 - 0.931637I$	$4.27100 + 0.57975I$	0
$u = -0.332751 - 0.945381I$ $a = 1.71262 - 1.34617I$ $b = -0.403499 + 0.931637I$	$4.27100 - 0.57975I$	0
$u = 0.941026 + 0.329397I$ $a = -0.15662 - 1.46774I$ $b = 0.323476 - 0.960897I$	$-0.76175 - 6.50743I$	0
$u = 0.941026 - 0.329397I$ $a = -0.15662 + 1.46774I$ $b = 0.323476 + 0.960897I$	$-0.76175 + 6.50743I$	0
$u = -0.290135 + 0.963430I$ $a = -1.48908 - 1.76420I$ $b = 0.265107 + 0.981138I$	$4.51716 + 5.38940I$	0
$u = -0.290135 - 0.963430I$ $a = -1.48908 + 1.76420I$ $b = 0.265107 - 0.981138I$	$4.51716 - 5.38940I$	0
$u = -0.222188 + 1.001060I$ $a = -0.57317 - 2.01779I$ $b = -0.096463 + 0.872410I$	$3.63274 + 2.43968I$	0
$u = -0.222188 - 1.001060I$ $a = -0.57317 + 2.01779I$ $b = -0.096463 - 0.872410I$	$3.63274 - 2.43968I$	0
$u = -0.143702 + 1.016850I$ $a = -0.09707 + 1.81804I$ $b = 0.346108 - 0.674457I$	$2.62017 + 6.46004I$	0
$u = -0.143702 - 1.016850I$ $a = -0.09707 - 1.81804I$ $b = 0.346108 + 0.674457I$	$2.62017 - 6.46004I$	0

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.236965 + 1.024070I$ $a = -0.977715 + 0.663900I$ $b = 0.795770 - 0.044759I$	$1.025280 - 0.815491I$	0
$u = 0.236965 - 1.024070I$ $a = -0.977715 - 0.663900I$ $b = 0.795770 + 0.044759I$	$1.025280 + 0.815491I$	0
$u = 0.912708 + 0.136002I$ $a = -0.59108 + 1.35371I$ $b = -0.167213 + 0.899498I$	$-0.633597 - 0.841318I$	0
$u = 0.912708 - 0.136002I$ $a = -0.59108 - 1.35371I$ $b = -0.167213 - 0.899498I$	$-0.633597 + 0.841318I$	0
$u = 0.073793 + 1.084310I$ $a = 0.454883 + 0.578206I$ $b = -0.400624 - 0.755023I$	$1.21617 + 1.76906I$	0
$u = 0.073793 - 1.084310I$ $a = 0.454883 - 0.578206I$ $b = -0.400624 + 0.755023I$	$1.21617 - 1.76906I$	0
$u = 0.662386 + 0.584694I$ $a = 1.54099 - 0.22824I$ $b = -0.40282 + 1.37077I$	$-7.28359 - 5.93563I$	0
$u = 0.662386 - 0.584694I$ $a = 1.54099 + 0.22824I$ $b = -0.40282 - 1.37077I$	$-7.28359 + 5.93563I$	0
$u = 0.629885 + 0.946570I$ $a = -1.139160 - 0.037534I$ $b = 1.097070 + 0.177053I$	$7.30209 - 7.13055I$	0
$u = 0.629885 - 0.946570I$ $a = -1.139160 + 0.037534I$ $b = 1.097070 - 0.177053I$	$7.30209 + 7.13055I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.732819 + 0.413555I$ $a = -1.44767 - 0.12061I$ $b = 0.319650 - 1.207210I$	$-4.43197 - 1.29452I$	0
$u = 0.732819 - 0.413555I$ $a = -1.44767 + 0.12061I$ $b = 0.319650 + 1.207210I$	$-4.43197 + 1.29452I$	0
$u = 0.198005 + 1.168490I$ $a = -0.205270 - 0.172033I$ $b = 0.472024 + 1.207090I$	$-2.39251 + 3.77463I$	0
$u = 0.198005 - 1.168490I$ $a = -0.205270 + 0.172033I$ $b = 0.472024 - 1.207090I$	$-2.39251 - 3.77463I$	0
$u = -0.593389 + 0.535903I$ $a = 0.840444 - 1.068300I$ $b = -0.400624 - 0.755023I$	$1.21617 + 1.76906I$	0
$u = -0.593389 - 0.535903I$ $a = 0.840444 + 1.068300I$ $b = -0.400624 + 0.755023I$	$1.21617 - 1.76906I$	0
$u = 0.947992 + 0.738840I$ $a = -1.47477 - 0.55414I$ $b = 0.431561 - 1.208400I$	$-2.66959 - 5.13236I$	0
$u = 0.947992 - 0.738840I$ $a = -1.47477 + 0.55414I$ $b = 0.431561 + 1.208400I$	$-2.66959 + 5.13236I$	0
$u = -0.511550 + 1.099200I$ $a = 0.987987 + 0.424315I$ $b = -0.858582 - 0.347515I$	$0.93815 + 5.69631I$	0
$u = -0.511550 - 1.099200I$ $a = 0.987987 - 0.424315I$ $b = -0.858582 + 0.347515I$	$0.93815 - 5.69631I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.011000 + 0.687075I$ $a = -0.686003 - 0.057152I$ $b = 0.319650 + 1.207210I$	$-4.43197 + 1.29452I$	0
$u = -1.011000 - 0.687075I$ $a = -0.686003 + 0.057152I$ $b = 0.319650 - 1.207210I$	$-4.43197 - 1.29452I$	0
$u = -0.698816 + 1.005620I$ $a = -0.034571 + 0.589947I$ $b = 0.386423 - 0.613848I$	$0.24482 + 3.41016I$	0
$u = -0.698816 - 1.005620I$ $a = -0.034571 - 0.589947I$ $b = 0.386423 + 0.613848I$	$0.24482 - 3.41016I$	0
$u = -0.771739 + 0.058750I$ $a = -0.151488 + 0.290601I$ $b = 0.206151 - 1.270090I$	$1.19581 + 2.53766I$	0
$u = -0.771739 - 0.058750I$ $a = -0.151488 - 0.290601I$ $b = 0.206151 + 1.270090I$	$1.19581 - 2.53766I$	0
$u = -0.569789 + 0.517458I$ $a = -0.465008 + 0.095633I$ $b = 0.601774 - 0.234799I$	$-0.30204 + 1.83455I$	0
$u = -0.569789 - 0.517458I$ $a = -0.465008 - 0.095633I$ $b = 0.601774 + 0.234799I$	$-0.30204 - 1.83455I$	0
$u = -0.911568 + 0.843932I$ $a = -0.700023 + 0.475338I$ $b = 0.795770 + 0.044759I$	$1.025280 + 0.815491I$	0
$u = -0.911568 - 0.843932I$ $a = -0.700023 - 0.475338I$ $b = 0.795770 - 0.044759I$	$1.025280 - 0.815491I$	0

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.935569 + 0.838861I$ $a = 1.59313 + 0.20151I$ $b = -0.368725 + 1.298990I$	$-3.97620 - 9.73538I$	0
$u = 0.935569 - 0.838861I$ $a = 1.59313 - 0.20151I$ $b = -0.368725 - 1.298990I$	$-3.97620 + 9.73538I$	0
$u = 1.065860 + 0.693651I$ $a = -1.001870 - 0.125717I$ $b = 0.66440 - 1.24969I$	$-1.72545 - 7.50933I$	0
$u = 1.065860 - 0.693651I$ $a = -1.001870 + 0.125717I$ $b = 0.66440 + 1.24969I$	$-1.72545 + 7.50933I$	0
$u = -0.569104 + 0.447030I$ $a = -0.09899 + 1.68927I$ $b = 0.386423 + 0.613848I$	$0.24482 - 3.41016I$	0
$u = -0.569104 - 0.447030I$ $a = -0.09899 - 1.68927I$ $b = 0.386423 - 0.613848I$	$0.24482 + 3.41016I$	0
$u = -0.980642 + 0.828941I$ $a = -0.982665 - 0.123307I$ $b = 0.66440 + 1.24969I$	$-1.72545 + 7.50933I$	0
$u = -0.980642 - 0.828941I$ $a = -0.982665 + 0.123307I$ $b = 0.66440 - 1.24969I$	$-1.72545 - 7.50933I$	0
$u = 1.091360 + 0.697194I$ $a = -1.078080 - 0.424426I$ $b = 0.396189 - 1.101130I$	$-2.70624 - 5.66390I$	0
$u = 1.091360 - 0.697194I$ $a = -1.078080 + 0.424426I$ $b = 0.396189 + 1.101130I$	$-2.70624 + 5.66390I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.682011 + 1.101940I$ $a = -0.876888 - 0.028892I$ $b = \ \ 1.097070 - 0.177053I$	$7.30209 + 7.13055I$	0
$u = -0.682011 - 1.101940I$ $a = -0.876888 + 0.028892I$ $b = \ \ 1.097070 + 0.177053I$	$7.30209 - 7.13055I$	0
$u = -0.971810 + 0.868933I$ $a = \ \ 0.854541 - 0.367003I$ $b = -0.858582 - 0.347515I$	$0.93815 + 5.69631I$	0
$u = -0.971810 - 0.868933I$ $a = \ \ 0.854541 + 0.367003I$ $b = -0.858582 + 0.347515I$	$0.93815 - 5.69631I$	0
$u = -0.723590 + 1.155160I$ $a = -0.270900 - 0.620424I$ $b = -0.167213 + 0.899498I$	$-0.633597 - 0.841318I$	0
$u = -0.723590 - 1.155160I$ $a = -0.270900 + 0.620424I$ $b = -0.167213 - 0.899498I$	$-0.633597 + 0.841318I$	0
$u = \ \ 0.161987 + 0.606660I$ $a = \ \ 0.545678 + 0.219760I$ $b = -1.14473 - 1.06694I$	$-0.913339 + 0.639622I$	0
$u = \ \ 0.161987 - 0.606660I$ $a = \ \ 0.545678 - 0.219760I$ $b = -1.14473 + 1.06694I$	$-0.913339 - 0.639622I$	0
$u = \ \ 1.154180 + 0.749823I$ $a = \ \ 0.635005 + 0.094052I$ $b = -0.40282 + 1.37077I$	$-7.28359 - 5.93563I$	0
$u = \ \ 1.154180 - 0.749823I$ $a = \ \ 0.635005 - 0.094052I$ $b = -0.40282 - 1.37077I$	$-7.28359 + 5.93563I$	0

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.472262 + 0.298914I$ $a = 1.97643 + 2.33440I$ $b = -0.311553 - 0.409352I$	$5.57265 + 2.80644I$	$8.46702 - 3.23440I$
$u = 0.472262 - 0.298914I$ $a = 1.97643 - 2.33440I$ $b = -0.311553 + 0.409352I$	$5.57265 - 2.80644I$	$8.46702 + 3.23440I$
$u = 0.33609 + 1.43277I$ $a = -0.071882 - 0.673649I$ $b = 0.323476 + 0.960897I$	$-0.76175 + 6.50743I$	0
$u = 0.33609 - 1.43277I$ $a = -0.071882 + 0.673649I$ $b = 0.323476 - 0.960897I$	$-0.76175 - 6.50743I$	0
$u = -0.88066 + 1.21483I$ $a = -0.803105 - 0.316173I$ $b = 0.396189 + 1.101130I$	$-2.70624 + 5.66390I$	0
$u = -0.88066 - 1.21483I$ $a = -0.803105 + 0.316173I$ $b = 0.396189 - 1.101130I$	$-2.70624 - 5.66390I$	0
$u = -0.422764 + 0.013347I$ $a = -0.784163 - 0.165128I$ $b = 1.48608 + 1.23377I$	$0.632907 - 0.329864I$	$-27.2555 + 0.3573I$
$u = -0.422764 - 0.013347I$ $a = -0.784163 + 0.165128I$ $b = 1.48608 - 1.23377I$	$0.632907 + 0.329864I$	$-27.2555 - 0.3573I$
$u = -1.05002 + 1.18250I$ $a = -1.096930 - 0.077831I$ $b = 0.59013 + 1.28629I$	$3.82402 + 13.07400I$	0
$u = -1.05002 - 1.18250I$ $a = -1.096930 + 0.077831I$ $b = 0.59013 - 1.28629I$	$3.82402 - 13.07400I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.328692 + 0.194636I$ $a = -4.03517 - 3.33086I$ $b = 0.185491 + 0.556934I$	$5.70289 - 2.90295I$	$8.86902 + 0.76394I$
$u = 0.328692 - 0.194636I$ $a = -4.03517 + 3.33086I$ $b = 0.185491 - 0.556934I$	$5.70289 + 2.90295I$	$8.86902 - 0.76394I$
$u = -0.044927 + 0.366639I$ $a = 1.57684 - 0.63504I$ $b = -1.14473 - 1.06694I$	$-0.913339 + 0.639622I$	$7.37399 + 0.54126I$
$u = -0.044927 - 0.366639I$ $a = 1.57684 + 0.63504I$ $b = -1.14473 + 1.06694I$	$-0.913339 - 0.639622I$	$7.37399 - 0.54126I$
$u = 0.215470 + 0.295113I$ $a = -2.06324 + 0.42432I$ $b = 0.601774 + 0.234799I$	$-0.30204 - 1.83455I$	$0.79540 + 3.67784I$
$u = 0.215470 - 0.295113I$ $a = -2.06324 - 0.42432I$ $b = 0.601774 - 0.234799I$	$-0.30204 + 1.83455I$	$0.79540 - 3.67784I$
$u = 0.333720 + 0.059344I$ $a = -1.221100 + 0.257137I$ $b = 1.48608 + 1.23377I$	$0.632907 - 0.329864I$	$-27.2555 + 0.3573I$
$u = 0.333720 - 0.059344I$ $a = -1.221100 - 0.257137I$ $b = 1.48608 - 1.23377I$	$0.632907 + 0.329864I$	$-27.2555 - 0.3573I$
$u = 0.160374 + 0.273918I$ $a = -2.86165 - 2.39830I$ $b = 0.472024 - 1.207090I$	$-2.39251 - 3.77463I$	$-2.10945 + 3.53292I$
$u = 0.160374 - 0.273918I$ $a = -2.86165 + 2.39830I$ $b = 0.472024 + 1.207090I$	$-2.39251 + 3.77463I$	$-2.10945 - 3.53292I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.23561 + 1.69323I$ $a = 0.211255 - 0.249516I$ $b = -0.311553 - 0.409352I$	$5.57265 + 2.80644I$	0
$u = 0.23561 - 1.69323I$ $a = 0.211255 + 0.249516I$ $b = -0.311553 + 0.409352I$	$5.57265 - 2.80644I$	0
$u = 1.24383 + 1.21540I$ $a = -0.907070 - 0.064360I$ $b = 0.59013 - 1.28629I$	$3.82402 - 13.07400I$	0
$u = 1.24383 - 1.21540I$ $a = -0.907070 + 0.064360I$ $b = 0.59013 + 1.28629I$	$3.82402 + 13.07400I$	0
$u = 0.099836 + 0.233168I$ $a = -1.41054 + 2.70584I$ $b = 0.206151 + 1.270090I$	$1.19581 - 2.53766I$	$-2.90517 + 3.99602I$
$u = 0.099836 - 0.233168I$ $a = -1.41054 - 2.70584I$ $b = 0.206151 - 1.270090I$	$1.19581 + 2.53766I$	$-2.90517 - 3.99602I$
$u = 0.068396 + 0.239581I$ $a = -6.02625 - 8.14506I$ $b = 0.315887 - 0.928442I$	$1.88088 - 9.45306I$	$2.29225 + 13.05997I$
$u = 0.068396 - 0.239581I$ $a = -6.02625 + 8.14506I$ $b = 0.315887 + 0.928442I$	$1.88088 + 9.45306I$	$2.29225 - 13.05997I$
$u = 0.088603 + 0.225851I$ $a = 2.57868 + 8.72020I$ $b = -0.229092 + 0.961028I$	$2.95872 - 4.01668I$	$1.53483 + 6.51307I$
$u = 0.088603 - 0.225851I$ $a = 2.57868 - 8.72020I$ $b = -0.229092 - 0.961028I$	$2.95872 + 4.01668I$	$1.53483 - 6.51307I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.83473 + 0.35996I$ $a = -0.029283 + 0.548479I$ $b = 0.346108 + 0.674457I$	$2.62017 - 6.46004I$	0
$u = -1.83473 - 0.35996I$ $a = -0.029283 - 0.548479I$ $b = 0.346108 - 0.674457I$	$2.62017 + 6.46004I$	0
$u = -0.98865 + 1.61493I$ $a = -0.594184 - 0.223261I$ $b = 0.431561 + 1.208400I$	$-2.66959 + 5.13236I$	0
$u = -0.98865 - 1.61493I$ $a = -0.594184 + 0.223261I$ $b = 0.431561 - 1.208400I$	$-2.66959 - 5.13236I$	0
$u = -0.67802 + 1.88022I$ $a = -0.147392 - 0.121666I$ $b = 0.185491 - 0.556934I$	$5.70289 + 2.90295I$	0
$u = -0.67802 - 1.88022I$ $a = -0.147392 + 0.121666I$ $b = 0.185491 + 0.556934I$	$5.70289 - 2.90295I$	0
$u = 1.32145 + 1.52494I$ $a = 0.617811 - 0.078145I$ $b = -0.368725 + 1.298990I$	$-3.97620 - 9.73538I$	0
$u = 1.32145 - 1.52494I$ $a = 0.617811 + 0.078145I$ $b = -0.368725 - 1.298990I$	$-3.97620 + 9.73538I$	0
$u = 2.14728 + 0.12545I$ $a = -0.130266 - 0.458587I$ $b = -0.096463 - 0.872410I$	$3.63274 - 2.43968I$	0
$u = 2.14728 - 0.12545I$ $a = -0.130266 + 0.458587I$ $b = -0.096463 + 0.872410I$	$3.63274 + 2.43968I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.84252 + 1.17113I$ $a = 0.360912 - 0.283689I$ $b = -0.403499 - 0.931637I$	$4.27100 + 0.57975I$	0
$u = -1.84252 - 1.17113I$ $a = 0.360912 + 0.283689I$ $b = -0.403499 + 0.931637I$	$4.27100 - 0.57975I$	0
$u = -1.74099 + 1.35503I$ $a = 0.0311843 - 0.1054550I$ $b = -0.229092 + 0.961028I$	$2.95872 - 4.01668I$	0
$u = -1.74099 - 1.35503I$ $a = 0.0311843 + 0.1054550I$ $b = -0.229092 - 0.961028I$	$2.95872 + 4.01668I$	0
$u = 2.13172 + 0.92277I$ $a = -0.279390 - 0.331009I$ $b = 0.265107 - 0.981138I$	$4.51716 - 5.38940I$	0
$u = 2.13172 - 0.92277I$ $a = -0.279390 + 0.331009I$ $b = 0.265107 + 0.981138I$	$4.51716 + 5.38940I$	0
$u = 1.53923 + 2.00086I$ $a = -0.0587023 - 0.0793420I$ $b = 0.315887 + 0.928442I$	$1.88088 + 9.45306I$	0
$u = 1.53923 - 2.00086I$ $a = -0.0587023 + 0.0793420I$ $b = 0.315887 - 0.928442I$	$1.88088 - 9.45306I$	0

III. $\boldsymbol{I_3^u = \langle -10u^{11} - 2u^{10} + \cdots + 9b + 10,\ a + 1,\ u^{12} + u^{11} + \cdots + 4u + 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -1 \\ \frac{10}{9}u^{11} + \frac{2}{9}u^{10} + \cdots + \frac{22}{9}u - \frac{10}{9} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} \frac{10}{9}u^{11} + \frac{2}{9}u^{10} + \cdots + \frac{22}{9}u - \frac{19}{9} \\ \frac{10}{9}u^{11} + \frac{2}{9}u^{10} + \cdots + \frac{22}{9}u - \frac{10}{9} \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -\frac{11}{9}u^{11} - \frac{4}{9}u^{10} + \cdots - \frac{44}{9}u + \frac{20}{9} \\ -\frac{1}{9}u^{11} - \frac{2}{9}u^{10} + \cdots - \frac{22}{9}u + \frac{1}{9} \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -\frac{8}{3}u^{11} - \frac{7}{3}u^{10} + \cdots - \frac{80}{3}u - \frac{16}{3} \\ -\frac{1}{3}u^{11} - \frac{2}{3}u^{10} + \cdots - \frac{19}{3}u - \frac{5}{3} \end{pmatrix}$$

$$a_8 = \begin{pmatrix} \frac{10}{9}u^{11} + \frac{2}{9}u^{10} + \cdots + \frac{22}{9}u - \frac{19}{9} \\ \frac{11}{9}u^{11} + \frac{4}{9}u^{10} + \cdots + \frac{44}{9}u - \frac{2}{9} \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^{11} - 7u^7 + u^4 - 12u^3 - u^2 + 4 \\ \frac{1}{9}u^{11} + \frac{2}{9}u^{10} + \cdots - \frac{5}{9}u + \frac{8}{9} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u \\ \frac{8}{9}u^{11} + \frac{7}{9}u^{10} + \cdots + \frac{59}{9}u + \frac{10}{9} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} \frac{4}{3}u^{11} + \frac{2}{3}u^{10} + \cdots + \frac{13}{3}u - \frac{4}{3} \\ \frac{16}{9}u^{11} + \frac{14}{9}u^{10} + \cdots + \frac{73}{9}u + \frac{11}{9} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} \frac{16}{9}u^{11} + \frac{14}{9}u^{10} + \cdots + \frac{109}{9}u + \frac{20}{9} \\ \frac{7}{9}u^{11} + \frac{5}{9}u^{10} + \cdots + \frac{37}{9}u + \frac{11}{9} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= \frac{10}{3}u^{11} + \frac{14}{3}u^{10} + 3u^9 + \frac{19}{3}u^8 + 27u^7 + \frac{101}{3}u^6 + 15u^5 + \frac{77}{3}u^4 + 52u^3 + \frac{178}{3}u^2 + \frac{31}{3}u + \frac{11}{3}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.863486+0.872394I$ $a=-1.00000$ $b=\ \ 0.665514+0.762155I$	$-0.98298+3.68538I$	$-4.37283-7.00682I$
$u=-0.863486-0.872394I$ $a=-1.00000$ $b=\ \ 0.665514-0.762155I$	$-0.98298-3.68538I$	$-4.37283+7.00682I$
$u=-0.354872+0.560954I$ $a=-1.00000$ $b=\ \ 1.079070+0.218144I$	$-0.59559+2.91700I$	$1.77911-12.40585I$
$u=-0.354872-0.560954I$ $a=-1.00000$ $b=\ \ 1.079070-0.218144I$	$-0.59559-2.91700I$	$1.77911+12.40585I$
$u=\ \ 0.979880+1.002500I$ $a=-1.00000$ $b=-0.192196-0.879704I$	$1.62015+8.37846I$	$-0.62923-4.48090I$
$u=\ \ 0.979880-1.002500I$ $a=-1.00000$ $b=-0.192196+0.879704I$	$1.62015-8.37846I$	$-0.62923+4.48090I$
$u=\ \ 0.96111+1.04325I$ $a=-1.00000$ $b=\ \ 0.370840-1.288770I$	$-5.29393-7.05976I$	$-4.29339+6.46563I$
$u=\ \ 0.96111-1.04325I$ $a=-1.00000$ $b=\ \ 0.370840+1.288770I$	$-5.29393+7.05976I$	$-4.29339-6.46563I$
$u=-1.01858+1.01101I$ $a=-1.00000$ $b=\ \ 0.024242+0.781924I$	$4.80289+3.78069I$	$2.67279-4.44300I$
$u=-1.01858-1.01101I$ $a=-1.00000$ $b=\ \ 0.024242-0.781924I$	$4.80289-3.78069I$	$2.67279+4.44300I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.204054+0.378583I$ $a=-1.00000$ $b=-0.947472+0.073317I$	$0.44945+4.78647I$	$-0.65644-4.95650I$
$u=-0.204054-0.378583I$ $a=-1.00000$ $b=-0.947472-0.073317I$	$0.44945-4.78647I$	$-0.65644+4.95650I$

IV. $\boldsymbol{I^u_4 = \langle -2970u^{11} - 16830u^{10} + \cdots + 3431b - 12700,\ 2891u^{11} + 14095u^{10} + \cdots + 3431a + 4241,\ u^{12} + 5u^{11} + \cdots + 4u + 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.842611u^{11} - 4.10813u^{10} + \cdots - 7.29846u - 1.23608 \\ 0.865637u^{11} + 4.90528u^{10} + \cdots + 10.3585u + 3.70154 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.0230254u^{11} + 0.797144u^{10} + \cdots + 3.06004u + 2.46546 \\ 0.865637u^{11} + 4.90528u^{10} + \cdots + 10.3585u + 3.70154 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -1.23608u^{11} - 5.33780u^{10} + \cdots - 3.55232u + 2.35412 \\ -0.303410u^{11} - 1.71932u^{10} + \cdots - 3.24687u - 0.0448849 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -2.94433u^{11} - 14.3512u^{10} + \cdots - 22.2093u - 4.58350 \\ -0.460799u^{11} - 2.61119u^{10} + \cdots - 6.94841u - 1.80880 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.0469251u^{11} + 0.400758u^{10} + \cdots + 2.63713u + 2.57039 \\ 0.552609u^{11} + 3.13145u^{10} + \cdots + 7.44098u + 3.17109 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -1.11804u^{11} - 4.66890u^{10} + \cdots - 0.776159u + 3.67706 \\ 0.0419703u^{11} + 0.237832u^{10} + \cdots - 0.346255u + 0.937045 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.580297u^{11} - 2.62168u^{10} + \cdots - 1.46255u + 0.370446 \\ 1.04488u^{11} + 4.92101u^{10} + \cdots + 6.12970u + 0.932673 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.127951u^{11} + 1.39172u^{10} + \cdots + 5.19440u + 3.30807 \\ 1.02594u^{11} + 5.48033u^{10} + \cdots + 9.53600u + 2.46109 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1.32294u^{11} + 6.49665u^{10} + \cdots + 9.33576u + 2.51559 \\ 0.981929u^{11} + 4.56427u^{10} + \cdots + 3.64908u + 1.02711 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{1968}{3431}u^{11} - \frac{11152}{3431}u^{10} - \frac{24508}{3431}u^9 - \frac{30991}{3431}u^8 - \frac{20579}{3431}u^7 - \frac{8053}{3431}u^6 - \frac{22442}{3431}u^5 - \frac{8337}{3431}u^4 - \frac{28268}{3431}u^3 - \frac{43152}{3431}u^2 - \frac{21505}{3431}u - \frac{7341}{3431}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.023730+1.013520I$ $a=-0.02218-1.97405I$ $b=\ 0.124001+0.785288I$	$3.87460+3.17324I$	$5.27096-5.77959I$
$u=-0.023730-1.013520I$ $a=-0.02218+1.97405I$ $b=\ 0.124001-0.785288I$	$3.87460-3.17324I$	$5.27096+5.77959I$
$u=\ 0.879137+0.602547I$ $a=\ 1.48568+0.72207I$ $b=-0.483487+1.114980I$	$-3.74344-5.18068I$	$-8.21095+5.58494I$
$u=\ 0.879137-0.602547I$ $a=\ 1.48568-0.72207I$ $b=-0.483487-1.114980I$	$-3.74344+5.18068I$	$-8.21095-5.58494I$
$u=-0.207965+0.545792I$ $a=\ 0.746441-0.665452I$ $b=-1.18501$	-1.15778	$-\ 61.276009+0.10I$
$u=-0.207965-0.545792I$ $a=\ 0.746441+0.665452I$ $b=-1.18501$	-1.15778	$-\ 61.276009+0.10I$
$u=-0.275150+0.355699I$ $a=\ 0.251268-0.967917I$ $b=\ 0.903984$	0.895450	$-6-0.396023+0.10I$
$u=-0.275150-0.355699I$ $a=\ 0.251268+0.967917I$ $b=\ 0.903984$	0.895450	$-6-0.396023+0.10I$
$u=-0.87103+1.52999I$ $a=\ 0.544480+0.264627I$ $b=-0.483487-1.114980I$	$-3.74344+5.18068I$	$-8.21095-5.58494I$
$u=-0.87103-1.52999I$ $a=\ 0.544480-0.264627I$ $b=-0.483487+1.114980I$	$-3.74344-5.18068I$	$-8.21095+5.58494I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -2.00126 + 0.02437I$ $a = -0.005690 - 0.506509I$ $b = 0.124001 - 0.785288I$	$3.87460 - 3.17324I$	$5.27096 + 5.77959I$
$u = -2.00126 - 0.02437I$ $a = -0.005690 + 0.506509I$ $b = 0.124001 + 0.785288I$	$3.87460 + 3.17324I$	$5.27096 - 5.77959I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_{10}	$(u^{12} - 6u^{11} + \cdots - 6u + 1)(u^{12} - 6u^{11} + \cdots - 9u + 1)$ $\cdot (u^{26} + 12u^{25} + \cdots + 4u + 1)(u^{108} + 41u^{107} + \cdots + 263054u + 2809)$
c_2, c_7	$(u^{12} - 2u^{11} + \cdots - u + 1)(u^{12} - 2u^{11} + \cdots - 2u + 1)$ $\cdot (u^{26} + 6u^{24} + \cdots + 2u^2 + 1)(u^{108} - u^{107} + \cdots - 412u + 53)$
c_3	$(u^6 + u^5 + u^4 - u^2 - 1)^2$ $\cdot (u^{12} - 2u^{11} + 3u^{10} - 2u^9 - u^8 + 3u^7 - 4u^6 + 3u^5 - u^4 - u^3 + 2u^2 - u + 1)$ $\cdot (u^{26} - 19u^{25} + \cdots - 480u + 64)(u^{54} + 9u^{53} + \cdots + 40u + 5)^2$
c_4, c_{12}	$(u^{12} + u^{11} + \cdots + 4u + 1)(u^{12} + 5u^{11} + \cdots + 4u + 1)$ $\cdot (u^{26} - u^{25} + \cdots + u + 1)(u^{108} - 2u^{107} + \cdots - 20u + 1)$
c_5	$(u^6 + u^4 - u^2 - u - 1)^2$ $\cdot (u^{12} - u^{11} + 2u^{10} - u^9 - u^8 + 3u^7 - 4u^6 + 3u^5 - u^4 - 2u^3 + 3u^2 - 2u + 1)$ $\cdot (u^{26} - 20u^{25} + \cdots - 3200u + 256)(u^{54} + 8u^{53} + \cdots + 143u + 17)^2$
c_6, c_{11}	$(u^{12} + 2u^{11} + \cdots + 2u + 1)(u^{12} + 2u^{11} + \cdots + u + 1)$ $\cdot (u^{26} + 6u^{24} + \cdots + 2u^2 + 1)(u^{108} - u^{107} + \cdots - 412u + 53)$
c_8	$(u^6 + u^4 - u^2 + u - 1)^2$ $\cdot (u^{12} + u^{11} + 2u^{10} + u^9 - u^8 - 3u^7 - 4u^6 - 3u^5 - u^4 + 2u^3 + 3u^2 + 2u + 1)$ $\cdot (u^{26} - 20u^{25} + \cdots - 3200u + 256)(u^{54} + 8u^{53} + \cdots + 143u + 17)^2$
c_9	$(u^6 - u^5 + u^4 - u^2 - 1)^2$ $\cdot (u^{12} + 2u^{11} + 3u^{10} + 2u^9 - u^8 - 3u^7 - 4u^6 - 3u^5 - u^4 + u^3 + 2u^2 + u + 1)$ $\cdot (u^{26} - 19u^{25} + \cdots - 480u + 64)(u^{54} + 9u^{53} + \cdots + 40u + 5)^2$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$(y^{12}+6y^{11}+\cdots+6y+1)(y^{12}+6y^{11}+\cdots-11y+1)$ $\cdot(y^{26}+12y^{25}+\cdots+52y+1)$ $\cdot(y^{108}+57y^{107}+\cdots-29072544170y+7890481)$
c_2, c_6, c_7 c_{11}	$(y^{12}+6y^{11}+\cdots+9y+1)(y^{12}+6y^{11}+\cdots+6y+1)$ $\cdot(y^{26}+12y^{25}+\cdots+4y+1)(y^{108}+41y^{107}+\cdots+263054y+2809)$
c_3, c_9	$(y^6+y^5-y^4-4y^3-y^2+2y+1)^2$ $\cdot(y^{12}+2y^{11}-y^{10}-6y^9-y^8+5y^7+6y^6+3y^5-5y^4-7y^3+3y+1)$ $\cdot(y^{26}+7y^{25}+\cdots+113664y+4096)$ $\cdot(y^{54}+31y^{53}+\cdots+570y+25)^2$
c_4, c_{12}	$(y^{12}-3y^{11}+\cdots+8y+1)(y^{12}+y^{11}+\cdots+8y+1)$ $\cdot(y^{26}-y^{25}+\cdots-13y+1)(y^{108}+4y^{107}+\cdots+72y+1)$
c_5, c_8	$(y^6+2y^5-y^4-4y^3-y^2+y+1)^2$ $\cdot(y^{12}+3y^{11}-7y^9-5y^8+3y^7+6y^6+5y^5-y^4-6y^3-y^2+2y+1)$ $\cdot(y^{26}+8y^{25}+\cdots+376832y+65536)$ $\cdot(y^{54}+42y^{53}+\cdots-1919y+289)^2$