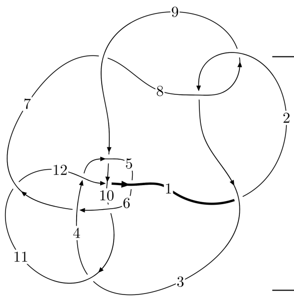
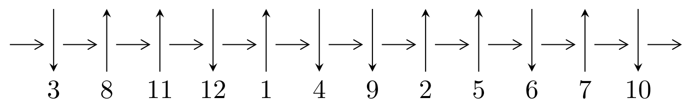
$12a_{0793}$ ($K12a_{0793}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$
\begin{aligned}
I^u_1 &= \langle 438u^{26} - 7373u^{25} + \cdots + b - 5644,\ -57808u^{26} + 1046188u^{25} + \cdots + 161a + 5545308,\\
&\quad u^{27} - 19u^{26} + \cdots - 2467u + 161\rangle\\
I^u_2 &= \langle 10u^{19} - 138u^{18} + \cdots + b + 3377,\ -19597u^{19} + 310175u^{18} + \cdots + 547a + 6609401,\\
&\quad u^{20} - 17u^{19} + \cdots - 5470u + 547\rangle\\
I^u_3 &= \langle -2.10186 \times 10^{16}a^{17}u - 3.95962 \times 10^{16}a^{16}u + \cdots - 8.49848 \times 10^{16}a + 1.61926 \times 10^{17},\\
&\quad a^{17}u + 6a^{16}u + \cdots - 4a - 1,\ u^2 + u + 1\rangle\\
I^u_4 &= \langle -1.67412 \times 10^{56}a^{17}u^3 + 5.44170 \times 10^{55}a^{16}u^3 + \cdots - 7.19011 \times 10^{55}a + 1.87024 \times 10^{54},\\
&\quad 4a^{17}u^3 - 7a^{16}u^3 + \cdots + 13417a + 5031,\ u^4 + u^3 - 2u + 1\rangle\\
I^u_5 &= \langle -6.08618 \times 10^{26}u^{37} - 1.06034 \times 10^{28}u^{36} + \cdots + 4.67445 \times 10^{25}b - 8.22006 \times 10^{26},\\
&\quad 2.32508 \times 10^{27}u^{37} + 4.03483 \times 10^{28}u^{36} + \cdots + 4.67445 \times 10^{25}a + 3.83085 \times 10^{27},\ u^{38} + 18u^{37} + \cdots - 8u^2 +\\
I^u_6 &= \langle 161661572437a^{17} + 1093851116613b + \cdots + 483678202596a + 63623157951,\\
&\quad a^{18} - a^{17} + \cdots + 2a + 1,\ u + 1\rangle\\
I^u_7 &= \langle b + u,\ a - u,\ u^2 + u + 1\rangle
\end{aligned}
$$

$$I^v_1 = \langle a,\ b^9 + b^8 - 2b^7 - 3b^6 + b^5 + 3b^4 + 2b^3 - b - 1,\ v - 1\rangle$$

* 8 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 222 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

I. $\boldsymbol{I_1^u = \langle 438u^{26} - 7373u^{25} + \cdots + b - 5644,\ -5.78 \times 10^4 u^{26} + 1.05 \times 10^6 u^{25} + \cdots + 161a + 5.55 \times 10^6,\ u^{27} - 19u^{26} + \cdots - 2467u + 161\rangle}$

(i) Arc colorings

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

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

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 359.056u^{26} - 6498.06u^{25} + \cdots + 518090.u - 34442.9 \\ -438u^{26} + 7373u^{25} + \cdots - 109848u + 5644 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 35.0559u^{26} - 228.062u^{25} + \cdots - 333258.u + 23365.1 \\ 625u^{26} - 10590u^{25} + \cdots + 223554u - 12710 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.503106u^{26} - 8.55901u^{25} + \cdots + 85.1429u - 7.16149 \\ u^{26} - 18u^{25} + \cdots + 1234u - 80 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.496894u^{26} + 8.44099u^{25} + \cdots + 4.14286u - 8.16149 \\ u^{25} - 17u^{24} + \cdots - 1152u + 81 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -78.9441u^{26} + 874.938u^{25} + \cdots + 408242.u - 28798.9 \\ -438u^{26} + 7373u^{25} + \cdots - 109848u + 5644 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -589.944u^{26} + 10361.9u^{25} + \cdots - 556812.u + 36075.1 \\ -324u^{26} + 6270u^{25} + \cdots - 851348u + 57808 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -217.472u^{26} + 4474.97u^{25} + \cdots - 831411.u + 56923.5 \\ 854u^{26} - 14673u^{25} + \cdots + 485474u - 29861 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 3.87578u^{26} - 105.640u^{25} + \cdots + 43768.3u - 3039.54 \\ -42u^{26} + 713u^{25} + \cdots - 9810u + 463 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 190.292u^{26} - 4012.55u^{25} + \cdots + 828459.u - 56867.2 \\ -847u^{26} + 14620u^{25} + \cdots - 547319u + 34179 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 572u^{26} - 10814u^{25} + \cdots + 1256842u - 84866$

in decimal forms when there is not enough margin.

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{27} + 10u^{26} + \cdots + 208u - 64$
c_2, c_8	$u^{27} + 6u^{26} + \cdots + 20u + 8$
c_3, c_5, c_9 c_{11}	$u^{27} - u^{26} + \cdots - u + 1$
c_4, c_{10}	$u^{27} + 2u^{26} + \cdots - u - 4$
c_6, c_{12}	$u^{27} - 19u^{26} + \cdots - 2467u + 161$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^{27} + 14y^{26} + \cdots + 92416y - 4096$
c_2, c_8	$y^{27} + 10y^{26} + \cdots + 208y - 64$
c_3, c_5, c_9 c_{11}	$y^{27} - 11y^{26} + \cdots + 35y - 1$
c_4, c_{10}	$y^{27} - 16y^{26} + \cdots + 353y - 16$
c_6, c_{12}	$y^{27} - 19y^{26} + \cdots + 1457339y - 25921$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.336537 + 0.836798I$ $a = 0.736010 - 0.616080I$ $b = -0.848254 + 0.367605I$	$2.86929 + 7.34613I$	$2.90775 - 7.28964I$
$u = 0.336537 - 0.836798I$ $a = 0.736010 + 0.616080I$ $b = -0.848254 - 0.367605I$	$2.86929 - 7.34613I$	$2.90775 + 7.28964I$
$u = -1.10919$ $a = -0.386233$ $b = -0.903587$	-2.13154	0
$u = 0.370735 + 0.693916I$ $a = -0.865324 + 0.727255I$ $b = 0.749010 - 0.364611I$	$3.95268 + 1.67314I$	$5.49448 - 1.76320I$
$u = 0.370735 - 0.693916I$ $a = -0.865324 - 0.727255I$ $b = 0.749010 + 0.364611I$	$3.95268 - 1.67314I$	$5.49448 + 1.76320I$
$u = -0.268476 + 0.625946I$ $a = -0.083820 - 0.885103I$ $b = -0.847216 + 0.126003I$	$-1.73737 + 1.71478I$	$-1.17961 - 4.95117I$
$u = -0.268476 - 0.625946I$ $a = -0.083820 + 0.885103I$ $b = -0.847216 - 0.126003I$	$-1.73737 - 1.71478I$	$-1.17961 + 4.95117I$
$u = 1.24557 + 0.71757I$ $a = -0.595551 + 0.624978I$ $b = -0.544229 - 0.767881I$	$6.27419 - 3.10868I$	0
$u = 1.24557 - 0.71757I$ $a = -0.595551 - 0.624978I$ $b = -0.544229 + 0.767881I$	$6.27419 + 3.10868I$	0
$u = 1.46415$ $a = -0.619509$ $b = -0.421012$	0.177089	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.24952 + 0.79090I$ $a = 0.525687 - 0.707434I$ $b = 0.673803 + 0.845192I$	$6.16267 - 9.49500I$	0
$u = 1.24952 - 0.79090I$ $a = 0.525687 + 0.707434I$ $b = 0.673803 - 0.845192I$	$6.16267 + 9.49500I$	0
$u = -1.47651 + 0.36572I$ $a = 0.227999 + 0.088281I$ $b = 0.930830 - 0.018614I$	$-5.14690 + 3.89427I$	0
$u = -1.47651 - 0.36572I$ $a = 0.227999 - 0.088281I$ $b = 0.930830 + 0.018614I$	$-5.14690 - 3.89427I$	0
$u = 1.16750 + 1.01896I$ $a = -0.058356 + 1.102740I$ $b = -1.45088 - 1.00868I$	$0.3619 - 21.2108I$	0
$u = 1.16750 - 1.01896I$ $a = -0.058356 - 1.102740I$ $b = -1.45088 + 1.00868I$	$0.3619 + 21.2108I$	0
$u = 1.17572 + 1.01054I$ $a = 0.096238 - 1.077870I$ $b = 1.39364 + 1.00946I$	$1.5557 - 15.1733I$	0
$u = 1.17572 - 1.01054I$ $a = 0.096238 + 1.077870I$ $b = 1.39364 - 1.00946I$	$1.5557 + 15.1733I$	0
$u = 1.20645 + 1.03913I$ $a = -0.029811 + 0.956551I$ $b = -1.37963 - 0.83840I$	$-5.7698 - 14.5930I$	0
$u = 1.20645 - 1.03913I$ $a = -0.029811 - 0.956551I$ $b = -1.37963 + 0.83840I$	$-5.7698 + 14.5930I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.24077 + 1.00164I$ $a = 0.145799 - 0.888216I$ $b = 1.21535 + 0.84214I$	$-1.11103 - 11.43690I$	0
$u = 1.24077 - 1.00164I$ $a = 0.145799 + 0.888216I$ $b = 1.21535 - 0.84214I$	$-1.11103 + 11.43690I$	0
$u = 1.29979 + 1.03028I$ $a = -0.105556 + 0.759404I$ $b = -1.180600 - 0.684143I$	$-4.06736 - 6.77038I$	0
$u = 1.29979 - 1.03028I$ $a = -0.105556 - 0.759404I$ $b = -1.180600 + 0.684143I$	$-4.06736 + 6.77038I$	0
$u = 1.70957 + 0.33451I$ $a = 0.443467 - 0.165713I$ $b = 0.622434 + 0.176394I$	$-3.79012 - 4.61907I$	0
$u = 1.70957 - 0.33451I$ $a = 0.443467 + 0.165713I$ $b = 0.622434 - 0.176394I$	$-3.79012 + 4.61907I$	0
$u = 0.130692$ $a = -5.77466$ $b = 0.656068$	1.20181	8.52320

II. $\boldsymbol{I_2^u = \langle 10u^{19} - 138u^{18} + \cdots + b + 3377,\ -1.96 \times 10^4 u^{19} + 3.10 \times 10^5 u^{18} + \cdots + 547a + 6.61 \times 10^6,\ u^{20} - 17u^{19} + \cdots - 5470u + 547\rangle}$

(i) Arc colorings

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

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

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 35.8263u^{19} - 567.048u^{18} + \cdots + 116532.u - 12083 \\ -10u^{19} + 138u^{18} + \cdots + 26256u - 3377 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -6.17367u^{19} + 114.952u^{18} + \cdots - 67354.8u + 7514 \\ -10u^{19} + 189u^{18} + \cdots - 125810u + 14127 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.500914u^{19} + 7.51554u^{18} + \cdots - 161.757u + 5 \\ -u^{19} + 16u^{18} + \cdots - 2734u + 273 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1.49909u^{19} - 23.4845u^{18} + \cdots + 5036.24u - 541 \\ -u^{18} + 15u^{17} + \cdots + 2462u - 274 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 25.8263u^{19} - 429.048u^{18} + \cdots + 142788.u - 15460 \\ -10u^{19} + 138u^{18} + \cdots + 26256u - 3377 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 58.8263u^{19} - 915.048u^{18} + \cdots + 140957.u - 13914 \\ 22u^{19} - 355u^{18} + \cdots + 84333u - 8847 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 34.2395u^{19} - 584.071u^{18} + \cdots + 235307.u - 25699 \\ -19u^{19} + 272u^{18} + \cdots + 34877u - 4792 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.372943u^{19} + 3.65996u^{18} + \cdots - 26140.2u + 2952 \\ 8u^{19} - 122u^{18} + \cdots + 5813u - 343 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -33.5539u^{19} + 582.417u^{18} + \cdots - 260246.u + 28513 \\ 28u^{19} - 421u^{18} + \cdots + 12884u - 303 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -74u^{19} + 1205u^{18} - 10121u^{17} + 57171u^{16} - 241507u^{15} + 807130u^{14} - 2208198u^{13} + 5054483u^{12} - 9813175u^{11} + 16283515u^{10} - 23153095u^9 + 28154252u^8 - 29094801u^7 + 25274749u^6 - 18155481u^5 + 10525995u^4 - 4748224u^3 + 1569915u^2 - 340234u + 36612$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$(u^{10} + 3u^9 + \cdots + 4u + 16)^2$
c_2, c_8	$(u^{10} + 3u^9 + 6u^8 + 7u^7 + 7u^6 + 4u^5 + 2u^4 + u^3 + 5u^2 + 6u + 4)^2$
c_3, c_5, c_9 c_{11}	$u^{20} + u^{19} + \cdots + 4u + 1$
c_4, c_{10}	$(u^{10} - u^9 + 2u^8 - 2u^7 + 3u^6 - 2u^5 + 4u^4 - 3u^3 + 2u^2 - u + 1)^2$
c_6, c_{12}	$u^{20} - 17u^{19} + \cdots - 5470u + 547$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$(y^{10} + 7y^9 + \cdots + 912y + 256)^2$
c_2, c_8	$(y^{10} + 3y^9 + \cdots + 4y + 16)^2$
c_3, c_5, c_9 c_{11}	$y^{20} - 3y^{19} + \cdots - 6y + 1$
c_4, c_{10}	$(y^{10} + 3y^9 + 6y^8 + 12y^7 + 15y^6 + 16y^5 + 16y^4 + 9y^3 + 6y^2 + 3y + 1)^2$
c_6, c_{12}	$y^{20} + 9y^{19} + \cdots - 291004y + 299209$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.677518+0.918459I$ $a = -0.283415+1.066980I$ $b = -0.046924-1.225610I$	$8.01878-3.00602I$	$7.09865+2.87547I$
$u = 0.677518-0.918459I$ $a = -0.283415-1.066980I$ $b = -0.046924+1.225610I$	$8.01878+3.00602I$	$7.09865-2.87547I$
$u = 0.659672+0.969287I$ $a = 0.299146-0.973357I$ $b = -0.046924+1.225610I$	$8.01878+3.00602I$	$7.09865-2.87547I$
$u = 0.659672-0.969287I$ $a = 0.299146+0.973357I$ $b = -0.046924-1.225610I$	$8.01878-3.00602I$	$7.09865+2.87547I$
$u = 0.701824+0.417724I$ $a = -0.12548+1.75109I$ $b = -0.247103-0.693158I$	$1.22482-2.54559I$	$8.96438-3.81169I$
$u = 0.701824-0.417724I$ $a = -0.12548-1.75109I$ $b = -0.247103+0.693158I$	$1.22482+2.54559I$	$8.96438+3.81169I$
$u = 0.997260+0.676475I$ $a = -0.259742+1.345110I$ $b = -0.785372-0.793969I$	$2.56812-6.71853I$	$0.+9.04516I$
$u = 0.997260-0.676475I$ $a = -0.259742-1.345110I$ $b = -0.785372+0.793969I$	$2.56812+6.71853I$	$0.-9.04516I$
$u = 1.112530+0.520031I$ $a = 0.473491-1.197620I$ $b = 0.694203+0.475585I$	$-4.79509-5.43520I$	$-14.2284+21.7220I$
$u = 1.112530-0.520031I$ $a = 0.473491+1.197620I$ $b = 0.694203-0.475585I$	$-4.79509+5.43520I$	$-14.2284-21.7220I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.030430 + 0.704082I$ $a = 0.220528 - 1.322220I$ $b = 0.885197 + 0.778729I$	$1.20804 - 12.75960I$	$0. + 12.39712I$
$u = 1.030430 - 0.704082I$ $a = 0.220528 + 1.322220I$ $b = 0.885197 - 0.778729I$	$1.20804 + 12.75960I$	$0. - 12.39712I$
$u = -0.13202 + 1.58588I$ $a = -0.083726 - 0.222070I$ $b = -0.247103 + 0.693158I$	$1.22482 + 2.54559I$	0
$u = -0.13202 - 1.58588I$ $a = -0.083726 + 0.222070I$ $b = -0.247103 - 0.693158I$	$1.22482 - 2.54559I$	0
$u = 1.06126 + 1.41764I$ $a = -0.468889 + 0.016745I$ $b = 0.885197 - 0.778729I$	$1.20804 + 12.75960I$	0
$u = 1.06126 - 1.41764I$ $a = -0.468889 - 0.016745I$ $b = 0.885197 + 0.778729I$	$1.20804 - 12.75960I$	0
$u = 0.99401 + 1.47823I$ $a = 0.415405 - 0.085464I$ $b = -0.785372 + 0.793969I$	$2.56812 + 6.71853I$	0
$u = 0.99401 - 1.47823I$ $a = 0.415405 + 0.085464I$ $b = -0.785372 - 0.793969I$	$2.56812 - 6.71853I$	0
$u = 1.39751 + 1.83694I$ $a = -0.187318 - 0.050399I$ $b = 0.694203 - 0.475585I$	$-4.79509 + 5.43520I$	0
$u = 1.39751 - 1.83694I$ $a = -0.187318 + 0.050399I$ $b = 0.694203 + 0.475585I$	$-4.79509 - 5.43520I$	0

III. $\boldsymbol{I^u_3 = \langle -2.10\times 10^{16}a^{17}u - 3.96\times 10^{16}a^{16}u + \cdots - 8.50\times 10^{16}a + 1.62\times 10^{17},\ a^{17}u + 6a^{16}u + \cdots - 4a - 1,\ u^2 + u + 1\rangle}$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} a \\ 0.0959303a^{17}u + 0.180720a^{16}u + \cdots + 0.387877a - 0.739044 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.0959303a^{17}u + 0.180720a^{16}u + \cdots + 2.38788a - 0.739044 \\ -0.461097a^{17}u + 0.273775a^{16}u + \cdots + 5.32003a + 0.717805 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.280377a^{17}u + 0.0689210a^{16}u + \cdots + 1.68093a + 1.55703 \\ -a^2u - a^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -a^2u \\ -0.283253a^{17}u + 0.0132106a^{16}u + \cdots + 0.179332a + 0.0959303 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.0959303a^{17}u + 0.180720a^{16}u + \cdots + 1.38788a - 0.739044 \\ 0.0959303a^{17}u + 0.180720a^{16}u + \cdots + 0.387877a - 0.739044 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.557028a^{17}u - 0.0930548a^{16}u + \cdots - 2.93216a - 1.45685 \\ -au \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -a^3u - a^3 - 2au - a \\ -0.128737a^{17}u + 0.242628a^{16}u + \cdots + 1.98774a - 0.455792 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.0478671a^{17}u - 0.111173a^{16}u + \cdots - 2.64693a + 0.379956 \\ 0.369293a^{17}u + 0.00145360a^{16}u + \cdots - 3.00361a - 0.982614 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.372906a^{17}u - 0.0550592a^{16}u + \cdots - 0.798659a - 1.02405 \\ -0.616623a^{17}u + 0.469416a^{16}u + \cdots + 0.749763a + 0.122688 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{670869991029847876}{219102404420358169}a^{17}u + \frac{387999224026686928}{219102404420358169}a^{16}u + \cdots + \frac{7273155080522331304}{219102404420358169}a + \frac{1021136578232313598}{219102404420358169}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$(u^9 + 3u^8 + 8u^7 + 13u^6 + 17u^5 + 17u^4 + 12u^3 + 6u^2 + u - 1)^4$
c_2, c_8	$(u^9 - u^8 + 2u^7 - u^6 + 3u^5 - u^4 + 2u^3 + u + 1)^4$
c_3, c_5, c_9 c_{11}	$u^{36} + u^{35} + \cdots + 8u + 1$
c_4, c_{10}	$u^{36} + 3u^{35} + \cdots + 2544u + 889$
c_6, c_{12}	$(u^2 + u + 1)^{18}$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$(y^9+7y^8+20y^7+25y^6+5y^5-15y^4+22y^2+13y-1)^4$
c_2, c_8	$(y^9+3y^8+8y^7+13y^6+17y^5+17y^4+12y^3+6y^2+y-1)^4$
c_3, c_5, c_9 c_{11}	$y^{36}+3y^{35}+\cdots+24y+1$
c_4, c_{10}	$y^{36}+23y^{35}+\cdots-6905768y+790321$
c_6, c_{12}	$(y^2+y+1)^{18}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = -0.230058 - 0.974073I$ $b = 0.47792 + 2.18649I$	$4.37135 + 5.39594I$	$7.28409 - 7.62995I$
$u = -0.500000 + 0.866025I$ $a = -0.059643 + 0.996048I$ $b = 0.11516 - 1.92059I$	$-1.78344 + 6.15314I$	$-0.51499 - 11.09103I$
$u = -0.500000 + 0.866025I$ $a = 0.134816 - 0.936195I$ $b = -0.963253 + 0.522002I$	$-1.78344 + 1.96639I$	$-0.51499 - 2.76537I$
$u = -0.500000 + 0.866025I$ $a = 0.206770 + 1.051500I$ $b = -0.35966 - 2.31708I$	$3.59813 + 11.14470I$	$5.57680 - 12.84155I$
$u = -0.500000 + 0.866025I$ $a = 0.437408 - 0.992085I$ $b = -1.14872 + 1.23939I$	$0.61694 + 6.51418I$	$2.32792 - 9.84118I$
$u = -0.500000 + 0.866025I$ $a = -0.374860 + 1.040260I$ $b = 0.94469 - 1.53262I$	$0.61694 + 1.60535I$	$2.32792 - 4.01523I$
$u = -0.500000 + 0.866025I$ $a = -1.007240 + 0.499722I$ $b = 0.295924 - 0.252417I$	$0.61694 + 6.51418I$	$2.32792 - 9.84118I$
$u = -0.500000 + 0.866025I$ $a = 1.086170 - 0.792955I$ $b = -0.516345 + 0.300592I$	$0.61694 + 1.60535I$	$2.32792 - 4.01523I$
$u = -0.500000 + 0.866025I$ $a = 0.007976 - 0.628437I$ $b = 0.404990 + 1.343720I$	$1.19845 + 4.05977I$	$8.65235 - 6.92820I$
$u = -0.500000 + 0.866025I$ $a = -0.420943 + 1.343720I$ $b = 0.833909 - 0.628437I$	$1.19845 + 4.05977I$	$8.65235 - 6.92820I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.500000+0.866025I$ $a=-0.31206-1.40188I$ $b=-0.707522+0.636684I$	$3.59813-3.02516I$	$5.57680-1.01485I$
$u=-0.500000+0.866025I$ $a=\quad 0.16655+1.47381I$ $b=\quad 0.759506-0.652955I$	$4.37135+2.72360I$	$7.28409-6.22645I$
$u=-0.500000+0.866025I$ $a=-0.414405-0.261400I$ $b=\quad 1.34046+1.08226I$	$4.37135+2.72360I$	$7.28409-6.22645I$
$u=-0.500000+0.866025I$ $a=\quad 0.464951+0.136300I$ $b=-1.48453-0.90150I$	$3.59813-3.02516I$	$5.57680-1.01485I$
$u=-0.500000+0.866025I$ $a=\quad 0.88808-1.41024I$ $b=-0.832563+0.485697I$	$-1.78344+6.15314I$	$-0.51499-11.09103I$
$u=-0.500000+0.866025I$ $a=-0.190333+0.011651I$ $b=-0.638104-0.425844I$	$-1.78344+1.96639I$	$-0.51499-2.76537I$
$u=-0.500000+0.866025I$ $a=-0.69599+1.79493I$ $b=\quad 0.943853-0.582518I$	$4.37135+5.39594I$	$7.28409-7.62995I$
$u=-0.500000+0.866025I$ $a=\quad 0.81281-1.81670I$ $b=-0.965703+0.551117I$	$3.59813+11.14470I$	$5.57680-12.84155I$
$u=-0.500000-0.866025I$ $a=-0.230058+0.974073I$ $b=\quad 0.47792-2.18649I$	$4.37135-5.39594I$	$7.28409+7.62995I$
$u=-0.500000-0.866025I$ $a=-0.059643-0.996048I$ $b=\quad 0.11516+1.92059I$	$-1.78344-6.15314I$	$-0.51499+11.09103I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.500000-0.866025I$ $a=\ 0.134816+0.936195I$ $b=-0.963253-0.522002I$	$-1.78344-1.96639I$	$-0.51499+2.76537I$
$u=-0.500000-0.866025I$ $a=\ 0.206770-1.051500I$ $b=-0.35966+2.31708I$	$3.59813-11.14470I$	$5.57680+12.84155I$
$u=-0.500000-0.866025I$ $a=\ 0.437408+0.992085I$ $b=-1.14872-1.23939I$	$0.61694-6.51418I$	$2.32792+9.84118I$
$u=-0.500000-0.866025I$ $a=-0.374860-1.040260I$ $b=\ 0.94469+1.53262I$	$0.61694-1.60535I$	$2.32792+4.01523I$
$u=-0.500000-0.866025I$ $a=-1.007240-0.499722I$ $b=\ 0.295924+0.252417I$	$0.61694-6.51418I$	$2.32792+9.84118I$
$u=-0.500000-0.866025I$ $a=\ 1.086170+0.792955I$ $b=-0.516345-0.300592I$	$0.61694-1.60535I$	$2.32792+4.01523I$
$u=-0.500000-0.866025I$ $a=\ 0.007976+0.628437I$ $b=\ 0.404990-1.343720I$	$1.19845-4.05977I$	$8.65235+6.92820I$
$u=-0.500000-0.866025I$ $a=-0.420943-1.343720I$ $b=\ 0.833909+0.628437I$	$1.19845-4.05977I$	$8.65235+6.92820I$
$u=-0.500000-0.866025I$ $a=-0.31206+1.40188I$ $b=-0.707522-0.636684I$	$3.59813+3.02516I$	$5.57680+1.01485I$
$u=-0.500000-0.866025I$ $a=\ 0.16655-1.47381I$ $b=\ 0.759506+0.652955I$	$4.37135-2.72360I$	$7.28409+6.22645I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.500000-0.866025I$ $a=-0.414405+0.261400I$ $b=\ \ 1.34046-1.08226I$	$4.37135-2.72360I$	$7.28409+6.22645I$
$u=-0.500000-0.866025I$ $a=\ \ 0.464951-0.136300I$ $b=-1.48453+0.90150I$	$3.59813+3.02516I$	$5.57680+1.01485I$
$u=-0.500000-0.866025I$ $a=\ \ 0.88808+1.41024I$ $b=-0.832563-0.485697I$	$-1.78344-6.15314I$	$-0.51499+11.09103I$
$u=-0.500000-0.866025I$ $a=-0.190333-0.011651I$ $b=-0.638104+0.425844I$	$-1.78344-1.96639I$	$-0.51499+2.76537I$
$u=-0.500000-0.866025I$ $a=-0.69599-1.79493I$ $b=\ \ 0.943853+0.582518I$	$4.37135-5.39594I$	$7.28409+7.62995I$
$u=-0.500000-0.866025I$ $a=\ \ 0.81281+1.81670I$ $b=-0.965703-0.551117I$	$3.59813-11.14470I$	$5.57680+12.84155I$

IV. $\boldsymbol{I_4^u = \langle -1.67 \times 10^{56} a^{17} u^3 + 5.44 \times 10^{55} a^{16} u^3 + \cdots - 7.19 \times 10^{55} a + 1.87 \times 10^{54},\ 4a^{17}u^3 - 7a^{16}u^3 + \cdots + 13417a + 5031,\ u^4 + u^3 - 2u + 1 \rangle}$

(i) Arc colorings

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

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

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} a \\ 108.572a^{17}u^3 - 35.2913a^{16}u^3 + \cdots + 46.6303a - 1.21292 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 108.572a^{17}u^3 - 35.2913a^{16}u^3 + \cdots + 47.6303a - 1.21292 \\ -116.476a^{17}u^3 + 136.577a^{16}u^3 + \cdots + 65.0602a - 3.00253 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -149.864a^{17}u^3 + 37.5024a^{16}u^3 + \cdots + 0.610464a + 0.105646 \\ 53.3271a^{17}u^3 - 66.8936a^{16}u^3 + \cdots - 2.37518a + 1.84859 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -a^2u \\ 53.6884a^{17}u^3 - 25.0434a^{16}u^3 + \cdots + 3.53974a - 0.898780 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 108.572a^{17}u^3 - 35.2913a^{16}u^3 + \cdots + 47.6303a - 1.21292 \\ 108.572a^{17}u^3 - 35.2913a^{16}u^3 + \cdots + 46.6303a - 1.21292 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 156.954a^{17}u^3 - 43.1785a^{16}u^3 + \cdots - 4.08616a + 6.55747 \\ -68.0949a^{17}u^3 + 128.690a^{16}u^3 + \cdots + 12.3438a + 4.76786 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 159.024a^{17}u^3 - 93.8678a^{16}u^3 + \cdots - 0.0192247a - 7.05312 \\ -525.923a^{17}u^3 + 386.245a^{16}u^3 + \cdots - 18.6907a - 5.08371 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -48.7768a^{17}u^3 + 18.2261a^{16}u^3 + \cdots + 12.1965a + 1.36890 \\ 129.470a^{17}u^3 - 40.7216a^{16}u^3 + \cdots + 27.9965a + 0.657463 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 119.317a^{17}u^3 - 37.5030a^{16}u^3 + \cdots + 1.98299a + 6.41564 \\ -523.653a^{17}u^3 + 331.649a^{16}u^3 + \cdots + 15.7953a + 5.61306 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -628.806a^{17}u^3 + 906.462a^{16}u^3 + \cdots + 9.62978a - 13.8693$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)^8$
c_2, c_8	$(u^9-u^8+2u^7-u^6+3u^5-u^4+2u^3+u+1)^8$
c_3, c_5, c_9 c_{11}	$u^{72}-u^{71}+\cdots+44u+1$
c_4, c_{10}	$(u^{36}-u^{35}+\cdots-172u+49)^2$
c_6, c_{12}	$(u^4+u^3-2u+1)^{18}$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$(y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1)^8$
c_2, c_8	$(y^9 + 3y^8 + 8y^7 + 13y^6 + 17y^5 + 17y^4 + 12y^3 + 6y^2 + y - 1)^8$
c_3, c_5, c_9 c_{11}	$y^{72} + 33y^{71} + \cdots - 508y + 1$
c_4, c_{10}	$(y^{36} - 29y^{35} + \cdots + 32744y + 2401)^2$
c_6, c_{12}	$(y^4 - y^3 + 6y^2 - 4y + 1)^{18}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.621964 + 0.187730I$ $a = 0.043395 - 0.899305I$ $b = 1.74254 + 0.89462I$	$-5.07330 - 6.15314I$	$-12.5150 + 11.0910I$
$u = 0.621964 + 0.187730I$ $a = -0.172784 - 1.279290I$ $b = 1.72787 + 1.37986I$	$0.30826 - 11.14470I$	$-6.4232 + 12.8416I$
$u = 0.621964 + 0.187730I$ $a = 0.083812 + 1.340970I$ $b = -1.58336 - 1.37684I$	$1.08148 - 5.39594I$	$-4.71591 + 7.62995I$
$u = 0.621964 + 0.187730I$ $a = -0.472186 - 1.302990I$ $b = -1.002860 + 0.435895I$	$-5.07330 - 1.96639I$	$-12.51499 + 2.76537I$
$u = 0.621964 + 0.187730I$ $a = -0.52748 + 1.34407I$ $b = -1.20229 - 0.86663I$	$-2.09142 - 4.05977I$	$-3.34765 + 6.92820I$
$u = 0.621964 + 0.187730I$ $a = -0.140383 - 0.326691I$ $b = -1.72704 + 0.06713I$	$-2.67293 - 6.51418I$	$-9.67208 + 9.84118I$
$u = 0.621964 + 0.187730I$ $a = -0.03091 - 1.91201I$ $b = -0.233839 + 0.972155I$	$0.30826 + 3.02516I$	$-6.42320 + 0.I$
$u = 0.621964 + 0.187730I$ $a = 0.0660544 - 0.0481691I$ $b = 1.85458 + 0.20571I$	$-2.67293 - 1.60535I$	$-9.67208 + 4.01523I$
$u = 0.621964 + 0.187730I$ $a = -0.17460 + 2.03839I$ $b = -0.277023 - 0.922937I$	$1.08148 - 2.72360I$	0
$u = 0.621964 + 0.187730I$ $a = 1.57671 + 1.47923I$ $b = 0.789327 + 0.151353I$	$-2.09142 - 4.05977I$	0

Solutions to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.621964 + 0.187730I$ $a = 1.23483 - 1.98742I$ $b = 0.947343 + 0.488649I$	$-5.07330 - 1.96639I$	0
$u = 0.621964 + 0.187730I$ $a = 0.32744 + 2.47182I$ $b = 0.029164 - 0.289477I$	$1.08148 - 2.72360I$	0
$u = 0.621964 + 0.187730I$ $a = 2.48906 - 1.09660I$ $b = 1.157210 + 0.425237I$	$-2.67293 - 6.51418I$	0
$u = 0.621964 + 0.187730I$ $a = 0.25190 - 2.73154I$ $b = 0.386730 + 0.293429I$	$0.30826 + 3.02516I$	0
$u = 0.621964 + 0.187730I$ $a = -2.77420 + 0.50418I$ $b = -1.143270 - 0.453013I$	$-2.67293 - 1.60535I$	0
$u = 0.621964 + 0.187730I$ $a = -2.76982 - 1.09444I$ $b = -0.914102 - 0.480431I$	$-5.07330 - 6.15314I$	0
$u = 0.621964 + 0.187730I$ $a = 2.74594 + 2.17440I$ $b = 0.657306 + 0.555983I$	$1.08148 - 5.39594I$	0
$u = 0.621964 + 0.187730I$ $a = -3.02715 - 2.09291I$ $b = -0.708291 - 0.614661I$	$0.30826 - 11.14470I$	0
$u = 0.621964 - 0.187730I$ $a = 0.043395 + 0.899305I$ $b = 1.74254 - 0.89462I$	$-5.07330 + 6.15314I$	$-12.5150 - 11.0910I$
$u = 0.621964 - 0.187730I$ $a = -0.172784 + 1.279290I$ $b = 1.72787 - 1.37986I$	$0.30826 + 11.14470I$	$-6.4232 - 12.8416I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.621964 - 0.187730I$ $a = 0.083812 - 1.340970I$ $b = -1.58336 + 1.37684I$	$1.08148 + 5.39594I$	$-4.71591 - 7.62995I$
$u = 0.621964 - 0.187730I$ $a = -0.472186 + 1.302990I$ $b = -1.002860 - 0.435895I$	$-5.07330 + 1.96639I$	$-12.51499 - 2.76537I$
$u = 0.621964 - 0.187730I$ $a = -0.52748 - 1.34407I$ $b = -1.20229 + 0.86663I$	$-2.09142 + 4.05977I$	$-3.34765 - 6.92820I$
$u = 0.621964 - 0.187730I$ $a = -0.140383 + 0.326691I$ $b = -1.72704 - 0.06713I$	$-2.67293 + 6.51418I$	$-9.67208 - 9.84118I$
$u = 0.621964 - 0.187730I$ $a = -0.03091 + 1.91201I$ $b = -0.233839 - 0.972155I$	$0.30826 - 3.02516I$	$-6.42320 + 0.I$
$u = 0.621964 - 0.187730I$ $a = 0.0660544 + 0.0481691I$ $b = 1.85458 - 0.20571I$	$-2.67293 + 1.60535I$	$-9.67208 - 4.01523I$
$u = 0.621964 - 0.187730I$ $a = -0.17460 - 2.03839I$ $b = -0.277023 + 0.922937I$	$1.08148 + 2.72360I$	0
$u = 0.621964 - 0.187730I$ $a = 1.57671 - 1.47923I$ $b = 0.789327 - 0.151353I$	$-2.09142 + 4.05977I$	0
$u = 0.621964 - 0.187730I$ $a = 1.23483 + 1.98742I$ $b = 0.947343 - 0.488649I$	$-5.07330 + 1.96639I$	0
$u = 0.621964 - 0.187730I$ $a = 0.32744 - 2.47182I$ $b = 0.029164 + 0.289477I$	$1.08148 + 2.72360I$	0

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.621964 - 0.187730I$ $a = 2.48906 + 1.09660I$ $b = 1.157210 - 0.425237I$	$-2.67293 + 6.51418I$	0
$u = 0.621964 - 0.187730I$ $a = 0.25190 + 2.73154I$ $b = 0.386730 - 0.293429I$	$0.30826 - 3.02516I$	0
$u = 0.621964 - 0.187730I$ $a = -2.77420 - 0.50418I$ $b = -1.143270 + 0.453013I$	$-2.67293 + 1.60535I$	0
$u = 0.621964 - 0.187730I$ $a = -2.76982 + 1.09444I$ $b = -0.914102 + 0.480431I$	$-5.07330 + 6.15314I$	0
$u = 0.621964 - 0.187730I$ $a = 2.74594 - 2.17440I$ $b = 0.657306 - 0.555983I$	$1.08148 + 5.39594I$	0
$u = 0.621964 - 0.187730I$ $a = -3.02715 + 2.09291I$ $b = -0.708291 + 0.614661I$	$0.30826 + 11.14470I$	0
$u = -1.12196 + 1.05376I$ $a = -0.215767 - 0.983553I$ $b = -1.58336 + 1.37684I$	$1.08148 + 5.39594I$	$-4.71591 - 7.62995I$
$u = -1.12196 + 1.05376I$ $a = -0.054232 + 0.990851I$ $b = 1.74254 - 0.89462I$	$-5.07330 + 6.15314I$	$-12.5150 - 11.0910I$
$u = -1.12196 + 1.05376I$ $a = 0.474654 - 0.871187I$ $b = -1.72704 - 0.06713I$	$-2.67293 + 6.51418I$	$-9.67208 - 9.84118I$
$u = -1.12196 + 1.05376I$ $a = -0.383243 + 0.960480I$ $b = 1.85458 - 0.20571I$	$-2.67293 + 1.60535I$	$-9.67208 - 4.01523I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.12196+1.05376I$ $a=\ 0.192552+1.057560I$ $b=\ 1.72787-1.37986I$	$0.30826+11.14470I$	$-6.4232-12.8416I$
$u=-1.12196+1.05376I$ $a=\ 0.101533-0.868580I$ $b=-0.708291+0.614661I$	$0.30826+11.14470I$	$-6.4232-12.8416I$
$u=-1.12196+1.05376I$ $a=\ 0.239834-0.817475I$ $b=-0.914102+0.480431I$	$-5.07330+6.15314I$	$-12.5150-11.0910I$
$u=-1.12196+1.05376I$ $a=\ 0.387624-0.754019I$ $b=-1.143270+0.453013I$	$-2.67293+1.60535I$	$-9.67208-4.01523I$
$u=-1.12196+1.05376I$ $a=-0.083690+0.823933I$ $b=\ 0.657306-0.555983I$	$1.08148+5.39594I$	$-4.71591-7.62995I$
$u=-1.12196+1.05376I$ $a=-0.402530+0.677684I$ $b=\ 1.157210-0.425237I$	$-2.67293+6.51418I$	$-9.67208-9.84118I$
$u=-1.12196+1.05376I$ $a=\ 0.459286-0.540354I$ $b=-1.002860-0.435895I$	$-5.07330+1.96639I$	$-12.51499-2.76537I$
$u=-1.12196+1.05376I$ $a=\ 0.001737-0.694392I$ $b=-1.20229+0.86663I$	$-2.09142+4.05977I$	$-3.34765-6.92820I$
$u=-1.12196+1.05376I$ $a=-0.225042+0.656570I$ $b=\ 0.789327-0.151353I$	$-2.09142+4.05977I$	$-3.34765-6.92820I$
$u=-1.12196+1.05376I$ $a=-0.226943+0.437766I$ $b=\ 0.947343-0.488649I$	$-5.07330+1.96639I$	$-12.51499-2.76537I$

Solutions to I^u_4	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.12196 + 1.05376I$ $a = 0.450119 - 0.069429I$ $b = -0.233839 - 0.972155I$	$0.30826 - 3.02516I$	$-6.42320 - 1.01485I$
$u = -1.12196 + 1.05376I$ $a = -0.267479 - 0.164880I$ $b = -0.277023 + 0.922937I$	$1.08148 + 2.72360I$	$-4.71591 - 6.22645I$
$u = -1.12196 + 1.05376I$ $a = -0.067838 + 0.216987I$ $b = 0.029164 + 0.289477I$	$1.08148 + 2.72360I$	$-4.71591 - 6.22645I$
$u = -1.12196 + 1.05376I$ $a = -0.1102070 - 0.0121677I$ $b = 0.386730 - 0.293429I$	$0.30826 - 3.02516I$	$-6.42320 - 1.01485I$
$u = -1.12196 - 1.05376I$ $a = -0.215767 + 0.983553I$ $b = -1.58336 - 1.37684I$	$1.08148 - 5.39594I$	$-4.71591 + 7.62995I$
$u = -1.12196 - 1.05376I$ $a = -0.054232 - 0.990851I$ $b = 1.74254 + 0.89462I$	$-5.07330 - 6.15314I$	$-12.5150 + 11.0910I$
$u = -1.12196 - 1.05376I$ $a = 0.474654 + 0.871187I$ $b = -1.72704 + 0.06713I$	$-2.67293 - 6.51418I$	$-9.67208 + 9.84118I$
$u = -1.12196 - 1.05376I$ $a = -0.383243 - 0.960480I$ $b = 1.85458 + 0.20571I$	$-2.67293 - 1.60535I$	$-9.67208 + 4.01523I$
$u = -1.12196 - 1.05376I$ $a = 0.192552 - 1.057560I$ $b = 1.72787 + 1.37986I$	$0.30826 - 11.14470I$	$-6.4232 + 12.8416I$
$u = -1.12196 - 1.05376I$ $a = 0.101533 + 0.868580I$ $b = -0.708291 - 0.614661I$	$0.30826 - 11.14470I$	$-6.4232 + 12.8416I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.12196 - 1.05376I$ $a = 0.239834 + 0.817475I$ $b = -0.914102 - 0.480431I$	$-5.07330 - 6.15314I$	$-12.5150 + 11.0910I$
$u = -1.12196 - 1.05376I$ $a = 0.387624 + 0.754019I$ $b = -1.143270 - 0.453013I$	$-2.67293 - 1.60535I$	$-9.67208 + 4.01523I$
$u = -1.12196 - 1.05376I$ $a = -0.083690 - 0.823933I$ $b = 0.657306 + 0.555983I$	$1.08148 - 5.39594I$	$-4.71591 + 7.62995I$
$u = -1.12196 - 1.05376I$ $a = -0.402530 - 0.677684I$ $b = 1.157210 + 0.425237I$	$-2.67293 - 6.51418I$	$-9.67208 + 9.84118I$
$u = -1.12196 - 1.05376I$ $a = 0.459286 + 0.540354I$ $b = -1.002860 + 0.435895I$	$-5.07330 - 1.96639I$	$-12.51499 + 2.76537I$
$u = -1.12196 - 1.05376I$ $a = 0.001737 + 0.694392I$ $b = -1.20229 - 0.86663I$	$-2.09142 - 4.05977I$	$-3.34765 + 6.92820I$
$u = -1.12196 - 1.05376I$ $a = -0.225042 - 0.656570I$ $b = 0.789327 + 0.151353I$	$-2.09142 - 4.05977I$	$-3.34765 + 6.92820I$
$u = -1.12196 - 1.05376I$ $a = -0.226943 - 0.437766I$ $b = 0.947343 + 0.488649I$	$-5.07330 - 1.96639I$	$-12.51499 + 2.76537I$
$u = -1.12196 - 1.05376I$ $a = 0.450119 + 0.069429I$ $b = -0.233839 + 0.972155I$	$0.30826 + 3.02516I$	$-6.42320 + 1.01485I$
$u = -1.12196 - 1.05376I$ $a = -0.267479 + 0.164880I$ $b = -0.277023 - 0.922937I$	$1.08148 - 2.72360I$	$-4.71591 + 6.22645I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.12196 - 1.05376I$ $a = -0.067838 - 0.216987I$ $b = \quad 0.029164 - 0.289477I$	$1.08148 - 2.72360I$	$-4.71591 + 6.22645I$
$u = -1.12196 - 1.05376I$ $a = -0.1102070 + 0.0121677I$ $b = \quad 0.386730 + 0.293429I$	$0.30826 + 3.02516I$	$-6.42320 + 1.01485I$

V. $\boldsymbol{I^u_5 = \langle -6.09\times 10^{26}u^{37} - 1.06\times 10^{28}u^{36} + \cdots + 4.67\times 10^{25}b - 8.22\times 10^{26},\ 2.33\times 10^{27}u^{37} + 4.03\times 10^{28}u^{36} + \cdots + 4.67\times 10^{25}a + 3.83\times 10^{27},\ u^{38} + 18u^{37} + \cdots - 8u^2 + 1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -49.7401u^{37} - 863.168u^{36} + \cdots + 119.613u - 81.9531 \\ 13.0201u^{37} + 226.837u^{36} + \cdots - 32.2130u + 17.5851 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -17.5851u^{37} - 303.512u^{36} + \cdots + 37.6599u - 32.2130 \\ 24.6296u^{37} + 428.883u^{36} + \cdots - 64.3680u + 36.7200 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 3.78635u^{37} + 66.0564u^{36} + \cdots - 12.7836u + 2.99007 \\ -4.37537u^{37} - 75.9630u^{36} + \cdots + 9.65766u - 7.35596 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 27.6107u^{37} + 478.836u^{36} + \cdots - 65.2823u + 40.0547 \\ -5.66758u^{37} - 98.4469u^{36} + \cdots + 13.4440u - 9.45394 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -36.7200u^{37} - 636.331u^{36} + \cdots + 87.4000u - 64.3680 \\ 13.0201u^{37} + 226.837u^{36} + \cdots - 32.2130u + 17.5851 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 29.2526u^{37} + 512.522u^{36} + \cdots - 92.8454u + 54.6371 \\ 7.79664u^{37} + 134.980u^{36} + \cdots - 13.6533u + 9.18470 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -42.3215u^{37} - 736.848u^{36} + \cdots + 96.8440u - 66.4455 \\ 13.3033u^{37} + 230.788u^{36} + \cdots - 33.3099u + 23.2834 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -18.9250u^{37} - 326.508u^{36} + \cdots + 24.5166u - 31.6821 \\ 7.89293u^{37} + 136.936u^{36} + \cdots - 22.9497u + 12.6194 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -65.7788u^{37} - 1141.21u^{36} + \cdots + 165.415u - 104.226 \\ 12.6297u^{37} + 218.941u^{36} + \cdots - 29.2615u + 17.0670 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$$= \frac{2068585394142215844689116467 2}{46744454888068146617360707}u^{37} + \frac{35846670873962223552940647525 5}{46744454888068146617360707}u^{36} + \cdots - \frac{45296260896340787040013546468}{46744454888068146617360707}u + \frac{30762563203959042596150597180}{46744454888068146617360707}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$(u^{19} - 8u^{18} + \cdots + 102u - 13)^2$
c_2, c_8	$u^{38} + 8u^{36} + \cdots + 102u^2 + 13$
c_3, c_5, c_9 c_{11}	$u^{38} + 2u^{37} + \cdots - 4u + 1$
c_4, c_{10}	$(u^{19} - u^{18} + \cdots + 4u + 1)^2$
c_6, c_{12}	$u^{38} + 18u^{37} + \cdots - 8u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$(y^{19} + 14y^{18} + \cdots - 282y - 169)^2$
c_2, c_8	$(y^{19} + 8y^{18} + \cdots + 102y + 13)^2$
c_3, c_5, c_9 c_{11}	$y^{38} + 18y^{37} + \cdots - 14y + 1$
c_4, c_{10}	$(y^{19} - 11y^{18} + \cdots + 16y - 1)^2$
c_6, c_{12}	$y^{38} - 10y^{37} + \cdots - 16y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.956371+0.209083I$ $a=-0.426382+0.952356I$ $b=\ \ 0.218177$	-4.52242	$-10.25873+0.I$
$u=-0.956371-0.209083I$ $a=-0.426382-0.952356I$ $b=\ \ 0.218177$	-4.52242	$-10.25873+0.I$
$u=\ \ 0.708217+0.371640I$ $a=\ \ 0.779209-0.425669I$ $b=\ \ 1.217330+0.243587I$	$-3.97184-2.91027I$	$-7.53541+6.80891I$
$u=\ \ 0.708217-0.371640I$ $a=\ \ 0.779209+0.425669I$ $b=\ \ 1.217330-0.243587I$	$-3.97184+2.91027I$	$-7.53541-6.80891I$
$u=-0.680360+0.232684I$ $a=\ \ 0.12394+2.36528I$ $b=\ \ 0.164864-0.652840I$	$1.39868+2.79168I$	$29.1331-14.8928I$
$u=-0.680360-0.232684I$ $a=\ \ 0.12394-2.36528I$ $b=\ \ 0.164864+0.652840I$	$1.39868-2.79168I$	$29.1331+14.8928I$
$u=\ \ 0.696736+0.116954I$ $a=-0.828458+0.629068I$ $b=-1.144140+0.503157I$	$-4.46607+5.38037I$	$-6.28600-3.52683I$
$u=\ \ 0.696736-0.116954I$ $a=-0.828458-0.629068I$ $b=-1.144140-0.503157I$	$-4.46607-5.38037I$	$-6.28600+3.52683I$
$u=-0.926766+0.922161I$ $a=\ \ 0.056787+1.058670I$ $b=\ \ 0.781126-1.016820I$	$2.09860+4.90010I$	0
$u=-0.926766-0.922161I$ $a=\ \ 0.056787-1.058670I$ $b=\ \ 0.781126+1.016820I$	$2.09860-4.90010I$	0

Solutions to I_5^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.961427 + 0.927010I$ $a = -0.048774 - 1.101300I$ $b = -0.898430 + 1.028960I$	$1.25797 + 10.62750I$	0
$u = -0.961427 - 0.927010I$ $a = -0.048774 + 1.101300I$ $b = -0.898430 - 1.028960I$	$1.25797 - 10.62750I$	0
$u = -0.643666 + 0.039085I$ $a = -0.46958 - 2.47701I$ $b = 0.080602 + 0.577184I$	$0.54407 - 3.39673I$	$5.7602 + 20.3794I$
$u = -0.643666 - 0.039085I$ $a = -0.46958 + 2.47701I$ $b = 0.080602 - 0.577184I$	$0.54407 + 3.39673I$	$5.7602 - 20.3794I$
$u = -1.207910 + 0.675618I$ $a = -0.262823 - 0.887861I$ $b = -0.795322 + 0.433703I$	$-4.51012 + 5.17024I$	0
$u = -1.207910 - 0.675618I$ $a = -0.262823 + 0.887861I$ $b = -0.795322 - 0.433703I$	$-4.51012 - 5.17024I$	0
$u = 1.22909 + 0.82211I$ $a = -0.033093 + 0.255724I$ $b = -0.795322 + 0.433703I$	$-4.51012 + 5.17024I$	0
$u = 1.22909 - 0.82211I$ $a = -0.033093 - 0.255724I$ $b = -0.795322 - 0.433703I$	$-4.51012 - 5.17024I$	0
$u = -1.06025 + 1.03273I$ $a = 0.429799 - 0.885490I$ $b = -1.45561 + 0.39048I$	$-2.07056 + 1.34541I$	0
$u = -1.06025 - 1.03273I$ $a = 0.429799 + 0.885490I$ $b = -1.45561 - 0.39048I$	$-2.07056 - 1.34541I$	0

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.13619 + 0.95241I$ $a = 0.123399 - 0.867542I$ $b = -1.144140 + 0.503157I$	$-4.46607 + 5.38037I$	0
$u = -1.13619 - 0.95241I$ $a = 0.123399 + 0.867542I$ $b = -1.144140 - 0.503157I$	$-4.46607 - 5.38037I$	0
$u = 0.086477 + 0.509080I$ $a = -1.91796 - 0.77750I$ $b = 0.781126 - 1.016820I$	$2.09860 + 4.90010I$	$3.24966 - 3.54295I$
$u = 0.086477 - 0.509080I$ $a = -1.91796 + 0.77750I$ $b = 0.781126 + 1.016820I$	$2.09860 - 4.90010I$	$3.24966 + 3.54295I$
$u = -1.05596 + 1.05573I$ $a = -0.471156 + 0.803488I$ $b = 1.44050 - 0.29498I$	$-2.00144 + 6.38781I$	0
$u = -1.05596 - 1.05573I$ $a = -0.471156 - 0.803488I$ $b = 1.44050 + 0.29498I$	$-2.00144 - 6.38781I$	0
$u = 0.415981 + 0.216851I$ $a = 1.98843 - 0.91319I$ $b = 1.44050 + 0.29498I$	$-2.00144 - 6.38781I$	$4.83228 + 6.79489I$
$u = 0.415981 - 0.216851I$ $a = 1.98843 + 0.91319I$ $b = 1.44050 - 0.29498I$	$-2.00144 + 6.38781I$	$4.83228 - 6.79489I$
$u = 0.159290 + 0.432216I$ $a = 1.81139 + 1.56961I$ $b = -0.898430 + 1.028960I$	$1.25797 + 10.62750I$	$1.70992 - 8.11480I$
$u = 0.159290 - 0.432216I$ $a = 1.81139 - 1.56961I$ $b = -0.898430 - 1.028960I$	$1.25797 - 10.62750I$	$1.70992 + 8.11480I$

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.417128 + 0.133689I$ $a = -2.39275 + 0.34238I$ $b = -1.45561 - 0.39048I$	$-2.07056 - 1.34541I$	$4.35277 - 1.87828I$
$u = 0.417128 - 0.133689I$ $a = -2.39275 - 0.34238I$ $b = -1.45561 + 0.39048I$	$-2.07056 + 1.34541I$	$4.35277 + 1.87828I$
$u = -1.15030 + 1.12405I$ $a = -0.292036 + 0.614823I$ $b = 1.217330 - 0.243587I$	$-3.97184 + 2.91027I$	0
$u = -1.15030 - 1.12405I$ $a = -0.292036 - 0.614823I$ $b = 1.217330 + 0.243587I$	$-3.97184 - 2.91027I$	0
$u = -1.65369 + 0.97316I$ $a = -0.253999 + 0.051050I$ $b = 0.080602 + 0.577184I$	$0.54407 - 3.39673I$	0
$u = -1.65369 - 0.97316I$ $a = -0.253999 - 0.051050I$ $b = 0.080602 - 0.577184I$	$0.54407 + 3.39673I$	0
$u = -1.28003 + 1.79871I$ $a = 0.084060 + 0.144934I$ $b = 0.164864 - 0.652840I$	$1.39868 + 2.79168I$	0
$u = -1.28003 - 1.79871I$ $a = 0.084060 - 0.144934I$ $b = 0.164864 + 0.652840I$	$1.39868 - 2.79168I$	0

VI. $I_6^u = \langle 1.09 \times 10^{11} b + 1.62 \times 10^{11} a^{17} + \cdots + 4.84 \times 10^{11} a + 6.36 \times 10^{10},\ a^{18} - a^{17} + \cdots + 2a + 1,\ u + 1\rangle$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} a \\ -1.47791a^{17} + 2.50210a^{16} + \cdots - 4.42179a - 0.581644 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -1.47791a^{17} + 2.50210a^{16} + \cdots - 4.42179a - 0.581644 \\ -2.95582a^{17} + 5.00420a^{16} + \cdots - 9.84358a - 1.16329 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -1.02419a^{17} + 1.20248a^{16} + \cdots - 2.37418a - 0.477912 \\ -3.07256a^{17} + 3.60743a^{16} + \cdots - 7.12254a - 3.43374 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} a^2 \\ 1.02419a^{17} - 1.20248a^{16} + \cdots + 2.37418a + 0.477912 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -1.47791a^{17} + 2.50210a^{16} + \cdots - 3.42179a - 0.581644 \\ -1.47791a^{17} + 2.50210a^{16} + \cdots - 4.42179a - 0.581644 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -a \\ -1.47791a^{17} + 2.50210a^{16} + \cdots - 5.42179a - 0.581644 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -1.65620a^{17} + 2.53991a^{16} + \cdots - 4.99225a - 1.60583 \\ -2.01279a^{17} + 2.61554a^{16} + \cdots - 7.13317a - 3.65420 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.00365065a^{17} - 0.513754a^{16} + \cdots + 1.02086a - 0.477574 \\ 1.29206a^{17} - 2.58010a^{16} + \cdots + 4.85068a - 0.0491338 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.285402a^{17} + 0.468854a^{16} + \cdots - 1.91849a - 0.280952 \\ -1.58468a^{17} + 1.91226a^{16} + \cdots - 6.75544a - 3.23277 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= \frac{1024600473764}{109385111613}a^{17} - \frac{1193452041560}{109385111613}a^{16} + \cdots + \frac{992360294816}{36461703871}a + \frac{503797756390}{109385111613}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)^2$
c_2, c_8	$(u^9-u^8+2u^7-u^6+3u^5-u^4+2u^3+u+1)^2$
c_3, c_5, c_9 c_{11}	$u^{18}-u^{17}+\cdots+2u+1$
c_4, c_{10}	$(u^9-u^8-2u^7+3u^6+u^5-3u^4+2u^3-u+1)^2$
c_6, c_{12}	$(u+1)^{18}$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$(y^9+7y^8+20y^7+25y^6+5y^5-15y^4+22y^2+13y-1)^2$
c_2, c_8	$(y^9+3y^8+8y^7+13y^6+17y^5+17y^4+12y^3+6y^2+y-1)^2$
c_3, c_5, c_9 c_{11}	$y^{18}+3y^{17}+\cdots+8y+1$
c_4, c_{10}	$(y^9-5y^8+12y^7-15y^6+9y^5+y^4-4y^3+2y^2+y-1)^2$
c_6, c_{12}	$(y-1)^{18}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = -0.030512 + 0.922109I$ $b = 0.141484 - 0.739668I$	$-2.67293 + 2.45442I$	$-9.67208 - 2.91298I$
$u = -1.00000$ $a = -0.030512 - 0.922109I$ $b = 0.141484 + 0.739668I$	$-2.67293 - 2.45442I$	$-9.67208 + 2.91298I$
$u = -1.00000$ $a = -0.144884 + 0.672802I$ $b = 0.772920 - 0.510351I$	$-5.07330 - 2.09337I$	$-12.51499 + 4.16283I$
$u = -1.00000$ $a = -0.144884 - 0.672802I$ $b = 0.772920 + 0.510351I$	$-5.07330 + 2.09337I$	$-12.51499 - 4.16283I$
$u = -1.00000$ $a = -0.395368 + 0.496909I$ $b = 1.172470 - 0.500383I$	$0.30826 - 7.08493I$	$-6.42320 + 5.91335I$
$u = -1.00000$ $a = -0.395368 - 0.496909I$ $b = 1.172470 + 0.500383I$	$0.30826 + 7.08493I$	$-6.42320 - 5.91335I$
$u = -1.00000$ $a = -0.412966 + 0.383789I$ $b = -0.825933$	-2.09142	$-3.34765 + 0.I$
$u = -1.00000$ $a = -0.412966 - 0.383789I$ $b = -0.825933$	-2.09142	$-3.34765 + 0.I$
$u = -1.00000$ $a = 0.360883 + 0.410405I$ $b = -1.173910 - 0.391555I$	$1.08148 + 1.33617I$	$-4.71591 - 0.70175I$
$u = -1.00000$ $a = 0.360883 - 0.410405I$ $b = -1.173910 + 0.391555I$	$1.08148 - 1.33617I$	$-4.71591 + 0.70175I$

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = 0.91780 + 1.18315I$ $b = 0.772920 + 0.510351I$	$-5.07330 + 2.09337I$	$-12.51499 - 4.16283I$
$u = -1.00000$ $a = 0.91780 - 1.18315I$ $b = 0.772920 - 0.510351I$	$-5.07330 - 2.09337I$	$-12.51499 + 4.16283I$
$u = -1.00000$ $a = 0.17200 + 1.66178I$ $b = 0.141484 + 0.739668I$	$-2.67293 - 2.45442I$	$-9.67208 + 2.91298I$
$u = -1.00000$ $a = 0.17200 - 1.66178I$ $b = 0.141484 - 0.739668I$	$-2.67293 + 2.45442I$	$-9.67208 - 2.91298I$
$u = -1.00000$ $a = -1.53479 + 0.80196I$ $b = -1.173910 + 0.391555I$	$1.08148 - 1.33617I$	$-4.71591 + 0.70175I$
$u = -1.00000$ $a = -1.53479 - 0.80196I$ $b = -1.173910 - 0.391555I$	$1.08148 + 1.33617I$	$-4.71591 - 0.70175I$
$u = -1.00000$ $a = 1.56784 + 0.99729I$ $b = 1.172470 + 0.500383I$	$0.30826 + 7.08493I$	$-6.42320 - 5.91335I$
$u = -1.00000$ $a = 1.56784 - 0.99729I$ $b = 1.172470 - 0.500383I$	$0.30826 - 7.08493I$	$-6.42320 + 5.91335I$

VII. $I_7^u = \langle b+u,\ a-u,\ u^2+u+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -8u - 4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_7^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = -0.500000 + 0.866025I$ $b = \quad 0.500000 - 0.866025I$	$4.05977I$	$0. - 6.92820I$
$u = -0.500000 - 0.866025I$ $a = -0.500000 - 0.866025I$ $b = \quad 0.500000 + 0.866025I$	$-4.05977I$	$0. + 6.92820I$

VIII. $I_1^v = \langle a,\ b^9 + b^8 - 2b^7 - 3b^6 + b^5 + 3b^4 + 2b^3 - b - 1,\ v - 1\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ b \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} b \\ b \end{pmatrix}$$
$$a_5 = \begin{pmatrix} b^2 + 1 \\ b^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ b^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} b \\ b \end{pmatrix}$$
$$a_1 = \begin{pmatrix} b \\ b \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -b^3 \\ -b^3 + b \end{pmatrix}$$
$$a_8 = \begin{pmatrix} b^6 - b^4 + 1 \\ b^6 - 2b^4 + b^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} b^3 \\ b^5 - b^3 + b \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4b^7 - 8b^5 - 4b^4 + 8b^3 + 4b^2 + 4b + 2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1$
c_2, c_8	$y^9 + 3y^8 + 8y^7 + 13y^6 + 17y^5 + 17y^4 + 12y^3 + 6y^2 + y - 1$
c_3, c_4, c_5 c_9, c_{10}, c_{11}	$y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1$
c_6, c_{12}	y^9

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 1.00000$ $a = 0$ $b = -0.772920 + 0.510351I$	$-1.78344 - 2.09337I$	$-0.51499 + 4.16283I$
$v = 1.00000$ $a = 0$ $b = -0.772920 - 0.510351I$	$-1.78344 + 2.09337I$	$-0.51499 - 4.16283I$
$v = 1.00000$ $a = 0$ $b = 0.825933$	1.19845	8.65230
$v = 1.00000$ $a = 0$ $b = 1.173910 + 0.391555I$	$4.37135 + 1.33617I$	$7.28409 - 0.70175I$
$v = 1.00000$ $a = 0$ $b = 1.173910 - 0.391555I$	$4.37135 - 1.33617I$	$7.28409 + 0.70175I$
$v = 1.00000$ $a = 0$ $b = -0.141484 + 0.739668I$	$0.61694 + 2.45442I$	$2.32792 - 2.91298I$
$v = 1.00000$ $a = 0$ $b = -0.141484 - 0.739668I$	$0.61694 - 2.45442I$	$2.32792 + 2.91298I$
$v = 1.00000$ $a = 0$ $b = -1.172470 + 0.500383I$	$3.59813 - 7.08493I$	$5.57680 + 5.91335I$
$v = 1.00000$ $a = 0$ $b = -1.172470 - 0.500383I$	$3.59813 + 7.08493I$	$5.57680 - 5.91335I$

IX. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^2(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)^{15}$ $\cdot((u^{10}+3u^9+\cdots+4u+16)^2)(u^{19}-8u^{18}+\cdots+102u-13)^2$ $\cdot(u^{27}+10u^{26}+\cdots+208u-64)$
c_2, c_8	$u^2(u^9-u^8+2u^7-u^6+3u^5-u^4+2u^3+u+1)^{14}$ $\cdot(u^9+u^8+2u^7+u^6+3u^5+u^4+2u^3+u-1)$ $\cdot(u^{10}+3u^9+6u^8+7u^7+7u^6+4u^5+2u^4+u^3+5u^2+6u+4)^2$ $\cdot(u^{27}+6u^{26}+\cdots+20u+8)(u^{38}+8u^{36}+\cdots+102u^2+13)$
c_3, c_5, c_9 c_{11}	$(u^2-u+1)(u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1)$ $\cdot(u^{18}-u^{17}+\cdots+2u+1)(u^{20}+u^{19}+\cdots+4u+1)$ $\cdot(u^{27}-u^{26}+\cdots-u+1)(u^{36}+u^{35}+\cdots+8u+1)$ $\cdot(u^{38}+2u^{37}+\cdots-4u+1)(u^{72}-u^{71}+\cdots+44u+1)$
c_4, c_{10}	$(u^2+u+1)(u^9-u^8-2u^7+3u^6+u^5-3u^4+2u^3-u+1)^2$ $\cdot(u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1)$ $\cdot(u^{10}-u^9+2u^8-2u^7+3u^6-2u^5+4u^4-3u^3+2u^2-u+1)^2$ $\cdot((u^{19}-u^{18}+\cdots+4u+1)^2)(u^{27}+2u^{26}+\cdots-u-4)$ $\cdot((u^{36}-u^{35}+\cdots-172u+49)^2)(u^{36}+3u^{35}+\cdots+2544u+889)$
c_6, c_{12}	$u^9(u+1)^{18}(u^2+u+1)^{19}(u^4+u^3-2u+1)^{18}$ $\cdot(u^{20}-17u^{19}+\cdots-5470u+547)(u^{27}-19u^{26}+\cdots-2467u+161)$ $\cdot(u^{38}+18u^{37}+\cdots-8u^2+1)$

X. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^2(y^9+7y^8+20y^7+25y^6+5y^5-15y^4+22y^2+13y-1)^{15}$ $\cdot((y^{10}+7y^9+\cdots+912y+256)^2)(y^{19}+14y^{18}+\cdots-282y-169)^2$ $\cdot(y^{27}+14y^{26}+\cdots+92416y-4096)$
c_2, c_8	$y^2(y^9+3y^8+8y^7+13y^6+17y^5+17y^4+12y^3+6y^2+y-1)^{15}$ $\cdot((y^{10}+3y^9+\cdots+4y+16)^2)(y^{19}+8y^{18}+\cdots+102y+13)^2$ $\cdot(y^{27}+10y^{26}+\cdots+208y-64)$
c_3, c_5, c_9 c_{11}	$(y^2+y+1)(y^9-5y^8+\cdots+y-1)$ $\cdot(y^{18}+3y^{17}+\cdots+8y+1)(y^{20}-3y^{19}+\cdots-6y+1)$ $\cdot(y^{27}-11y^{26}+\cdots+35y-1)(y^{36}+3y^{35}+\cdots+24y+1)$ $\cdot(y^{38}+18y^{37}+\cdots-14y+1)(y^{72}+33y^{71}+\cdots-508y+1)$
c_4, c_{10}	$(y^2+y+1)(y^9-5y^8+\cdots+y-1)^3$ $\cdot(y^{10}+3y^9+6y^8+12y^7+15y^6+16y^5+16y^4+9y^3+6y^2+3y+1)^2$ $\cdot((y^{19}-11y^{18}+\cdots+16y-1)^2)(y^{27}-16y^{26}+\cdots+353y-16)$ $\cdot(y^{36}-29y^{35}+\cdots+32744y+2401)^2$ $\cdot(y^{36}+23y^{35}+\cdots-6905768y+790321)$
c_6, c_{12}	$y^9(y-1)^{18}(y^2+y+1)^{19}(y^4-y^3+6y^2-4y+1)^{18}$ $\cdot(y^{20}+9y^{19}+\cdots-291004y+299209)$ $\cdot(y^{27}-19y^{26}+\cdots+1457339y-25921)(y^{38}-10y^{37}+\cdots-16y+1)$