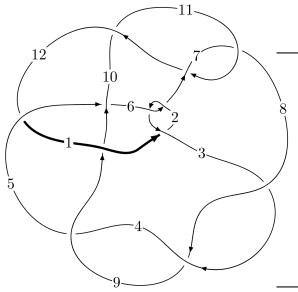
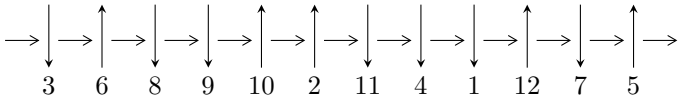
$12a_{0284}$ $(K12a_{0284})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 2.11523 \times 10^{322} u^{128} - 5.51615 \times 10^{322} u^{127} + \cdots + 7.53841 \times 10^{322} b + 8.81896 \times 10^{322}, \\ & - 2.42099 \times 10^{324} u^{128} + 1.88050 \times 10^{324} u^{127} + \cdots + 4.89997 \times 10^{324} a - 4.91206 \times 10^{324}, \\ & u^{129} - u^{128} + \cdots + 137u - 13 \rangle \\ I_2^u = \langle & 5u^{27} + 6u^{26} + \cdots + b + 2,\ 6u^{27} + 19u^{26} + \cdots + a + 23,\ u^{28} + 2u^{27} + \cdots + 2u + 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 157 representations.

[1]The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

[2]All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I. $\boldsymbol{I_1^u = \langle 2.12 \times 10^{322} u^{128} - 5.52 \times 10^{322} u^{127} + \cdots + 7.54 \times 10^{322} b + 8.82 \times 10^{322},\ -2.42 \times 10^{324} u^{128} + 1.88 \times 10^{324} u^{127} + \cdots + 4.90 \times 10^{324} a - 4.91 \times 10^{324},\ u^{129} - u^{128} + \cdots + 137u - 13 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.494084u^{128} - 0.383778u^{127} + \cdots - 6.96403u + 1.00247 \\ -0.280594u^{128} + 0.731739u^{127} + \cdots + 27.8062u - 1.16987 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.213490u^{128} + 0.347960u^{127} + \cdots + 20.8422u - 0.167402 \\ -0.280594u^{128} + 0.731739u^{127} + \cdots + 27.8062u - 1.16987 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -1.40665u^{128} + 1.42022u^{127} + \cdots - 26.1537u + 0.0735769 \\ 0.569437u^{128} - 1.35911u^{127} + \cdots - 107.757u + 8.46868 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.207779u^{128} - 0.290200u^{127} + \cdots - 63.9032u + 4.81670 \\ 0.559337u^{128} - 0.771287u^{127} + \cdots - 22.2391u + 1.72665 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1.39925u^{128} - 2.13313u^{127} + \cdots + 27.0446u - 7.75958 \\ -0.717274u^{128} + 1.61861u^{127} + \cdots + 79.7326u - 7.23816 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.499032u^{128} + 0.282170u^{127} + \cdots - 26.1238u + 5.09116 \\ 0.435156u^{128} - 0.835389u^{127} + \cdots - 28.2553u + 1.29870 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1.09787u^{128} - 1.38838u^{127} + \cdots + 56.8709u - 9.95927 \\ -0.435694u^{128} + 1.08524u^{127} + \cdots + 67.5703u - 6.43747 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 5.38288u^{128} - 6.93878u^{127} + \cdots - 56.7921u - 2.13704$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{129} + 61u^{128} + \cdots + 2857u - 169$
c_2, c_6	$u^{129} + u^{128} + \cdots + 137u + 13$
c_3, c_4, c_8	$u^{129} - u^{128} + \cdots - 35u + 1$
c_5	$u^{129} + u^{128} + \cdots - 17u + 3$
c_7, c_{11}	$u^{129} - u^{128} + \cdots + 1041u + 391$
c_9	$u^{129} - 11u^{128} + \cdots - 2772u - 1336$
c_{10}	$u^{129} - 53u^{128} + \cdots - 3530901u + 152881$
c_{12}	$u^{129} - 5u^{128} + \cdots + 87185u + 62623$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{129} + 29y^{128} + \cdots + 4737157y - 28561$
c_2, c_6	$y^{129} + 61y^{128} + \cdots + 2857y - 169$
c_3, c_4, c_8	$y^{129} - 131y^{128} + \cdots + 111y - 1$
c_5	$y^{129} + 9y^{128} + \cdots - 293y - 9$
c_7, c_{11}	$y^{129} + 53y^{128} + \cdots - 3530901y - 152881$
c_9	$y^{129} - 25y^{128} + \cdots + 84295568y - 1784896$
c_{10}	$y^{129} + 61y^{128} + \cdots + 863028617863y - 23372600161$
c_{12}	$y^{129} + 47y^{128} + \cdots - 202889332557y - 3921640129$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.225214+0.970442I$ $a=\ 0.188196-0.699549I$ $b=\ 0.069903+0.599101I$	$-0.80326-1.93442I$	0
$u=-0.225214-0.970442I$ $a=\ 0.188196+0.699549I$ $b=\ 0.069903-0.599101I$	$-0.80326+1.93442I$	0
$u=\ 0.328434+0.950935I$ $a=\ 0.29600-1.84878I$ $b=-0.227836-0.965332I$	$-5.38486+3.82100I$	0
$u=\ 0.328434-0.950935I$ $a=\ 0.29600+1.84878I$ $b=-0.227836+0.965332I$	$-5.38486-3.82100I$	0
$u=\ 0.362252+0.943135I$ $a=-0.719526-1.108760I$ $b=\ 0.727767+0.830631I$	$-1.81178-0.98745I$	0
$u=\ 0.362252-0.943135I$ $a=-0.719526+1.108760I$ $b=\ 0.727767-0.830631I$	$-1.81178+0.98745I$	0
$u=\ 0.999843+0.147388I$ $a=-0.967711-0.726256I$ $b=\ 0.419979-1.062220I$	$-0.21128+3.47728I$	0
$u=\ 0.999843-0.147388I$ $a=-0.967711+0.726256I$ $b=\ 0.419979+1.062220I$	$-0.21128-3.47728I$	0
$u=-0.940780+0.295046I$ $a=-0.571993+0.318063I$ $b=\ 0.899065+0.496812I$	$-6.84068+6.76676I$	0
$u=-0.940780-0.295046I$ $a=-0.571993-0.318063I$ $b=\ 0.899065-0.496812I$	$-6.84068-6.76676I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.705773+0.739442I$ $a=-0.286635+0.922999I$ $b=\ \ 0.176137+1.016140I$	$3.36266-2.76080I$	0
$u=-0.705773-0.739442I$ $a=-0.286635-0.922999I$ $b=\ \ 0.176137-1.016140I$	$3.36266+2.76080I$	0
$u=-0.329913+0.971134I$ $a=-0.343444+0.272427I$ $b=-0.383042+1.321060I$	$-3.86381+3.18454I$	0
$u=-0.329913-0.971134I$ $a=-0.343444-0.272427I$ $b=-0.383042-1.321060I$	$-3.86381-3.18454I$	0
$u=\ \ 0.351334+0.972584I$ $a=-0.787019-1.148740I$ $b=\ \ 0.899896+0.284403I$	$-3.37868+1.16334I$	0
$u=\ \ 0.351334-0.972584I$ $a=-0.787019+1.148740I$ $b=\ \ 0.899896-0.284403I$	$-3.37868-1.16334I$	0
$u=\ \ 0.714434+0.645186I$ $a=\ \ 0.772470+0.761469I$ $b=-0.081513+1.176680I$	$5.07712-1.16370I$	0
$u=\ \ 0.714434-0.645186I$ $a=\ \ 0.772470-0.761469I$ $b=-0.081513-1.176680I$	$5.07712+1.16370I$	0
$u=-0.231944+0.924569I$ $a=\ \ 3.02381+0.36742I$ $b=-0.523114-1.102980I$	$-3.44731-5.48846I$	0
$u=-0.231944-0.924569I$ $a=\ \ 3.02381-0.36742I$ $b=-0.523114+1.102980I$	$-3.44731+5.48846I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.258325 + 1.017820I$ $a = 1.73059 + 0.81158I$ $b = -0.824534 - 0.944981I$	$-10.21390 - 2.58554I$	0
$u = 0.258325 - 1.017820I$ $a = 1.73059 - 0.81158I$ $b = -0.824534 + 0.944981I$	$-10.21390 + 2.58554I$	0
$u = 0.858414 + 0.395936I$ $a = 0.745540 - 0.381485I$ $b = -0.627590 - 1.085720I$	$1.49834 - 8.61565I$	0
$u = 0.858414 - 0.395936I$ $a = 0.745540 + 0.381485I$ $b = -0.627590 + 1.085720I$	$1.49834 + 8.61565I$	0
$u = 0.916613 + 0.546470I$ $a = -0.821334 - 0.095251I$ $b = 0.365381 + 0.906065I$	$-1.12063 + 1.21435I$	0
$u = 0.916613 - 0.546470I$ $a = -0.821334 + 0.095251I$ $b = 0.365381 - 0.906065I$	$-1.12063 - 1.21435I$	0
$u = -0.747457 + 0.557539I$ $a = -0.203435 + 0.454510I$ $b = -0.696615 + 1.158500I$	$-4.76573 + 3.31723I$	0
$u = -0.747457 - 0.557539I$ $a = -0.203435 - 0.454510I$ $b = -0.696615 - 1.158500I$	$-4.76573 - 3.31723I$	0
$u = 0.239028 + 0.900459I$ $a = 3.30663 - 0.84537I$ $b = -0.479176 + 0.702293I$	$-5.03356 - 1.35646I$	0
$u = 0.239028 - 0.900459I$ $a = 3.30663 + 0.84537I$ $b = -0.479176 - 0.702293I$	$-5.03356 + 1.35646I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.240069+0.895280I$ $a=\ \ 1.00002-1.53176I$ $b=-1.05559+1.02499I$	$-9.15850+2.76252I$	0
$u=-0.240069-0.895280I$ $a=\ \ 1.00002+1.53176I$ $b=-1.05559-1.02499I$	$-9.15850-2.76252I$	0
$u=\ \ 0.089015+1.069970I$ $a=\ \ 2.00501-0.82963I$ $b=-0.642587+0.590143I$	$-5.03807-1.18501I$	0
$u=\ \ 0.089015-1.069970I$ $a=\ \ 2.00501+0.82963I$ $b=-0.642587-0.590143I$	$-5.03807+1.18501I$	0
$u=\ \ 0.558403+0.926828I$ $a=-1.76060-0.08232I$ $b=\ \ 0.675429-0.608453I$	$-2.19993+4.47085I$	0
$u=\ \ 0.558403-0.926828I$ $a=-1.76060+0.08232I$ $b=\ \ 0.675429+0.608453I$	$-2.19993-4.47085I$	0
$u=-0.871691+0.260471I$ $a=\ \ 0.741627+0.383723I$ $b=-0.411096+0.971805I$	$3.01496+1.37794I$	0
$u=-0.871691-0.260471I$ $a=\ \ 0.741627-0.383723I$ $b=-0.411096-0.971805I$	$3.01496-1.37794I$	0
$u=-1.025460+0.377398I$ $a=-0.564098-0.438983I$ $b=\ \ 0.678901-1.117400I$	$-4.95449+12.58240I$	0
$u=-1.025460-0.377398I$ $a=-0.564098+0.438983I$ $b=\ \ 0.678901+1.117400I$	$-4.95449-12.58240I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.374909+1.031730I$ $a=\ \ 1.81385-0.23953I$ $b=-1.219110-0.707738I$	$-10.09170-5.09552I$	0
$u=-0.374909-1.031730I$ $a=\ \ 1.81385+0.23953I$ $b=-1.219110+0.707738I$	$-10.09170+5.09552I$	0
$u=-0.469964+1.009150I$ $a=-2.75594+0.93516I$ $b=\ \ 0.571142+0.885822I$	$-2.13464-3.79367I$	0
$u=-0.469964-1.009150I$ $a=-2.75594-0.93516I$ $b=\ \ 0.571142-0.885822I$	$-2.13464+3.79367I$	0
$u=-0.459458+1.015260I$ $a=-1.25021+1.52465I$ $b=\ \ 0.764541-0.702431I$	$-2.18902-2.29239I$	0
$u=-0.459458-1.015260I$ $a=-1.25021-1.52465I$ $b=\ \ 0.764541+0.702431I$	$-2.18902+2.29239I$	0
$u=\ \ 0.617454+0.927981I$ $a=-1.83805-0.02741I$ $b=\ \ 0.573735-0.659494I$	$-2.20423+4.46264I$	0
$u=\ \ 0.617454-0.927981I$ $a=-1.83805+0.02741I$ $b=\ \ 0.573735+0.659494I$	$-2.20423-4.46264I$	0
$u=-0.902145+0.678839I$ $a=\ \ 0.968996-0.567142I$ $b=-0.427319-0.991107I$	$2.92976-4.56971I$	0
$u=-0.902145-0.678839I$ $a=\ \ 0.968996+0.567142I$ $b=-0.427319+0.991107I$	$2.92976+4.56971I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.866221$ $a = -0.446291$ $b = 0.555077$	-2.96518	0
$u = -0.361536 + 1.077970I$ $a = -0.52789 + 1.89034I$ $b = 0.570408 - 0.819470I$	$-2.34980 + 0.75723I$	0
$u = -0.361536 - 1.077970I$ $a = -0.52789 - 1.89034I$ $b = 0.570408 + 0.819470I$	$-2.34980 - 0.75723I$	0
$u = 0.509217 + 1.017550I$ $a = -2.17381 - 0.47768I$ $b = 0.667686 - 1.174370I$	$-0.79292 + 6.94260I$	0
$u = 0.509217 - 1.017550I$ $a = -2.17381 + 0.47768I$ $b = 0.667686 + 1.174370I$	$-0.79292 - 6.94260I$	0
$u = -0.691403 + 0.514811I$ $a = -1.25150 + 0.77739I$ $b = 0.006168 + 1.278170I$	$-0.36102 + 4.39177I$	0
$u = -0.691403 - 0.514811I$ $a = -1.25150 - 0.77739I$ $b = 0.006168 - 1.278170I$	$-0.36102 - 4.39177I$	0
$u = 0.701215 + 0.495103I$ $a = 0.168945 - 1.371970I$ $b = -0.608392 - 0.848368I$	$-6.13415 - 4.21080I$	0
$u = 0.701215 - 0.495103I$ $a = 0.168945 + 1.371970I$ $b = -0.608392 + 0.848368I$	$-6.13415 + 4.21080I$	0
$u = 0.288449 + 1.106950I$ $a = 1.74152 - 0.78070I$ $b = -0.830441 + 0.845995I$	$-10.49110 + 3.58862I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.288449 - 1.106950I$ $a = 1.74152 + 0.78070I$ $b = -0.830441 - 0.845995I$	$-10.49110 - 3.58862I$	0
$u = 0.791050 + 0.290357I$ $a = -0.0096656 + 0.0914946I$ $b = -0.627317 + 0.835177I$	$-6.16435 + 0.64877I$	0
$u = 0.791050 - 0.290357I$ $a = -0.0096656 - 0.0914946I$ $b = -0.627317 - 0.835177I$	$-6.16435 - 0.64877I$	0
$u = 0.640925 + 0.970256I$ $a = -0.952201 - 0.306902I$ $b = 0.031456 - 1.230780I$	$4.11174 + 6.34724I$	0
$u = 0.640925 - 0.970256I$ $a = -0.952201 + 0.306902I$ $b = 0.031456 + 1.230780I$	$4.11174 - 6.34724I$	0
$u = -0.696307 + 0.943100I$ $a = 1.055160 - 0.358022I$ $b = 0.074670 - 0.935931I$	$2.77579 - 2.61080I$	0
$u = -0.696307 - 0.943100I$ $a = 1.055160 + 0.358022I$ $b = 0.074670 + 0.935931I$	$2.77579 + 2.61080I$	0
$u = 0.728922 + 0.379907I$ $a = 0.748906 + 0.117476I$ $b = -0.782956 + 0.454813I$	$-0.35138 - 3.30491I$	0
$u = 0.728922 - 0.379907I$ $a = 0.748906 - 0.117476I$ $b = -0.782956 - 0.454813I$	$-0.35138 + 3.30491I$	0
$u = 0.105901 + 1.176240I$ $a = 1.49855 + 1.24140I$ $b = -0.606359 - 0.958135I$	$-4.04118 - 6.00278I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.105901 - 1.176240I$ $a = 1.49855 - 1.24140I$ $b = -0.606359 + 0.958135I$	$-4.04118 + 6.00278I$	0
$u = -0.492372 + 1.085380I$ $a = 0.669743 - 0.911409I$ $b = -1.130750 + 0.286966I$	$-9.19519 - 1.76687I$	0
$u = -0.492372 - 1.085380I$ $a = 0.669743 + 0.911409I$ $b = -1.130750 - 0.286966I$	$-9.19519 + 1.76687I$	0
$u = -0.517705 + 1.081110I$ $a = -2.54078 - 0.14678I$ $b = 0.688326 + 0.998846I$	$-1.27095 - 7.82113I$	0
$u = -0.517705 - 1.081110I$ $a = -2.54078 + 0.14678I$ $b = 0.688326 - 0.998846I$	$-1.27095 + 7.82113I$	0
$u = -0.575608 + 1.052870I$ $a = 0.896057 - 0.163750I$ $b = -0.07154 - 1.42560I$	$-1.98303 - 9.28780I$	0
$u = -0.575608 - 1.052870I$ $a = 0.896057 + 0.163750I$ $b = -0.07154 + 1.42560I$	$-1.98303 + 9.28780I$	0
$u = -0.470355 + 1.104140I$ $a = 0.763525 - 0.832105I$ $b = -0.541138 + 0.581415I$	$-0.88644 - 2.37624I$	0
$u = -0.470355 - 1.104140I$ $a = 0.763525 + 0.832105I$ $b = -0.541138 - 0.581415I$	$-0.88644 + 2.37624I$	0
$u = -0.533256 + 0.576591I$ $a = 0.914165 - 0.006576I$ $b = -0.461434 + 0.019466I$	$0.70108 - 1.51175I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.533256-0.576591I$ $a=\ \ 0.914165+0.006576I$ $b=-0.461434-0.019466I$	$0.70108+1.51175I$	0
$u=-0.621076+1.049160I$ $a=\ \ 1.84968-0.66522I$ $b=-0.77113-1.26949I$	$-6.25573-8.53936I$	0
$u=-0.621076-1.049160I$ $a=\ \ 1.84968+0.66522I$ $b=-0.77113+1.26949I$	$-6.25573+8.53936I$	0
$u=\ \ 0.592162+1.073200I$ $a=\ \ 1.89386+1.20517I$ $b=-0.611923+0.979059I$	$-7.86790+9.22687I$	0
$u=\ \ 0.592162-1.073200I$ $a=\ \ 1.89386-1.20517I$ $b=-0.611923-0.979059I$	$-7.86790-9.22687I$	0
$u=\ \ 0.570164+1.095830I$ $a=\ \ 0.81058+1.20377I$ $b=-0.882756-0.539962I$	$-2.43899+8.24975I$	0
$u=\ \ 0.570164-1.095830I$ $a=\ \ 0.81058-1.20377I$ $b=-0.882756+0.539962I$	$-2.43899-8.24975I$	0
$u=-0.370478+0.668170I$ $a=-0.29411-2.07106I$ $b=\ \ 0.374690-0.797956I$	$-0.892851+0.115079I$	0
$u=-0.370478-0.668170I$ $a=-0.29411+2.07106I$ $b=\ \ 0.374690+0.797956I$	$-0.892851-0.115079I$	0
$u=-0.810375+0.942114I$ $a=\ \ 0.165506+0.231306I$ $b=-0.314195+0.878321I$	$2.16974-1.68100I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.810375-0.942114I$ $a=\ \ 0.165506-0.231306I$ $b=-0.314195-0.878321I$	$2.16974+1.68100I$	0
$u=\ \ 0.615011+1.116350I$ $a=-0.144426+0.131559I$ $b=\ \ 0.255605+1.106080I$	$-2.84279+2.14300I$	0
$u=\ \ 0.615011-1.116350I$ $a=-0.144426-0.131559I$ $b=\ \ 0.255605-1.106080I$	$-2.84279-2.14300I$	0
$u=\ \ 0.539143+1.157740I$ $a=-0.042418+1.071320I$ $b=-0.626586-0.682530I$	$-8.78501+4.33771I$	0
$u=\ \ 0.539143-1.157740I$ $a=-0.042418-1.071320I$ $b=-0.626586+0.682530I$	$-8.78501-4.33771I$	0
$u=\ \ 0.616786+1.137340I$ $a=\ \ 2.24511+0.32075I$ $b=-0.690174+1.098460I$	$-0.73986+14.07480I$	0
$u=\ \ 0.616786-1.137340I$ $a=\ \ 2.24511-0.32075I$ $b=-0.690174-1.098460I$	$-0.73986-14.07480I$	0
$u=-0.323042+0.627098I$ $a=-0.925771-0.809944I$ $b=\ \ 0.651931+0.496098I$	$-0.80321-1.29269I$	$-2.67927+0.87370I$
$u=-0.323042-0.627098I$ $a=-0.925771+0.809944I$ $b=\ \ 0.651931-0.496098I$	$-0.80321+1.29269I$	$-2.67927-0.87370I$
$u=\ \ 0.372791+0.585465I$ $a=\ \ 0.447201+0.514604I$ $b=\ \ 0.487339+1.145380I$	$0.64595-2.94432I$	$0.+8.83688I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.372791 - 0.585465I$ $a = 0.447201 - 0.514604I$ $b = 0.487339 - 1.145380I$	$0.64595 + 2.94432I$	$0. - 8.83688I$
$u = -0.606887 + 0.285351I$ $a = -0.345643 - 0.956577I$ $b = -0.871530 - 0.454628I$	$-6.91517 - 2.52197I$	$-8.68978 + 3.47413I$
$u = -0.606887 - 0.285351I$ $a = -0.345643 + 0.956577I$ $b = -0.871530 + 0.454628I$	$-6.91517 + 2.52197I$	$-8.68978 - 3.47413I$
$u = 0.358438 + 1.286130I$ $a = -0.364922 - 0.945708I$ $b = 0.083963 + 0.568905I$	$-6.92560 + 5.09330I$	0
$u = 0.358438 - 1.286130I$ $a = -0.364922 + 0.945708I$ $b = 0.083963 - 0.568905I$	$-6.92560 - 5.09330I$	0
$u = -0.609367 + 1.192060I$ $a = -0.774781 + 0.973689I$ $b = 1.018530 - 0.507822I$	$-9.5641 - 12.3799I$	0
$u = -0.609367 - 1.192060I$ $a = -0.774781 - 0.973689I$ $b = 1.018530 + 0.507822I$	$-9.5641 + 12.3799I$	0
$u = -0.626882 + 1.184420I$ $a = 1.90715 - 0.20602I$ $b = -0.567563 - 0.989577I$	$0.28928 - 6.92050I$	0
$u = -0.626882 - 1.184420I$ $a = 1.90715 + 0.20602I$ $b = -0.567563 + 0.989577I$	$0.28928 + 6.92050I$	0
$u = 0.502367 + 1.268190I$ $a = -0.789619 - 0.596944I$ $b = 0.575556 + 0.246516I$	$-6.70595 + 4.89695I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.502367 - 1.268190I$ $a = -0.789619 + 0.596944I$ $b = 0.575556 - 0.246516I$	$-6.70595 - 4.89695I$	0
$u = -0.193788 + 1.351610I$ $a = -1.58534 - 0.14931I$ $b = 0.835875 + 0.692216I$	$-12.48920 + 2.90514I$	0
$u = -0.193788 - 1.351610I$ $a = -1.58534 + 0.14931I$ $b = 0.835875 - 0.692216I$	$-12.48920 - 2.90514I$	0
$u = -0.665699 + 1.206130I$ $a = -1.97244 + 0.41295I$ $b = 0.720974 + 1.160140I$	$-7.5275 - 18.6698I$	0
$u = -0.665699 - 1.206130I$ $a = -1.97244 - 0.41295I$ $b = 0.720974 - 1.160140I$	$-7.5275 + 18.6698I$	0
$u = 1.089050 + 0.844090I$ $a = -0.842771 - 0.547486I$ $b = 0.544009 - 0.908851I$	$-2.09369 + 5.86549I$	0
$u = 1.089050 - 0.844090I$ $a = -0.842771 + 0.547486I$ $b = 0.544009 + 0.908851I$	$-2.09369 - 5.86549I$	0
$u = -0.509886 + 0.351299I$ $a = -1.295680 + 0.083875I$ $b = 0.575380 - 1.033100I$	$0.79323 + 3.49998I$	$-1.09612 - 4.57017I$
$u = -0.509886 - 0.351299I$ $a = -1.295680 - 0.083875I$ $b = 0.575380 + 1.033100I$	$0.79323 - 3.49998I$	$-1.09612 + 4.57017I$
$u = 1.016000 + 0.955052I$ $a = -0.233794 + 0.189578I$ $b = 0.530387 + 0.809060I$	$-2.43556 + 1.53810I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.016000 - 0.955052I$ $a = -0.233794 - 0.189578I$ $b = 0.530387 - 0.809060I$	$-2.43556 - 1.53810I$	0
$u = -0.10341 + 1.42839I$ $a = -1.176410 + 0.683833I$ $b = 0.711469 - 0.999931I$	$-11.5325 + 8.6746I$	0
$u = -0.10341 - 1.42839I$ $a = -1.176410 - 0.683833I$ $b = 0.711469 + 0.999931I$	$-11.5325 - 8.6746I$	0
$u = 0.61193 + 1.35491I$ $a = -1.77935 - 0.21805I$ $b = 0.536311 - 1.072890I$	$-4.59556 + 9.31322I$	0
$u = 0.61193 - 1.35491I$ $a = -1.77935 + 0.21805I$ $b = 0.536311 + 1.072890I$	$-4.59556 - 9.31322I$	0
$u = 0.223062 + 0.183498I$ $a = 0.803407 - 1.120730I$ $b = 0.564147 + 0.516994I$	$-1.02409 - 1.01552I$	$-4.82080 + 3.50462I$
$u = 0.223062 - 0.183498I$ $a = 0.803407 + 1.120730I$ $b = 0.564147 - 0.516994I$	$-1.02409 + 1.01552I$	$-4.82080 - 3.50462I$
$u = 0.204959 + 0.056413I$ $a = -1.47844 - 2.95654I$ $b = 0.491017 - 1.051110I$	$0.62160 + 3.21174I$	$-3.55740 - 5.10904I$
$u = 0.204959 - 0.056413I$ $a = -1.47844 + 2.95654I$ $b = 0.491017 + 1.051110I$	$0.62160 - 3.21174I$	$-3.55740 + 5.10904I$

II.

$\boldsymbol{I_2^u = \langle 5u^{27}+6u^{26}+\cdots+b+2,\ 6u^{27}+19u^{26}+\cdots+a+23,\ u^{28}+2u^{27}+\cdots+2u+1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 \\ u^5+u^3+u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -6u^{27}-19u^{26}+\cdots-49u-23 \\ -5u^{27}-6u^{26}+\cdots-19u-2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -11u^{27}-25u^{26}+\cdots-68u-25 \\ -5u^{27}-6u^{26}+\cdots-19u-2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 19u^{27}+28u^{26}+\cdots+42u+1 \\ 10u^{27}+16u^{26}+\cdots+11u^2+10u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 4u^{27}+7u^{26}+\cdots+21u-2 \\ 3u^{27}+4u^{26}+\cdots+6u-5 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -6u^{27}-9u^{26}+\cdots-40u-12 \\ -10u^{27}-20u^{26}+\cdots-30u-10 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 8u^{27}+14u^{26}+\cdots+12u-7 \\ -5u^{27}-10u^{26}+\cdots-10u-6 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -9u^{27}-18u^{26}+\cdots-51u-18 \\ -11u^{27}-19u^{26}+\cdots-35u-9 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$= -16u^{27}-21u^{26}-108u^{25}-109u^{24}-392u^{23}-343u^{22}-1001u^{21}-727u^{20}-1932u^{19}-1153u^{18}-2951u^{17}-1354u^{16}-3598u^{15}-1159u^{14}-3561u^{13}-588u^{12}-2808u^{11}+3u^{10}-1706u^9+304u^8-717u^7+265u^6-196u^5+135u^4-29u^3+38u^2-7u+1$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{28} - 14u^{27} + \cdots - 18u + 1$
c_2	$u^{28} - 2u^{27} + \cdots - 2u + 1$
c_3, c_4	$u^{28} - 15u^{26} + \cdots - 8u^2 + 1$
c_5	$u^{28} + 3u^{26} + \cdots + u^3 + 1$
c_6	$u^{28} + 2u^{27} + \cdots + 2u + 1$
c_7	$u^{28} + 2u^{27} + \cdots + 8u^2 + 1$
c_8	$u^{28} - 15u^{26} + \cdots - 8u^2 + 1$
c_9	$u^{28} - 2u^{26} + \cdots - 2u + 1$
c_{10}	$u^{28} + 14u^{27} + \cdots + 16u + 1$
c_{11}	$u^{28} - 2u^{27} + \cdots + 8u^2 + 1$
c_{12}	$u^{28} + 8u^{26} + \cdots + 6u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{28} + 14y^{27} + \cdots + 6y + 1$
c_2, c_6	$y^{28} + 14y^{27} + \cdots + 18y + 1$
c_3, c_4, c_8	$y^{28} - 30y^{27} + \cdots - 16y + 1$
c_5	$y^{28} + 6y^{27} + \cdots - 4y^2 + 1$
c_7, c_{11}	$y^{28} + 14y^{27} + \cdots + 16y + 1$
c_9	$y^{28} - 4y^{27} + \cdots - 2y + 1$
c_{10}	$y^{28} + 14y^{27} + \cdots + 12y + 1$
c_{12}	$y^{28} + 16y^{27} + \cdots + 12y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.338295 + 0.982724I$ $a = -0.85400 - 1.71203I$ $b = 0.661211 + 0.579974I$	$-2.35419 + 0.79590I$	$-6.74955 - 0.54227I$
$u = 0.338295 - 0.982724I$ $a = -0.85400 + 1.71203I$ $b = 0.661211 - 0.579974I$	$-2.35419 - 0.79590I$	$-6.74955 + 0.54227I$
$u = -0.311703 + 1.005530I$ $a = 1.59310 + 0.21486I$ $b = -1.002200 - 0.750626I$	$-9.49849 - 4.82659I$	$-4.87059 + 5.88051I$
$u = -0.311703 - 1.005530I$ $a = 1.59310 - 0.21486I$ $b = -1.002200 + 0.750626I$	$-9.49849 + 4.82659I$	$-4.87059 - 5.88051I$
$u = 0.748787 + 0.780708I$ $a = -0.760147 - 0.655940I$ $b = 0.368859 - 0.963619I$	$2.21136 + 4.34742I$	$-3.77299 - 6.91155I$
$u = 0.748787 - 0.780708I$ $a = -0.760147 + 0.655940I$ $b = 0.368859 + 0.963619I$	$2.21136 - 4.34742I$	$-3.77299 + 6.91155I$
$u = -0.271900 + 0.868587I$ $a = 1.32288 - 1.48564I$ $b = -1.005880 + 0.954842I$	$-8.93888 + 2.42349I$	$-3.09520 + 7.00916I$
$u = -0.271900 - 0.868587I$ $a = 1.32288 + 1.48564I$ $b = -1.005880 - 0.954842I$	$-8.93888 - 2.42349I$	$-3.09520 - 7.00916I$
$u = 0.252848 + 0.834812I$ $a = 0.318127 + 0.104599I$ $b = 0.434615 - 0.500924I$	$-1.71066 + 1.72195I$	$-10.05879 - 3.65799I$
$u = 0.252848 - 0.834812I$ $a = 0.318127 - 0.104599I$ $b = 0.434615 + 0.500924I$	$-1.71066 - 1.72195I$	$-10.05879 + 3.65799I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.479787 + 1.049630I$ $a = -2.33747 - 0.16885I$ $b = 0.648811 - 1.032330I$	$-0.94017 + 5.99394I$	$-4.61809 - 4.80792I$
$u = 0.479787 - 1.049630I$ $a = -2.33747 + 0.16885I$ $b = 0.648811 + 1.032330I$	$-0.94017 - 5.99394I$	$-4.61809 + 4.80792I$
$u = -0.927320 + 0.728921I$ $a = 1.40336 - 0.28526I$ $b = -0.321464 - 0.991796I$	$-0.59165 - 4.68378I$	$1.14535 + 6.94573I$
$u = -0.927320 - 0.728921I$ $a = 1.40336 + 0.28526I$ $b = -0.321464 + 0.991796I$	$-0.59165 + 4.68378I$	$1.14535 - 6.94573I$
$u = 0.763017 + 0.924311I$ $a = 0.145164 + 0.295275I$ $b = 0.337314 + 0.853341I$	$1.77035 + 1.41738I$	$-6.72948 + 3.48875I$
$u = 0.763017 - 0.924311I$ $a = 0.145164 - 0.295275I$ $b = 0.337314 - 0.853341I$	$1.77035 - 1.41738I$	$-6.72948 - 3.48875I$
$u = 0.376444 + 0.688852I$ $a = -0.303359 + 0.546482I$ $b = 0.511015 + 1.112470I$	$0.44796 - 2.37280I$	$-5.03540 - 4.05151I$
$u = 0.376444 - 0.688852I$ $a = -0.303359 - 0.546482I$ $b = 0.511015 - 1.112470I$	$0.44796 + 2.37280I$	$-5.03540 + 4.05151I$
$u = -0.384419 + 1.224850I$ $a = 0.161240 - 1.392820I$ $b = -0.299827 + 0.578091I$	$-7.20024 - 4.54868I$	$-9.05627 - 1.18724I$
$u = -0.384419 - 1.224850I$ $a = 0.161240 + 1.392820I$ $b = -0.299827 - 0.578091I$	$-7.20024 + 4.54868I$	$-9.05627 + 1.18724I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.570843+1.161980I$ $a=\ \ 1.81887-0.57104I$ $b=-0.537498-1.157070I$	$-4.82149-8.24857I$	$-5.33009+5.70743I$
$u=-0.570843-1.161980I$ $a=\ \ 1.81887+0.57104I$ $b=-0.537498+1.157070I$	$-4.82149+8.24857I$	$-5.33009-5.70743I$
$u=-0.951735+0.899311I$ $a=\ \ 0.705204+0.226408I$ $b=-0.287015+0.875709I$	$-1.06551-2.18161I$	$1.91473+5.67475I$
$u=-0.951735-0.899311I$ $a=\ \ 0.705204-0.226408I$ $b=-0.287015-0.875709I$	$-1.06551+2.18161I$	$1.91473-5.67475I$
$u=-0.355875+0.540002I$ $a=-1.78309+1.56063I$ $b=-0.355638+1.159850I$	$-2.38557+4.17450I$	$-2.76448-3.64055I$
$u=-0.355875-0.540002I$ $a=-1.78309-1.56063I$ $b=-0.355638-1.159850I$	$-2.38557-4.17450I$	$-2.76448+3.64055I$
$u=-0.185381+0.560551I$ $a=-3.42988-1.46409I$ $b=-0.152301-0.705085I$	$-4.40124+1.97633I$	$-2.97917-2.93673I$
$u=-0.185381-0.560551I$ $a=-3.42988+1.46409I$ $b=-0.152301+0.705085I$	$-4.40124-1.97633I$	$-2.97917+2.93673I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{28}-14u^{27}+\cdots-18u+1)(u^{129}+61u^{128}+\cdots+2857u-169)$
c_2	$(u^{28}-2u^{27}+\cdots-2u+1)(u^{129}+u^{128}+\cdots+137u+13)$
c_3, c_4	$(u^{28}-15u^{26}+\cdots-8u^2+1)(u^{129}-u^{128}+\cdots-35u+1)$
c_5	$(u^{28}+3u^{26}+\cdots+u^3+1)(u^{129}+u^{128}+\cdots-17u+3)$
c_6	$(u^{28}+2u^{27}+\cdots+2u+1)(u^{129}+u^{128}+\cdots+137u+13)$
c_7	$(u^{28}+2u^{27}+\cdots+8u^2+1)(u^{129}-u^{128}+\cdots+1041u+391)$
c_8	$(u^{28}-15u^{26}+\cdots-8u^2+1)(u^{129}-u^{128}+\cdots-35u+1)$
c_9	$(u^{28}-2u^{26}+\cdots-2u+1)(u^{129}-11u^{128}+\cdots-2772u-1336)$
c_{10}	$(u^{28}+14u^{27}+\cdots+16u+1)$ $\cdot(u^{129}-53u^{128}+\cdots-3530901u+152881)$
c_{11}	$(u^{28}-2u^{27}+\cdots+8u^2+1)(u^{129}-u^{128}+\cdots+1041u+391)$
c_{12}	$(u^{28}+8u^{26}+\cdots+6u^2+1)(u^{129}-5u^{128}+\cdots+87185u+62623)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{28}+14y^{27}+\cdots+6y+1)(y^{129}+29y^{128}+\cdots+4737157y-28561)$
c_2, c_6	$(y^{28}+14y^{27}+\cdots+18y+1)(y^{129}+61y^{128}+\cdots+2857y-169)$
c_3, c_4, c_8	$(y^{28}-30y^{27}+\cdots-16y+1)(y^{129}-131y^{128}+\cdots+111y-1)$
c_5	$(y^{28}+6y^{27}+\cdots-4y^2+1)(y^{129}+9y^{128}+\cdots-293y-9)$
c_7, c_{11}	$(y^{28}+14y^{27}+\cdots+16y+1)$ $\cdot(y^{129}+53y^{128}+\cdots-3530901y-152881)$
c_9	$(y^{28}-4y^{27}+\cdots-2y+1)$ $\cdot(y^{129}-25y^{128}+\cdots+84295568y-1784896)$
c_{10}	$(y^{28}+14y^{27}+\cdots+12y+1)$ $\cdot(y^{129}+61y^{128}+\cdots+863028617863y-23372600161)$
c_{12}	$(y^{28}+16y^{27}+\cdots+12y+1)$ $\cdot(y^{129}+47y^{128}+\cdots-202889332557y-3921640129)$