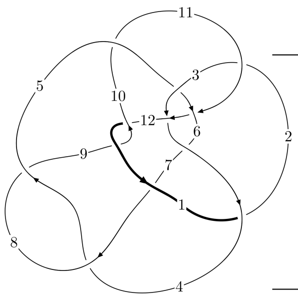
$12n_{0702}$ ($K12n_{0702}$)



A knot diagram[1]

Linearized knot diagam

$\rightarrow\downarrow\rightarrow\uparrow\rightarrow\downarrow\rightarrow\uparrow\rightarrow\downarrow\rightarrow\uparrow\rightarrow\uparrow\rightarrow\uparrow\rightarrow\downarrow\rightarrow\downarrow\rightarrow\uparrow\rightarrow\downarrow\rightarrow$

4 11 12 8 3 4 1 5 1 5 6 10

Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 1.28030 \times 10^{278} u^{84} - 7.08515 \times 10^{277} u^{83} + \cdots + 2.04829 \times 10^{277} b - 1.44299 \times 10^{278}, \\
& - 1.59722 \times 10^{279} u^{84} + 5.41005 \times 10^{278} u^{83} + \cdots + 2.04829 \times 10^{277} a + 4.64496 \times 10^{279}, \\
& u^{85} - 9u^{83} + \cdots - 8u - 1 \rangle \\
I_2^u = \langle & -244772546 u^{18} - 1629957344 u^{17} + \cdots + 137743083 b + 724816940, \\
& 26173603 u^{18} + 166772668 u^{17} + \cdots + 137743083 a - 60671008,\ u^{19} + 7u^{18} + \cdots - 8u - 1 \rangle \\
I_3^u = \langle & 56a^5 + 39a^4 + 47a^3 + 373a^2 + 53b - 362a - 172,\ a^6 + a^5 + a^4 + 7a^3 - 5a^2 - 5a - 1,\ u - 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 110 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. $\boldsymbol{I_1^u = \langle 1.28 \times 10^{278} u^{84} - 7.09 \times 10^{277} u^{83} + \cdots + 2.05 \times 10^{277} b - 1.44 \times 10^{278},\ -1.60 \times 10^{279} u^{84} + 5.41 \times 10^{278} u^{83} + \cdots + 2.05 \times 10^{277} a + 4.64 \times 10^{279},\ u^{85} - 9u^{83} + \cdots - 8u - 1\rangle}$

(i) Arc colorings

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

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

$$a_1 = \begin{pmatrix} 77.9781u^{84} - 26.4125u^{83} + \cdots - 1164.55u - 226.772 \\ -6.25059u^{84} + 3.45906u^{83} + \cdots + 67.2481u + 7.04483 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} -27.5383u^{84} + 8.40815u^{83} + \cdots + 427.301u + 76.0121 \\ -4.62638u^{84} + 2.16890u^{83} + \cdots + 59.0320u + 6.99337 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -27.5383u^{84} + 8.40815u^{83} + \cdots + 427.301u + 76.0121 \\ -6.59492u^{84} + 2.34603u^{83} + \cdots + 98.7589u + 15.4015 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 70.9381u^{84} - 24.3526u^{83} + \cdots - 1052.65u - 203.819 \\ 0.789353u^{84} + 1.39912u^{83} + \cdots - 44.6522u - 15.9087 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 12.5845u^{84} - 4.95452u^{83} + \cdots - 182.933u - 36.7101 \\ 8.12889u^{84} - 1.77404u^{83} + \cdots - 140.641u - 31.6057 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 33.8620u^{84} - 15.4917u^{83} + \cdots - 431.959u - 76.6409 \\ -11.6733u^{84} + 5.27102u^{83} + \cdots + 149.104u + 22.4851 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 29.0802u^{84} - 13.3001u^{83} + \cdots - 372.382u - 66.4202 \\ -6.89151u^{84} + 3.07940u^{83} + \cdots + 89.5269u + 12.2644 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.635360u^{84} + 0.516056u^{83} + \cdots + 4.16244u - 1.48004 \\ -13.1197u^{84} + 3.93049u^{83} + \cdots + 208.557u + 41.6369 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 16.6730u^{84} - 5.72160u^{83} + \cdots - 248.259u - 50.7302$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{85}+7u^{84}+\cdots-276406u-10363$
c_2	$u^{85}-u^{84}+\cdots+1536u-64$
c_3	$u^{85}+2u^{84}+\cdots+4329u-551$
c_4, c_8	$u^{85}-9u^{83}+\cdots-8u-1$
c_5	$u^{85}-11u^{83}+\cdots-9u-1$
c_6	$u^{85}-2u^{84}+\cdots-2540737042u-524132531$
c_7	$u^{85}+u^{84}+\cdots-35062u-10369$
c_9, c_{12}	$u^{85}+4u^{84}+\cdots+92u-29$
c_{10}	$u^{85}-26u^{83}+\cdots-8412115u-901067$
c_{11}	$u^{85}-4u^{84}+\cdots-78u-43$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{85} - 105y^{84} + \cdots + 28067617904y - 107391769$
c_2	$y^{85} + 43y^{84} + \cdots + 264192y - 4096$
c_3	$y^{85} - 10y^{84} + \cdots + 13669939y - 303601$
c_4, c_8	$y^{85} - 18y^{84} + \cdots + 28y - 1$
c_5	$y^{85} - 22y^{84} + \cdots + 81y - 1$
c_6	$y^{85} + 48y^{84} + \cdots - 2812247482606914286y - 274714910052465961$
c_7	$y^{85} + 69y^{84} + \cdots + 9340452618y - 107516161$
c_9, c_{12}	$y^{85} + 30y^{84} + \cdots - 642y - 841$
c_{10}	$y^{85} - 52y^{84} + \cdots + 30213827398679y - 811921738489$
c_{11}	$y^{85} + 14y^{84} + \cdots - 59104y - 1849$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.953246 + 0.245682I$ $a = 1.007570 - 0.384540I$ $b = -0.577244 + 0.241074I$	$0.871396 - 0.259267I$	0
$u = 0.953246 - 0.245682I$ $a = 1.007570 + 0.384540I$ $b = -0.577244 - 0.241074I$	$0.871396 + 0.259267I$	0
$u = -0.673486 + 0.784306I$ $a = -1.90573 - 0.56779I$ $b = 0.526659 - 1.072070I$	$0.07658 - 7.34708I$	0
$u = -0.673486 - 0.784306I$ $a = -1.90573 + 0.56779I$ $b = 0.526659 + 1.072070I$	$0.07658 + 7.34708I$	0
$u = -0.900856 + 0.557667I$ $a = 1.49030 - 0.10055I$ $b = -1.56321 + 0.60214I$	$0.25278 - 10.31380I$	0
$u = -0.900856 - 0.557667I$ $a = 1.49030 + 0.10055I$ $b = -1.56321 - 0.60214I$	$0.25278 + 10.31380I$	0
$u = 0.919304 + 0.040533I$ $a = 1.81355 + 0.10649I$ $b = -2.22407 - 0.17184I$	$0.592523 - 0.002741I$	0
$u = 0.919304 - 0.040533I$ $a = 1.81355 - 0.10649I$ $b = -2.22407 + 0.17184I$	$0.592523 + 0.002741I$	0
$u = -0.748567 + 0.471981I$ $a = -1.44360 + 0.65462I$ $b = 0.660672 - 0.096154I$	$0.76529 - 4.87151I$	0
$u = -0.748567 - 0.471981I$ $a = -1.44360 - 0.65462I$ $b = 0.660672 + 0.096154I$	$0.76529 + 4.87151I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.125640 + 0.071155I$ $a = 0.47625 + 1.55494I$ $b = -0.071839 - 0.716689I$	$4.27813 - 3.12428I$	0
$u = 1.125640 - 0.071155I$ $a = 0.47625 - 1.55494I$ $b = -0.071839 + 0.716689I$	$4.27813 + 3.12428I$	0
$u = 0.909487 + 0.669545I$ $a = 1.210390 - 0.046758I$ $b = -0.919489 - 0.617999I$	$2.82901 + 2.24291I$	0
$u = 0.909487 - 0.669545I$ $a = 1.210390 + 0.046758I$ $b = -0.919489 + 0.617999I$	$2.82901 - 2.24291I$	0
$u = 0.540941 + 0.640172I$ $a = -0.416849 + 0.792144I$ $b = 0.705707 - 0.447204I$	$1.89366 + 2.60688I$	$5.20495 - 4.85763I$
$u = 0.540941 - 0.640172I$ $a = -0.416849 - 0.792144I$ $b = 0.705707 + 0.447204I$	$1.89366 - 2.60688I$	$5.20495 + 4.85763I$
$u = -0.514416 + 0.658480I$ $a = -1.069110 + 0.163561I$ $b = 0.743351 + 0.124486I$	$-1.88421 - 3.29048I$	$-5.94463 + 7.93366I$
$u = -0.514416 - 0.658480I$ $a = -1.069110 - 0.163561I$ $b = 0.743351 - 0.124486I$	$-1.88421 + 3.29048I$	$-5.94463 - 7.93366I$
$u = -0.110753 + 0.800469I$ $a = 1.66054 + 0.49068I$ $b = 0.327175 + 0.029384I$	$-2.81942 + 2.04516I$	$-6.43659 - 2.51371I$
$u = -0.110753 - 0.800469I$ $a = 1.66054 - 0.49068I$ $b = 0.327175 - 0.029384I$	$-2.81942 - 2.04516I$	$-6.43659 + 2.51371I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.446712 + 0.616825I$ $a = -1.39986 + 0.44963I$ $b = 0.903744 - 0.202836I$	$-1.11341 + 3.76827I$	$-7.97957 - 5.72070I$
$u = 0.446712 - 0.616825I$ $a = -1.39986 - 0.44963I$ $b = 0.903744 + 0.202836I$	$-1.11341 - 3.76827I$	$-7.97957 + 5.72070I$
$u = 0.022513 + 0.738228I$ $a = 1.98080 - 1.09389I$ $b = 0.520976 + 0.287420I$	$-1.68094 + 6.59296I$	$-4.00324 - 6.24155I$
$u = 0.022513 - 0.738228I$ $a = 1.98080 + 1.09389I$ $b = 0.520976 - 0.287420I$	$-1.68094 - 6.59296I$	$-4.00324 + 6.24155I$
$u = -0.987717 + 0.803260I$ $a = 1.045390 - 0.151570I$ $b = -0.259808 + 1.320130I$	$-2.86081 - 2.98975I$	0
$u = -0.987717 - 0.803260I$ $a = 1.045390 + 0.151570I$ $b = -0.259808 - 1.320130I$	$-2.86081 + 2.98975I$	0
$u = -0.074158 + 1.272450I$ $a = 0.230434 + 0.820563I$ $b = 0.235221 + 0.844978I$	$-3.68207 + 0.90101I$	0
$u = -0.074158 - 1.272450I$ $a = 0.230434 - 0.820563I$ $b = 0.235221 - 0.844978I$	$-3.68207 - 0.90101I$	0
$u = -0.778773 + 1.013300I$ $a = -0.811119 + 0.504897I$ $b = 0.24015 - 1.57375I$	$-7.82081 - 0.90724I$	0
$u = -0.778773 - 1.013300I$ $a = -0.811119 - 0.504897I$ $b = 0.24015 + 1.57375I$	$-7.82081 + 0.90724I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.717565$ $a = 1.09859$ $b = -0.748487$	1.23485	8.37230
$u = -1.275380 + 0.256516I$ $a = -0.200937 + 0.717636I$ $b = -0.163799 + 0.011266I$	$6.70429 - 4.67725I$	0
$u = -1.275380 - 0.256516I$ $a = -0.200937 - 0.717636I$ $b = -0.163799 - 0.011266I$	$6.70429 + 4.67725I$	0
$u = -0.861322 + 0.988040I$ $a = 0.626308 - 0.287592I$ $b = -0.30284 + 1.82816I$	$-6.97709 - 2.44068I$	0
$u = -0.861322 - 0.988040I$ $a = 0.626308 + 0.287592I$ $b = -0.30284 - 1.82816I$	$-6.97709 + 2.44068I$	0
$u = 0.671632 + 0.108498I$ $a = -3.18695 - 0.42608I$ $b = 1.76184 + 0.45532I$	$-0.629345 + 0.042189I$	$-9.3237 - 22.9586I$
$u = 0.671632 - 0.108498I$ $a = -3.18695 + 0.42608I$ $b = 1.76184 - 0.45532I$	$-0.629345 - 0.042189I$	$-9.3237 + 22.9586I$
$u = 1.320680 + 0.030383I$ $a = 0.374873 + 0.695666I$ $b = -0.439824 - 0.683093I$	$2.63381 - 0.38628I$	0
$u = 1.320680 - 0.030383I$ $a = 0.374873 - 0.695666I$ $b = -0.439824 + 0.683093I$	$2.63381 + 0.38628I$	0
$u = 1.328070 + 0.070537I$ $a = 0.209036 - 0.094466I$ $b = -0.680596 - 0.890239I$	$3.43139 - 3.10183I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.328070 - 0.070537I$ $a = 0.209036 + 0.094466I$ $b = -0.680596 + 0.890239I$	$3.43139 + 3.10183I$	0
$u = -0.818817 + 1.054500I$ $a = -0.397386 + 0.496106I$ $b = 0.01047 - 1.52855I$	$-6.06632 + 1.74224I$	0
$u = -0.818817 - 1.054500I$ $a = -0.397386 - 0.496106I$ $b = 0.01047 + 1.52855I$	$-6.06632 - 1.74224I$	0
$u = 0.853790 + 1.031930I$ $a = 0.702437 + 0.384444I$ $b = -0.38963 - 1.74425I$	$-8.60891 + 10.06010I$	0
$u = 0.853790 - 1.031930I$ $a = 0.702437 - 0.384444I$ $b = -0.38963 + 1.74425I$	$-8.60891 - 10.06010I$	0
$u = 0.569474 + 1.212630I$ $a = -0.588783 - 0.156268I$ $b = 0.21959 + 1.40637I$	$-6.53669 - 0.30535I$	0
$u = 0.569474 - 1.212630I$ $a = -0.588783 + 0.156268I$ $b = 0.21959 - 1.40637I$	$-6.53669 + 0.30535I$	0
$u = -0.643333 + 0.126775I$ $a = 0.700532 + 0.525270I$ $b = -0.86233 - 1.30596I$	$1.11800 + 3.76540I$	$6.47146 - 0.17501I$
$u = -0.643333 - 0.126775I$ $a = 0.700532 - 0.525270I$ $b = -0.86233 + 1.30596I$	$1.11800 - 3.76540I$	$6.47146 + 0.17501I$
$u = -1.072820 + 0.880544I$ $a = 1.222270 - 0.647004I$ $b = 0.06919 + 1.47723I$	$-6.28594 - 4.46244I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.072820 - 0.880544I$ $a = 1.222270 + 0.647004I$ $b = 0.06919 - 1.47723I$	$-6.28594 + 4.46244I$	0
$u = -1.111240 + 0.836819I$ $a = -1.085760 + 0.719028I$ $b = 0.34024 - 1.57099I$	$-6.73268 - 5.90485I$	0
$u = -1.111240 - 0.836819I$ $a = -1.085760 - 0.719028I$ $b = 0.34024 + 1.57099I$	$-6.73268 + 5.90485I$	0
$u = -0.597072 + 0.076683I$ $a = 0.939533 + 0.529541I$ $b = -0.223355 + 1.043000I$	$0.72842 - 3.14108I$	$2.29680 + 4.43516I$
$u = -0.597072 - 0.076683I$ $a = 0.939533 - 0.529541I$ $b = -0.223355 - 1.043000I$	$0.72842 + 3.14108I$	$2.29680 - 4.43516I$
$u = -1.10536 + 0.91023I$ $a = -1.277440 + 0.468808I$ $b = 0.45655 - 1.40048I$	$-5.15199 - 8.90397I$	0
$u = -1.10536 - 0.91023I$ $a = -1.277440 - 0.468808I$ $b = 0.45655 + 1.40048I$	$-5.15199 + 8.90397I$	0
$u = -0.83913 + 1.17729I$ $a = 0.532658 - 0.417502I$ $b = 0.35403 + 1.48319I$	$-7.44292 + 1.34945I$	0
$u = -0.83913 - 1.17729I$ $a = 0.532658 + 0.417502I$ $b = 0.35403 - 1.48319I$	$-7.44292 - 1.34945I$	0
$u = 1.12975 + 0.91492I$ $a = 1.007260 + 0.695928I$ $b = 0.02880 - 1.41413I$	$-7.74485 - 2.88977I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.12975 - 0.91492I$ $a = 1.007260 - 0.695928I$ $b = 0.02880 + 1.41413I$	$-7.74485 + 2.88977I$	0
$u = 0.82642 + 1.24387I$ $a = 0.435680 + 0.402752I$ $b = 0.26320 - 1.49705I$	$-7.78575 - 9.87450I$	0
$u = 0.82642 - 1.24387I$ $a = 0.435680 - 0.402752I$ $b = 0.26320 + 1.49705I$	$-7.78575 + 9.87450I$	0
$u = -1.16879 + 0.95091I$ $a = 1.168270 - 0.342096I$ $b = -0.62166 + 1.72667I$	$-6.33003 - 9.02103I$	0
$u = -1.16879 - 0.95091I$ $a = 1.168270 + 0.342096I$ $b = -0.62166 - 1.72667I$	$-6.33003 + 9.02103I$	0
$u = 1.18792 + 0.96818I$ $a = 1.189930 + 0.382393I$ $b = -0.56609 - 1.65671I$	$-6.5605 + 17.7584I$	0
$u = 1.18792 - 0.96818I$ $a = 1.189930 - 0.382393I$ $b = -0.56609 + 1.65671I$	$-6.5605 - 17.7584I$	0
$u = 0.91255 + 1.27572I$ $a = -0.413886 - 0.234512I$ $b = 0.090108 + 1.345540I$	$-6.23718 + 1.43490I$	0
$u = 0.91255 - 1.27572I$ $a = -0.413886 + 0.234512I$ $b = 0.090108 - 1.345540I$	$-6.23718 - 1.43490I$	0
$u = -0.267578 + 0.313151I$ $a = 0.055433 + 1.389690I$ $b = 0.473363 - 0.261089I$	$-1.67196 + 0.33811I$	$-4.53587 + 0.25356I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.267578 - 0.313151I$ $a = 0.055433 - 1.389690I$ $b = 0.473363 + 0.261089I$	$-1.67196 - 0.33811I$	$-4.53587 - 0.25356I$
$u = 1.12120 + 1.13735I$ $a = -0.935373 - 0.230456I$ $b = 0.317137 + 1.296190I$	$-5.58721 + 7.04673I$	0
$u = 1.12120 - 1.13735I$ $a = -0.935373 + 0.230456I$ $b = 0.317137 - 1.296190I$	$-5.58721 - 7.04673I$	0
$u = 0.252248 + 0.310284I$ $a = -0.838985 - 0.037082I$ $b = 0.08832 - 1.69651I$	$1.02683 + 4.68860I$	$-4.5379 - 18.7431I$
$u = 0.252248 - 0.310284I$ $a = -0.838985 + 0.037082I$ $b = 0.08832 + 1.69651I$	$1.02683 - 4.68860I$	$-4.5379 + 18.7431I$
$u = -0.390454 + 0.064131I$ $a = -4.96384 - 2.92768I$ $b = 0.693941 + 0.917998I$	$-1.33214 + 7.02424I$	$1.83651 - 1.94021I$
$u = -0.390454 - 0.064131I$ $a = -4.96384 + 2.92768I$ $b = 0.693941 - 0.917998I$	$-1.33214 - 7.02424I$	$1.83651 + 1.94021I$
$u = 1.31679 + 0.93534I$ $a = -0.877200 - 0.537108I$ $b = 0.24804 + 1.41028I$	$-4.27143 + 8.08431I$	0
$u = 1.31679 - 0.93534I$ $a = -0.877200 + 0.537108I$ $b = 0.24804 - 1.41028I$	$-4.27143 - 8.08431I$	0
$u = -1.64898 + 0.16129I$ $a = 0.084326 - 0.476991I$ $b = -0.207238 + 0.939937I$	$3.05653 - 5.84434I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.64898 - 0.16129I$ $a = 0.084326 + 0.476991I$ $b = -0.207238 - 0.939937I$	$3.05653 + 5.84434I$	0
$u = -0.312911 + 0.076595I$ $a = 1.31072 - 3.31226I$ $b = 0.225604 - 0.993144I$	$3.12290 + 2.74721I$	$1.20418 - 2.40059I$
$u = -0.312911 - 0.076595I$ $a = 1.31072 + 3.31226I$ $b = 0.225604 + 0.993144I$	$3.12290 - 2.74721I$	$1.20418 + 2.40059I$
$u = 0.134773 + 0.261504I$ $a = -2.21098 + 3.95237I$ $b = 0.443171 + 1.057770I$	$-2.30070 - 0.22946I$	$-0.69908 + 2.57896I$
$u = 0.134773 - 0.261504I$ $a = -2.21098 - 3.95237I$ $b = 0.443171 - 1.057770I$	$-2.30070 + 0.22946I$	$-0.69908 - 2.57896I$

II.
$\boldsymbol{I_2^u = \langle -2.45\times 10^8 u^{18} - 1.63\times 10^9 u^{17} + \cdots + 1.37\times 10^7 b + 7.25\times 10^8,\ 2.62\times 10^7 u^{18} + 1.67\times 10^8 u^{17} + \cdots + 1.37\times 10^7 a - 6.07\times 10^7,\ u^{19} + 7u^{18} + \cdots - 8u - 1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1.90449u^{18} - 12.1350u^{17} + \cdots + 17.7714u + 4.41466 \\ 17.8106u^{18} + 118.602u^{17} + \cdots - 265.643u - 52.7405 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 25.9870u^{18} + 172.460u^{17} + \cdots - 380.519u - 74.9910 \\ -8.44948u^{18} - 55.4779u^{17} + \cdots + 109.905u + 17.9870 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 25.9870u^{18} + 172.460u^{17} + \cdots - 380.519u - 74.9910 \\ -4.78098u^{18} - 31.1791u^{17} + \cdots + 60.2962u + 8.53752 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -3.40312u^{18} - 22.0099u^{17} + \cdots + 40.8714u + 9.29041 \\ 19.3092u^{18} + 128.477u^{17} + \cdots - 288.743u - 57.6162 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -16.8106u^{18} - 111.602u^{17} + \cdots + 242.643u + 44.7405 \\ -8.63245u^{18} - 58.8669u^{17} + \cdots + 148.361u + 33.4431 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 27.5490u^{18} + 183.900u^{17} + \cdots - 410.543u - 79.6704 \\ -10.7384u^{18} - 71.2982u^{17} + \cdots + 153.899u + 26.9299 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 26.3475u^{18} + 175.604u^{17} + \cdots - 386.776u - 74.5982 \\ -9.53695u^{18} - 63.0019u^{17} + \cdots + 130.132u + 21.8577 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 11.6431u^{18} + 78.9152u^{17} + \cdots - 194.709u - 42.5675 \\ -33.5319u^{18} - 224.275u^{17} + \cdots + 512.982u + 103.649 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{815245557}{13743083}u^{18} + \frac{5459581744}{13743083}u^{17} + \cdots - \frac{11845745429}{13743083}u - \frac{2113120363}{13743083}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{19} - 8u^{18} + \cdots + 36u - 5$
c_2	$u^{19} + 11u^{17} + \cdots + 868u - 161$
c_3	$u^{19} + u^{18} + \cdots + u + 1$
c_4	$u^{19} - 7u^{18} + \cdots - 8u + 1$
c_5	$u^{19} + 4u^{18} + \cdots + u + 1$
c_6	$u^{19} + 3u^{18} + \cdots + 14u + 7$
c_7	$u^{19} + u^{18} + \cdots - 8u + 1$
c_8	$u^{19} + 7u^{18} + \cdots - 8u - 1$
c_9	$u^{19} - 5u^{18} + \cdots + 22u^3 + 1$
c_{10}	$u^{19} - u^{18} + \cdots + 43u - 1$
c_{11}	$u^{19} - u^{18} + \cdots + 2u - 1$
c_{12}	$u^{19} + 5u^{18} + \cdots + 22u^3 - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{19} - 24y^{18} + \cdots - 634y - 25$
c_2	$y^{19} + 22y^{18} + \cdots + 278152y - 25921$
c_3	$y^{19} + 11y^{18} + \cdots - 19y - 1$
c_4, c_8	$y^{19} - 9y^{18} + \cdots + 20y - 1$
c_5	$y^{19} - 10y^{18} + \cdots - y - 1$
c_6	$y^{19} + 3y^{18} + \cdots - 1442y - 49$
c_7	$y^{19} + 13y^{18} + \cdots + 12y - 1$
c_9, c_{12}	$y^{19} + 15y^{18} + \cdots + 110y^2 - 1$
c_{10}	$y^{19} - 3y^{18} + \cdots + 1749y - 1$
c_{11}	$y^{19} + 7y^{18} + \cdots + 2y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.101971 + 1.194250I$ $a = -0.121869 - 0.998593I$ $b = -0.240972 - 0.876588I$	$-3.83821 + 0.57575I$	$-7.03661 + 7.04903I$
$u = 0.101971 - 1.194250I$ $a = -0.121869 + 0.998593I$ $b = -0.240972 + 0.876588I$	$-3.83821 - 0.57575I$	$-7.03661 - 7.04903I$
$u = 0.748450$ $a = 3.67791$ $b = -2.32349$	-0.535625	78.4150
$u = 0.427813 + 0.579261I$ $a = -1.282800 - 0.006750I$ $b = 0.444930 - 0.593169I$	$-0.32639 + 4.17404I$	$-1.48783 - 8.92780I$
$u = 0.427813 - 0.579261I$ $a = -1.282800 + 0.006750I$ $b = 0.444930 + 0.593169I$	$-0.32639 - 4.17404I$	$-1.48783 + 8.92780I$
$u = 1.292210 + 0.144984I$ $a = 0.145680 + 0.546566I$ $b = 0.293800 - 0.044567I$	$2.98574 - 1.37365I$	$0.97264 + 5.34570I$
$u = 1.292210 - 0.144984I$ $a = 0.145680 - 0.546566I$ $b = 0.293800 + 0.044567I$	$2.98574 + 1.37365I$	$0.97264 - 5.34570I$
$u = -0.494798 + 0.440934I$ $a = 4.05470 + 0.26170I$ $b = -0.648835 + 0.905706I$	$-1.45608 - 7.65096I$	$-1.70341 + 13.93377I$
$u = -0.494798 - 0.440934I$ $a = 4.05470 - 0.26170I$ $b = -0.648835 - 0.905706I$	$-1.45608 + 7.65096I$	$-1.70341 - 13.93377I$
$u = -0.729582 + 1.154870I$ $a = -0.586985 + 0.267393I$ $b = 0.12758 - 1.45789I$	$-6.26150 - 0.33531I$	$-3.59873 + 1.11567I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.729582 - 1.154870I$ $a = -0.586985 - 0.267393I$ $b = 0.12758 + 1.45789I$	$-6.26150 + 0.33531I$	$-3.59873 - 1.11567I$
$u = -1.390760 + 0.152571I$ $a = -0.353819 + 1.029490I$ $b = 0.260600 - 0.902349I$	$5.65950 - 5.58071I$	$3.63137 + 6.94784I$
$u = -1.390760 - 0.152571I$ $a = -0.353819 - 1.029490I$ $b = 0.260600 + 0.902349I$	$5.65950 + 5.58071I$	$3.63137 - 6.94784I$
$u = -1.16440 + 0.99040I$ $a = -1.032030 + 0.398941I$ $b = 0.36202 - 1.39801I$	$-4.92843 - 7.38688I$	$-1.21254 + 5.93258I$
$u = -1.16440 - 0.99040I$ $a = -1.032030 - 0.398941I$ $b = 0.36202 + 1.39801I$	$-4.92843 + 7.38688I$	$-1.21254 - 5.93258I$
$u = -1.58190 + 0.09635I$ $a = -0.150962 - 0.015584I$ $b = 0.335732 - 0.789452I$	$3.86364 - 5.68341I$	$6.69198 + 5.45345I$
$u = -1.58190 - 0.09635I$ $a = -0.150962 + 0.015584I$ $b = 0.335732 + 0.789452I$	$3.86364 + 5.68341I$	$6.69198 - 5.45345I$
$u = -0.334791 + 0.023571I$ $a = 1.48913 + 0.07516I$ $b = -0.27311 - 1.70449I$	$1.27966 + 4.46859I$	$12.53545 - 5.10070I$
$u = -0.334791 - 0.023571I$ $a = 1.48913 - 0.07516I$ $b = -0.27311 + 1.70449I$	$1.27966 - 4.46859I$	$12.53545 + 5.10070I$

III.

$$I_3^u = \langle 56a^5 + 53b + \cdots - 362a - 172,\ a^6 + a^5 + a^4 + 7a^3 - 5a^2 - 5a - 1,\ u - 1\rangle$$

(i) Arc colorings

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

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

$$a_1 = \begin{pmatrix} a \\ -1.05660a^5 - 0.735849a^4 + \cdots + 6.83019a + 3.24528 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.320755a^5 + 0.169811a^4 + \cdots - 2.03774a - 0.0566038 \\ -0.716981a^5 - 0.320755a^4 + \cdots + 5.84906a - 0.226415 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.320755a^5 + 0.169811a^4 + \cdots - 2.03774a - 0.0566038 \\ -0.396226a^5 - 0.150943a^4 + \cdots + 3.81132a - 0.283019 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 1.05660a^5 + 0.735849a^4 + \cdots - 6.83019a - 3.24528 \\ -2.11321a^5 - 1.47170a^4 + \cdots + 14.6604a + 6.49057 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1.05660a^5 + 0.735849a^4 + \cdots - 6.83019a - 3.24528 \\ -2.11321a^5 - 1.47170a^4 + \cdots + 14.6604a + 6.49057 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.320755a^5 + 0.169811a^4 + \cdots - 2.03774a - 0.0566038 \\ -1.03774a^5 - 0.490566a^4 + \cdots + 7.88679a + 1.83019 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1.03774a^5 + 0.490566a^4 + \cdots - 7.88679a - 1.83019 \\ -1.75472a^5 - 0.811321a^4 + \cdots + 13.7358a + 3.60377 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.811321a^5 - 0.547170a^4 + \cdots + 6.56604a + 2.84906 \\ 1.47170a^5 + 1.13208a^4 + \cdots - 10.5849a - 5.37736 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{128}{53}a^5 - \frac{233}{53}a^4 - \frac{62}{53}a^3 - \frac{1428}{53}a^2 + \frac{623}{53}a + \frac{749}{53}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_9	$(u^3 - u^2 + 2u - 1)^2$
c_2	u^6
c_3	$(u^3 - u^2 + 1)^2$
c_4	$(u + 1)^6$
c_5, c_7	$u^6 - 3u^5 + 2u^4 - 3u^3 - 2u^2 - 2u - 1$
c_6	$u^6 - 6u^5 + 12u^4 - 10u^3 + 9u^2 - 14u + 7$
c_8	$(u - 1)^6$
c_{10}, c_{11}	$u^6 - 3u^4 - 2u^3 + 6u^2 - 2u - 1$
c_{12}	$(u^3 + u^2 + 2u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_9, c_{12}	$(y^3 + 3y^2 + 2y - 1)^2$
c_2	y^6
c_3	$(y^3 - y^2 + 2y - 1)^2$
c_4, c_8	$(y - 1)^6$
c_5, c_7	$y^6 - 5y^5 - 18y^4 - 31y^3 - 12y^2 + 1$
c_6	$y^6 - 12y^5 + 42y^4 - 38y^3 - 31y^2 - 70y + 49$
c_{10}, c_{11}	$y^6 - 6y^5 + 21y^4 - 42y^3 + 34y^2 - 16y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = 1.04327$ $b = -0.473427$	0.531480	-12.4510
$u = 1.00000$ $a = -0.312008 + 0.108803I$ $b = 0.527087 + 1.198340I$	$4.66906 - 2.82812I$	$8.17024 + 3.11418I$
$u = 1.00000$ $a = -0.312008 - 0.108803I$ $b = 0.527087 - 1.198340I$	$4.66906 + 2.82812I$	$8.17024 - 3.11418I$
$u = 1.00000$ $a = 0.40453 + 1.94320I$ $b = -0.189446 - 0.636059I$	$4.66906 - 2.82812I$	$11.35919 - 0.65976I$
$u = 1.00000$ $a = 0.40453 - 1.94320I$ $b = -0.189446 + 0.636059I$	$4.66906 + 2.82812I$	$11.35919 + 0.65976I$
$u = 1.00000$ $a = -2.22830$ $b = 2.79815$	0.531480	-108.610

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^3-u^2+2u-1)^2)(u^{19}-8u^{18}+\cdots+36u-5)$ $\cdot(u^{85}+7u^{84}+\cdots-276406u-10363)$
c_2	$u^6(u^{19}+11u^{17}+\cdots+868u-161)(u^{85}-u^{84}+\cdots+1536u-64)$
c_3	$((u^3-u^2+1)^2)(u^{19}+u^{18}+\cdots+u+1)(u^{85}+2u^{84}+\cdots+4329u-551)$
c_4	$((u+1)^6)(u^{19}-7u^{18}+\cdots-8u+1)(u^{85}-9u^{83}+\cdots-8u-1)$
c_5	$(u^6-3u^5+\cdots-2u-1)(u^{19}+4u^{18}+\cdots+u+1)$ $\cdot(u^{85}-11u^{83}+\cdots-9u-1)$
c_6	$(u^6-6u^5+\cdots-14u+7)(u^{19}+3u^{18}+\cdots+14u+7)$ $\cdot(u^{85}-2u^{84}+\cdots-2540737042u-524132531)$
c_7	$(u^6-3u^5+\cdots-2u-1)(u^{19}+u^{18}+\cdots-8u+1)$ $\cdot(u^{85}+u^{84}+\cdots-35062u-10369)$
c_8	$((u-1)^6)(u^{19}+7u^{18}+\cdots-8u-1)(u^{85}-9u^{83}+\cdots-8u-1)$
c_9	$((u^3-u^2+2u-1)^2)(u^{19}-5u^{18}+\cdots+22u^3+1)$ $\cdot(u^{85}+4u^{84}+\cdots+92u-29)$
c_{10}	$(u^6-3u^4-2u^3+6u^2-2u-1)(u^{19}-u^{18}+\cdots+43u-1)$ $\cdot(u^{85}-26u^{83}+\cdots-8412115u-901067)$
c_{11}	$(u^6-3u^4-2u^3+6u^2-2u-1)(u^{19}-u^{18}+\cdots+2u-1)$ $\cdot(u^{85}-4u^{84}+\cdots-78u-43)$
c_{12}	$((u^3+u^2+2u+1)^2)(u^{19}+5u^{18}+\cdots+22u^3-1)$ $\cdot(u^{85}+4u^{84}+\cdots+92u-29)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^3+3y^2+2y-1)^2)(y^{19}-24y^{18}+\cdots-634y-25)$ $\cdot(y^{85}-105y^{84}+\cdots+28067617904y-107391769)$
c_2	$y^6(y^{19}+22y^{18}+\cdots+278152y-25921)$ $\cdot(y^{85}+43y^{84}+\cdots+264192y-4096)$
c_3	$((y^3-y^2+2y-1)^2)(y^{19}+11y^{18}+\cdots-19y-1)$ $\cdot(y^{85}-10y^{84}+\cdots+13669939y-303601)$
c_4, c_8	$((y-1)^6)(y^{19}-9y^{18}+\cdots+20y-1)(y^{85}-18y^{84}+\cdots+28y-1)$
c_5	$(y^6-5y^5-18y^4-31y^3-12y^2+1)(y^{19}-10y^{18}+\cdots-y-1)$ $\cdot(y^{85}-22y^{84}+\cdots+81y-1)$
c_6	$(y^6-12y^5+42y^4-38y^3-31y^2-70y+49)$ $\cdot(y^{19}+3y^{18}+\cdots-1442y-49)$ $\cdot(y^{85}+48y^{84}+\cdots-2812247482606914286y-274714910052465961)$
c_7	$(y^6-5y^5-18y^4-31y^3-12y^2+1)(y^{19}+13y^{18}+\cdots+12y-1)$ $\cdot(y^{85}+69y^{84}+\cdots+9340452618y-107516161)$
c_9, c_{12}	$((y^3+3y^2+2y-1)^2)(y^{19}+15y^{18}+\cdots+110y^2-1)$ $\cdot(y^{85}+30y^{84}+\cdots-642y-841)$
c_{10}	$(y^6-6y^5+21y^4-42y^3+34y^2-16y+1)$ $\cdot(y^{19}-3y^{18}+\cdots+1749y-1)$ $\cdot(y^{85}-52y^{84}+\cdots+30213827398679y-811921738489)$
c_{11}	$(y^6-6y^5+\cdots-16y+1)(y^{19}+7y^{18}+\cdots+2y-1)$ $\cdot(y^{85}+14y^{84}+\cdots-59104y-1849)$