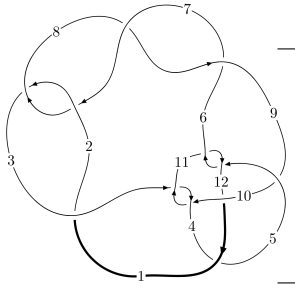
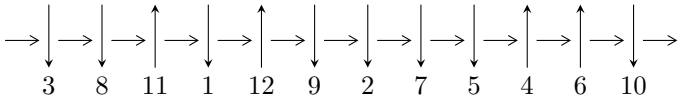
$12a_{0799}$ $(K12a_{0799})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle b-u,\ -4.30859\times 10^{43}u^{34} - 5.23230\times 10^{43}u^{33} + \cdots + 2.27410\times 10^{43}a + 1.99881\times 10^{44},$$
$$u^{35} + u^{34} + \cdots - 2u - 1\rangle$$
$$I_2^u = \langle 1.34503\times 10^{309}u^{71} + 4.07190\times 10^{309}u^{70} + \cdots + 3.30547\times 10^{309}b + 2.52151\times 10^{310},$$
$$-2.10209\times 10^{240}u^{71} - 6.36722\times 10^{240}u^{70} + \cdots + 3.89663\times 10^{240}a - 1.36055\times 10^{242},$$
$$u^{72} + 3u^{71} + \cdots + 48u + 1\rangle$$
$$I_3^u = \langle b+u,\ -886u^{19} - 1725u^{18} + \cdots + 2249a + 1906,\ u^{20} + u^{19} + \cdots - 2u + 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 127 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. $\boldsymbol{I_1^u = \langle b-u,\ -4.31\times 10^{43}u^{34} - 5.23\times 10^{43}u^{33} + \cdots + 2.27\times 10^{43}a + 2.00\times 10^{44},\ u^{35}+u^{34}+\cdots-2u-1\rangle}$

(i) Arc colorings

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

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

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

$$a_{10} = \begin{pmatrix} 1.89464u^{34} + 2.30083u^{33} + \cdots - 29.6286u - 8.78949 \\ u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1.95202u^{34} + 2.28719u^{33} + \cdots - 25.9216u - 8.38330 \\ 0.0586830u^{34} + 0.0132193u^{33} + \cdots + 1.08465u + 0.0710140 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1.63631u^{34} + 1.06267u^{33} + \cdots - 17.1111u + 4.79896 \\ -0.136168u^{34} - 0.222641u^{33} + \cdots + 0.865605u + 0.173572 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.267879u^{34} + 1.37848u^{33} + \cdots - 3.97515u - 10.7436 \\ -0.167035u^{34} - 0.151989u^{33} + \cdots + 3.05890u + 0.326704 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1.89464u^{34} + 2.30083u^{33} + \cdots - 28.6286u - 8.78949 \\ u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 2.30439u^{34} + 3.64678u^{33} + \cdots - 19.4192u - 18.0743 \\ 0.0573800u^{34} - 0.0136340u^{33} + \cdots + 3.70702u + 0.406189 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -4.47995u^{34} - 3.38545u^{33} + \cdots + 40.8417u + 3.13769 \\ 0.112272u^{34} + 0.228464u^{33} + \cdots - 1.35463u + 0.400070 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.207182u^{34} + 0.352338u^{33} + \cdots - 1.38655u + 0.769048 \\ 0.136168u^{34} + 0.222641u^{33} + \cdots - 0.865605u - 0.173572 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1.04114u^{34} + 1.50676u^{33} + \cdots - 16.4681u - 6.55811 \\ -0.167035u^{34} - 0.151989u^{33} + \cdots + 3.05890u + 0.326704 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -8.40302u^{34} - 4.98573u^{33} + \cdots + 50.7095u - 6.32050$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6, c_8	$u^{35} + 9u^{34} + \cdots + 16u + 64$
c_2, c_7	$u^{35} + 7u^{34} + \cdots + 20u + 8$
c_3, c_5, c_{10} c_{11}	$u^{35} + 10u^{33} + \cdots + 3u + 1$
c_4, c_9	$u^{35} - u^{34} + \cdots - 2u + 1$
c_{12}	$u^{35} - 27u^{34} + \cdots + 73728u - 4096$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6, c_8	$y^{35} + 35y^{34} + \cdots + 34048y - 4096$
c_2, c_7	$y^{35} - 9y^{34} + \cdots + 16y - 64$
c_3, c_5, c_{10} c_{11}	$y^{35} + 20y^{34} + \cdots + y - 1$
c_4, c_9	$y^{35} + 15y^{34} + \cdots - 34y - 1$
c_{12}	$y^{35} - 11y^{34} + \cdots + 125829120y - 16777216$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.591089 + 0.775481I$ $a = -0.687556 + 0.152845I$ $b = 0.591089 + 0.775481I$	$1.33872 - 3.31510I$	$0.58501 + 5.76749I$
$u = 0.591089 - 0.775481I$ $a = -0.687556 - 0.152845I$ $b = 0.591089 - 0.775481I$	$1.33872 + 3.31510I$	$0.58501 - 5.76749I$
$u = -0.597092 + 0.966307I$ $a = 1.29984 + 0.98350I$ $b = -0.597092 + 0.966307I$	$-3.80954 - 0.35655I$	$-7.72758 - 2.31082I$
$u = -0.597092 - 0.966307I$ $a = 1.29984 - 0.98350I$ $b = -0.597092 - 0.966307I$	$-3.80954 + 0.35655I$	$-7.72758 + 2.31082I$
$u = -0.274359 + 0.767854I$ $a = 0.872835 + 0.188368I$ $b = -0.274359 + 0.767854I$	$2.17204 - 0.64743I$	$3.30372 + 2.66194I$
$u = -0.274359 - 0.767854I$ $a = 0.872835 - 0.188368I$ $b = -0.274359 - 0.767854I$	$2.17204 + 0.64743I$	$3.30372 - 2.66194I$
$u = -0.413251 + 1.183840I$ $a = 0.674185 + 0.327128I$ $b = -0.413251 + 1.183840I$	$9.66329 - 0.96587I$	$3.05582 + 0.39367I$
$u = -0.413251 - 1.183840I$ $a = 0.674185 - 0.327128I$ $b = -0.413251 - 1.183840I$	$9.66329 + 0.96587I$	$3.05582 - 0.39367I$
$u = 0.419219 + 0.615155I$ $a = 1.22242 + 1.49117I$ $b = 0.419219 + 0.615155I$	$5.07676 - 3.71447I$	$-0.77708 + 4.68220I$
$u = 0.419219 - 0.615155I$ $a = 1.22242 - 1.49117I$ $b = 0.419219 - 0.615155I$	$5.07676 + 3.71447I$	$-0.77708 - 4.68220I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.466745+0.574137I$ $a=-1.13727+1.70318I$ $b=-0.466745+0.574137I$	$4.38894+9.97061I$	$-2.42520-9.73459I$
$u=-0.466745-0.574137I$ $a=-1.13727-1.70318I$ $b=-0.466745-0.574137I$	$4.38894-9.97061I$	$-2.42520+9.73459I$
$u=0.474572+1.194770I$ $a=-0.658032+0.313634I$ $b=0.474572+1.194770I$	$9.55181-5.46707I$	$2.92000+4.74682I$
$u=0.474572-1.194770I$ $a=-0.658032-0.313634I$ $b=0.474572-1.194770I$	$9.55181+5.46707I$	$2.92000-4.74682I$
$u=0.723524+1.111440I$ $a=-1.045310+0.708906I$ $b=0.723524+1.111440I$	$-2.05608-5.08661I$	$-4.00000+6.93227I$
$u=0.723524-1.111440I$ $a=-1.045310-0.708906I$ $b=0.723524-1.111440I$	$-2.05608+5.08661I$	$-4.00000-6.93227I$
$u=-0.950167+0.965088I$ $a=1.212470+0.335142I$ $b=-0.950167+0.965088I$	$-8.23917+6.19708I$	$-11.53177-4.77423I$
$u=-0.950167-0.965088I$ $a=1.212470-0.335142I$ $b=-0.950167-0.965088I$	$-8.23917-6.19708I$	$-11.53177+4.77423I$
$u=0.597400$ $a=-0.567434$ $b=0.597400$	-1.22075	-7.22590
$u=0.097938+0.514145I$ $a=1.96245+0.19680I$ $b=0.097938+0.514145I$	$0.44134-1.63347I$	$1.73800+4.33093I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.097938 - 0.514145I$ $a = 1.96245 - 0.19680I$ $b = 0.097938 - 0.514145I$	$0.44134 + 1.63347I$	$1.73800 - 4.33093I$
$u = -0.271525 + 0.415826I$ $a = -2.75306 + 1.67750I$ $b = -0.271525 + 0.415826I$	$-2.74916 + 4.77966I$	$-3.72482 - 10.00221I$
$u = -0.271525 - 0.415826I$ $a = -2.75306 - 1.67750I$ $b = -0.271525 - 0.415826I$	$-2.74916 - 4.77966I$	$-3.72482 + 10.00221I$
$u = 1.03004 + 1.11959I$ $a = -0.999328 + 0.306692I$ $b = 1.03004 + 1.11959I$	$-3.63302 - 8.69335I$	0
$u = 1.03004 - 1.11959I$ $a = -0.999328 - 0.306692I$ $b = 1.03004 - 1.11959I$	$-3.63302 + 8.69335I$	0
$u = 0.06773 + 1.55270I$ $a = -0.068133 + 0.960500I$ $b = 0.06773 + 1.55270I$	$8.19666 - 3.43452I$	0
$u = 0.06773 - 1.55270I$ $a = -0.068133 - 0.960500I$ $b = 0.06773 - 1.55270I$	$8.19666 + 3.43452I$	0
$u = -1.13426 + 1.07638I$ $a = 1.002730 + 0.193039I$ $b = -1.13426 + 1.07638I$	$-6.3568 + 12.9060I$	0
$u = -1.13426 - 1.07638I$ $a = 1.002730 - 0.193039I$ $b = -1.13426 - 1.07638I$	$-6.3568 - 12.9060I$	0
$u = -0.067600 + 0.311475I$ $a = -3.61790 - 2.90700I$ $b = -0.067600 + 0.311475I$	$-2.02184 - 1.48778I$	$-5.29371 + 6.36546I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.067600-0.311475I$ $a=-3.61790+2.90700I$ $b=-0.067600-0.311475I$	$-2.02184+1.48778I$	$-5.29371-6.36546I$
$u=\ \ 1.20419+1.21154I$ $a=-0.874512+0.183122I$ $b=\ \ 1.20419+1.21154I$	$2.43884-11.28800I$	0
$u=\ \ 1.20419-1.21154I$ $a=-0.874512-0.183122I$ $b=\ \ 1.20419-1.21154I$	$2.43884+11.28800I$	0
$u=-1.23200+1.19581I$ $a=\ \ 0.877886+0.159904I$ $b=-1.23200+1.19581I$	$1.8345+17.7184I$	0
$u=-1.23200-1.19581I$ $a=\ \ 0.877886-0.159904I$ $b=-1.23200-1.19581I$	$1.8345-17.7184I$	0

II. $I_2^u = \langle 1.35 \times 10^{309} u^{71} + 4.07 \times 10^{309} u^{70} + \cdots + 3.31 \times 10^{309} b + 2.52 \times 10^{310},\ -2.10 \times 10^{240} u^{71} - 6.37 \times 10^{240} u^{70} + \cdots + 3.90 \times 10^{240} a - 1.36 \times 10^{242},\ u^{72} + 3u^{71} + \cdots + 48u + 1 \rangle$

(i) Arc colorings

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

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

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

$$a_{10} = \begin{pmatrix} 0.539465u^{71} + 1.63403u^{70} + \cdots + 603.712u + 34.9160 \\ -0.406910u^{71} - 1.23187u^{70} + \cdots - 242.608u - 7.62829 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.135898u^{71} + 0.410976u^{70} + \cdots + 359.814u + 27.2721 \\ -0.433293u^{71} - 1.29628u^{70} + \cdots - 243.604u - 7.64065 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -5.47361u^{71} - 15.9771u^{70} + \cdots - 3245.98u - 92.7647 \\ 0.0926148u^{71} + 0.257322u^{70} + \cdots + 41.1552u - 2.78210 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.130468u^{71} - 0.583660u^{70} + \cdots - 769.572u - 70.4281 \\ 1.03009u^{71} + 3.02070u^{70} + \cdots + 634.312u + 21.1555 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.132555u^{71} + 0.402165u^{70} + \cdots + 361.104u + 27.2877 \\ -0.406910u^{71} - 1.23187u^{70} + \cdots - 242.608u - 7.62829 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.232683u^{71} - 0.798062u^{70} + \cdots - 461.851u - 26.5601 \\ 0.400276u^{71} + 1.09127u^{70} + \cdots + 167.198u + 5.35353 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 4.24388u^{71} + 12.1560u^{70} + \cdots + 1995.98u + 55.1998 \\ -0.237755u^{71} - 0.677729u^{70} + \cdots - 47.8013u + 1.19648 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 7.24447u^{71} + 21.3193u^{70} + \cdots + 4321.80u + 124.943 \\ -0.396176u^{71} - 1.16932u^{70} + \cdots - 127.116u + 1.79571 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.727709u^{71} + 1.96306u^{70} + \cdots - 275.156u - 53.7910 \\ 0.803345u^{71} + 2.34508u^{70} + \cdots + 560.708u + 19.6459 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.619107u^{71} - 1.70406u^{70} + \cdots + 144.641u - 5.48872$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6, c_8	$(u^{12}+3u^{11}+\cdots+2u+1)^6$
c_2, c_7	$(u^{12}-u^{11}-u^{10}+2u^9+3u^8-4u^7-2u^6+4u^5+2u^4-3u^3-u^2+1)^6$
c_3, c_5, c_{10} c_{11}	$u^{72}-u^{71}+\cdots+13014u+2943$
c_4, c_9	$u^{72}-3u^{71}+\cdots-48u+1$
c_{12}	$(u^3+u^2-1)^{24}$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6, c_8	$(y^{12} + 13y^{11} + \cdots + 6y + 1)^6$
c_2, c_7	$(y^{12} - 3y^{11} + \cdots - 2y + 1)^6$
c_3, c_5, c_{10} c_{11}	$y^{72} + 51y^{71} + \cdots + 376303320y + 8661249$
c_4, c_9	$y^{72} - 17y^{71} + \cdots - 552y + 1$
c_{12}	$(y^3 - y^2 + 2y - 1)^{24}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.568176+0.839836I$ $a=-1.093330-0.305104I$ $b=\ \ 1.23118-1.38930I$	$6.00451+4.31046I$	0
$u=-0.568176-0.839836I$ $a=-1.093330+0.305104I$ $b=\ \ 1.23118+1.38930I$	$6.00451-4.31046I$	0
$u=\ \ 0.891554+0.489577I$ $a=\ \ 1.108640+0.226678I$ $b=-1.30602-0.59539I$	$-3.34798-2.47502I$	0
$u=\ \ 0.891554-0.489577I$ $a=\ \ 1.108640-0.226678I$ $b=-1.30602+0.59539I$	$-3.34798+2.47502I$	0
$u=\ \ 0.701909+0.683885I$ $a=\ \ 1.171710-0.080430I$ $b=-1.28434-1.06706I$	$-1.98742-7.07733I$	0
$u=\ \ 0.701909-0.683885I$ $a=\ \ 1.171710+0.080430I$ $b=-1.28434+1.06706I$	$-1.98742+7.07733I$	0
$u=\ \ 0.977106+0.046716I$ $a=\ \ 0.859586-0.803411I$ $b=-0.875721+0.368859I$	$-3.34798+3.18123I$	0
$u=\ \ 0.977106-0.046716I$ $a=\ \ 0.859586+0.803411I$ $b=-0.875721-0.368859I$	$-3.34798-3.18123I$	0
$u=\ \ 0.604256+0.853075I$ $a=\ \ 1.066580-0.273076I$ $b=-1.29161-1.38021I$	$5.64748-10.62950I$	0
$u=\ \ 0.604256-0.853075I$ $a=\ \ 1.066580+0.273076I$ $b=-1.29161+1.38021I$	$5.64748+10.62950I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.509449 + 0.806111I$ $a = 1.151870 - 0.360525I$ $b = -0.302346 - 0.194987I$	$-0.17094 - 2.11219I$	0
$u = 0.509449 - 0.806111I$ $a = 1.151870 + 0.360525I$ $b = -0.302346 + 0.194987I$	$-0.17094 + 2.11219I$	0
$u = -0.875721 + 0.368859I$ $a = -1.155270 + 0.363964I$ $b = 0.977106 + 0.046716I$	$-3.34798 + 3.18123I$	0
$u = -0.875721 - 0.368859I$ $a = -1.155270 - 0.363964I$ $b = 0.977106 - 0.046716I$	$-3.34798 - 3.18123I$	0
$u = -0.904826 + 0.206753I$ $a = 0.792882 + 0.181173I$ $b = -1.32231 - 1.27743I$	$-6.12500 + 4.24921I$	$-13.1960 - 6.9831I$
$u = -0.904826 - 0.206753I$ $a = 0.792882 - 0.181173I$ $b = -1.32231 + 1.27743I$	$-6.12500 - 4.24921I$	$-13.1960 + 6.9831I$
$u = 1.013100 + 0.432835I$ $a = -0.630105 + 0.269206I$ $b = 1.22185 - 0.91863I$	$-4.30852 - 0.71593I$	0
$u = 1.013100 - 0.432835I$ $a = -0.630105 - 0.269206I$ $b = 1.22185 + 0.91863I$	$-4.30852 + 0.71593I$	0
$u = -1.102800 + 0.079429I$ $a = 0.680979 + 0.049047I$ $b = -1.75324 - 1.20623I$	$1.50990 + 7.80134I$	0
$u = -1.102800 - 0.079429I$ $a = 0.680979 - 0.049047I$ $b = -1.75324 + 1.20623I$	$1.50990 - 7.80134I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.062360+0.384623I$ $a=-0.954650+0.355513I$ $b=\ \ 1.52012-0.07163I$	$2.12951+5.84119I$	0
$u=-1.062360-0.384623I$ $a=-0.954650-0.355513I$ $b=\ \ 1.52012+0.07163I$	$2.12951-5.84119I$	0
$u=\ \ 1.131690+0.108519I$ $a=-0.660959+0.063380I$ $b=\ \ 1.74780-1.12060I$	$1.86693-1.48234I$	0
$u=\ \ 1.131690-0.108519I$ $a=-0.660959-0.063380I$ $b=\ \ 1.74780+1.12060I$	$1.86693+1.48234I$	0
$u=\ \ 1.064500+0.420736I$ $a=\ \ 0.952102+0.323418I$ $b=-1.55590-0.16376I$	$2.12951+0.18495I$	0
$u=\ \ 1.064500-0.420736I$ $a=\ \ 0.952102-0.323418I$ $b=-1.55590+0.16376I$	$2.12951-0.18495I$	0
$u=-0.566692+0.558756I$ $a=-1.44223-0.10763I$ $b=\ \ 1.00879-1.02877I$	$-0.17094+3.54405I$	$-0.53377-3.62818I$
$u=-0.566692-0.558756I$ $a=-1.44223+0.10763I$ $b=\ \ 1.00879+1.02877I$	$-0.17094-3.54405I$	$-0.53377+3.62818I$
$u=\ \ 0.171015+1.222870I$ $a=-0.499006-0.787307I$ $b=-0.313284-0.368426I$	$5.64748-4.97322I$	0
$u=\ \ 0.171015-1.222870I$ $a=-0.499006+0.787307I$ $b=-0.313284+0.368426I$	$5.64748+4.97322I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.073230+1.236080I$ $a=\ 0.558583-0.742946I$ $b=\ 0.246654-0.392628I$	$6.00451-1.34579I$	0
$u=-0.073230-1.236080I$ $a=\ 0.558583+0.742946I$ $b=\ 0.246654+0.392628I$	$6.00451+1.34579I$	0
$u=\ 0.266780+0.539724I$ $a=-0.46331-1.85473I$ $b=-0.331284+0.154458I$	$-1.98742-1.42109I$	$-6.66674+4.00366I$
$u=\ 0.266780-0.539724I$ $a=-0.46331+1.85473I$ $b=-0.331284-0.154458I$	$-1.98742+1.42109I$	$-6.66674-4.00366I$
$u=-0.453297+0.338937I$ $a=\ 1.068140+0.798660I$ $b=-0.62453-1.40533I$	$-7.48556-0.35310I$	$-17.6864+0.6298I$
$u=-0.453297-0.338937I$ $a=\ 1.068140-0.798660I$ $b=-0.62453+1.40533I$	$-7.48556+0.35310I$	$-17.6864-0.6298I$
$u=-1.30602+0.59539I$ $a=-0.771502+0.218617I$ $b=\ 0.891554-0.489577I$	$-3.34798+2.47502I$	0
$u=-1.30602-0.59539I$ $a=-0.771502-0.218617I$ $b=\ 0.891554+0.489577I$	$-3.34798-2.47502I$	0
$u=\ 1.00879+1.02877I$ $a=\ 0.795484-0.072863I$ $b=-0.566692-0.558756I$	$-0.17094-3.54405I$	0
$u=\ 1.00879-1.02877I$ $a=\ 0.795484+0.072863I$ $b=-0.566692+0.558756I$	$-0.17094+3.54405I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.313284+0.368426I$ $a=-0.00197-2.37991I$ $b=\ \ 0.171015-1.222870I$	$5.64748+4.97322I$	$-2.12413-2.66036I$
$u=-0.313284-0.368426I$ $a=-0.00197+2.37991I$ $b=\ \ 0.171015+1.222870I$	$5.64748-4.97322I$	$-2.12413+2.66036I$
$u=\ \ 1.52012+0.07163I$ $a=\ \ 0.598977+0.461776I$ $b=-1.062360-0.384623I$	$2.12951-5.84119I$	0
$u=\ \ 1.52012-0.07163I$ $a=\ \ 0.598977-0.461776I$ $b=-1.062360+0.384623I$	$2.12951+5.84119I$	0
$u=\ \ 1.22185+0.91863I$ $a=-0.394705+0.296753I$ $b=\ \ 1.013100-0.432835I$	$-4.30852+0.71593I$	0
$u=\ \ 1.22185-0.91863I$ $a=-0.394705-0.296753I$ $b=\ \ 1.013100+0.432835I$	$-4.30852-0.71593I$	0
$u=\ \ 0.246654+0.392628I$ $a=-0.35363-2.45694I$ $b=-0.073230-1.236080I$	$6.00451+1.34579I$	$-1.33766-2.30403I$
$u=\ \ 0.246654-0.392628I$ $a=-0.35363+2.45694I$ $b=-0.073230+1.236080I$	$6.00451-1.34579I$	$-1.33766+2.30403I$
$u=-0.62453+1.40533I$ $a=\ \ 0.199342+0.448567I$ $b=-0.453297-0.338937I$	$-7.48556+0.35310I$	0
$u=-0.62453-1.40533I$ $a=\ \ 0.199342-0.448567I$ $b=-0.453297+0.338937I$	$-7.48556-0.35310I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.55590+0.16376I$ $a=-0.607599+0.414781I$ $b=\ \ 1.064500-0.420736I$	$2.12951-0.18495I$	0
$u=-1.55590-0.16376I$ $a=-0.607599-0.414781I$ $b=\ \ 1.064500+0.420736I$	$2.12951+0.18495I$	0
$u=-0.331284+0.154458I$ $a=-3.03677+0.83254I$ $b=\ \ 0.266780+0.539724I$	$-1.98742-1.42109I$	$-6.66674+4.00366I$
$u=-0.331284-0.154458I$ $a=-3.03677-0.83254I$ $b=\ \ 0.266780-0.539724I$	$-1.98742+1.42109I$	$-6.66674-4.00366I$
$u=-0.302346+0.194987I$ $a=-3.17175+0.41810I$ $b=\ \ 0.509449-0.806111I$	$-0.17094+2.11219I$	$-0.53377-2.33071I$
$u=-0.302346-0.194987I$ $a=-3.17175-0.41810I$ $b=\ \ 0.509449+0.806111I$	$-0.17094-2.11219I$	$-0.53377+2.33071I$
$u=-1.28434+1.06706I$ $a=-0.689254+0.007309I$ $b=\ \ 0.701909-0.683885I$	$-1.98742+7.07733I$	0
$u=-1.28434-1.06706I$ $a=-0.689254-0.007309I$ $b=\ \ 0.701909+0.683885I$	$-1.98742-7.07733I$	0
$u=-1.32231+1.27743I$ $a=\ \ 0.295292+0.285269I$ $b=-0.904826-0.206753I$	$-6.12500-4.24921I$	0
$u=-1.32231-1.27743I$ $a=\ \ 0.295292-0.285269I$ $b=-0.904826+0.206753I$	$-6.12500+4.24921I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.23118 + 1.38930I$ $a = 0.613796 - 0.087629I$ $b = -0.568176 - 0.839836I$	$6.00451 - 4.31046I$	0
$u = 1.23118 - 1.38930I$ $a = 0.613796 + 0.087629I$ $b = -0.568176 + 0.839836I$	$6.00451 + 4.31046I$	0
$u = -1.29161 + 1.38021I$ $a = -0.604880 - 0.069680I$ $b = 0.604256 - 0.853075I$	$5.64748 + 10.62950I$	0
$u = -1.29161 - 1.38021I$ $a = -0.604880 + 0.069680I$ $b = 0.604256 + 0.853075I$	$5.64748 - 10.62950I$	0
$u = -0.0431717 + 0.0210889I$ $a = 14.1169 + 6.8959I$ $b = -0.07263 - 1.98324I$	$-2.00808 - 3.01307I$	$-11.65126 + 2.63251I$
$u = -0.0431717 - 0.0210889I$ $a = 14.1169 - 6.8959I$ $b = -0.07263 + 1.98324I$	$-2.00808 + 3.01307I$	$-11.65126 - 2.63251I$
$u = -0.07263 + 1.98324I$ $a = 0.013921 + 0.380119I$ $b = -0.0431717 - 0.0210889I$	$-2.00808 + 3.01307I$	0
$u = -0.07263 - 1.98324I$ $a = 0.013921 - 0.380119I$ $b = -0.0431717 + 0.0210889I$	$-2.00808 - 3.01307I$	0
$u = 1.74780 + 1.12060I$ $a = -0.306081 + 0.196243I$ $b = 1.131690 - 0.108519I$	$1.86693 + 1.48234I$	0
$u = 1.74780 - 1.12060I$ $a = -0.306081 - 0.196243I$ $b = 1.131690 + 0.108519I$	$1.86693 - 1.48234I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.75324+1.20623I$ $a=\quad 0.292233+0.201057I$ $b=-1.102800-0.079429I$	$1.50990-7.80134I$	0
$u=-1.75324-1.20623I$ $a=\quad 0.292233-0.201057I$ $b=-1.102800+0.079429I$	$1.50990+7.80134I$	0

III.

$\boldsymbol{I_3^u = \langle b+u,\ -886u^{19}-1725u^{18}+\cdots+2249a+1906,\ u^{20}+u^{19}+\cdots-2u+1\rangle}$

(i) Arc colorings

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

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

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

$$a_{10} = \begin{pmatrix} 0.393953u^{19} + 0.767008u^{18} + \cdots + 2.40907u - 0.847488 \\ -u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1.15918u^{19} + 2.42730u^{18} + \cdots + 1.76123u - 1.22054 \\ -0.650067u^{19} - 1.04669u^{18} + \cdots - 2.02490u + 0.895064 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1.10494u^{19} + 1.45487u^{18} + \cdots + 2.84260u - 0.234771 \\ -0.498444u^{19} - 0.910627u^{18} + \cdots - 0.752334u + 0.115162 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.292574u^{19} + 0.197866u^{18} + \cdots - 1.56114u + 2.34949 \\ 0.00489106u^{19} - 0.576256u^{18} + \cdots + 2.49266u - 0.638061 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.393953u^{19} + 0.767008u^{18} + \cdots + 1.40907u - 0.847488 \\ -u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1.39395u^{19} + 3.76701u^{18} + \cdots - 0.590929u + 1.15251 \\ -0.765229u^{19} - 1.66029u^{18} + \cdots + 0.647843u + 0.373055 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.847488u^{19} - 1.24144u^{18} + \cdots - 1.72877u + 0.285905 \\ 0.895064u^{19} + 1.54513u^{18} + \cdots + 1.15740u + 0.234771 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.396621u^{19} - 0.634504u^{18} + \cdots - 0.405069u - 0.349933 \\ 0.498444u^{19} + 0.910627u^{18} + \cdots + 0.752334u - 0.115162 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.211650u^{19} + 0.154735u^{18} + \cdots + 2.68253u - 1.33793 \\ -0.00489106u^{19} + 0.576256u^{18} + \cdots - 2.49266u + 0.638061 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{16424}{2249}u^{19} + \frac{35896}{2249}u^{18} + \cdots + \frac{2352}{2249}u - \frac{32819}{2249}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{20} - 6u^{19} + \cdots - 11u + 1$
c_2	$u^{20} - 3u^{18} + \cdots - u + 1$
c_3, c_{11}	$u^{20} + 10u^{18} + \cdots - u + 1$
c_4, c_9	$u^{20} + u^{19} + \cdots - 2u + 1$
c_5, c_{10}	$u^{20} + 10u^{18} + \cdots + u + 1$
c_7	$u^{20} - 3u^{18} + \cdots + u + 1$
c_8	$u^{20} + 6u^{19} + \cdots + 11u + 1$
c_{12}	$u^{20} + 8u^{19} + \cdots - 6u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6, c_8	$y^{20} + 22y^{19} + \cdots + 5y + 1$
c_2, c_7	$y^{20} - 6y^{19} + \cdots - 11y + 1$
c_3, c_5, c_{10} c_{11}	$y^{20} + 20y^{19} + \cdots + 19y + 1$
c_4, c_9	$y^{20} - y^{19} + \cdots + 2y + 1$
c_{12}	$y^{20} - 10y^{19} + \cdots - 12y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.803742+0.640038I$ $a=-1.312270-0.216838I$ $b=\ \ 0.803742-0.640038I$	$-0.80556+3.51175I$	$-5.16057-6.47153I$
$u=-0.803742-0.640038I$ $a=-1.312270+0.216838I$ $b=\ \ 0.803742+0.640038I$	$-0.80556-3.51175I$	$-5.16057+6.47153I$
$u=\ \ 0.109977+0.933392I$ $a=-0.202191+0.691646I$ $b=-0.109977-0.933392I$	$-6.93544-0.76917I$	$-4.93268+9.83438I$
$u=\ \ 0.109977-0.933392I$ $a=-0.202191-0.691646I$ $b=-0.109977+0.933392I$	$-6.93544+0.76917I$	$-4.93268-9.83438I$
$u=\ \ 0.025092+1.157510I$ $a=-0.023307+0.429548I$ $b=-0.025092-1.157510I$	$-1.20551-3.04014I$	$0.81171+2.97210I$
$u=\ \ 0.025092-1.157510I$ $a=-0.023307-0.429548I$ $b=-0.025092+1.157510I$	$-1.20551+3.04014I$	$0.81171-2.97210I$
$u=\ \ 0.838930+0.068318I$ $a=\ \ 0.82153+1.21370I$ $b=-0.838930-0.068318I$	$-3.71829-4.43650I$	$-12.2519+8.7425I$
$u=\ \ 0.838930-0.068318I$ $a=\ \ 0.82153-1.21370I$ $b=-0.838930+0.068318I$	$-3.71829+4.43650I$	$-12.2519-8.7425I$
$u=-1.130550+0.326356I$ $a=-0.801063+0.358429I$ $b=\ \ 1.130550-0.326356I$	$-2.11436+2.39551I$	$-2.32396-1.51464I$
$u=-1.130550-0.326356I$ $a=-0.801063-0.358429I$ $b=\ \ 1.130550+0.326356I$	$-2.11436-2.39551I$	$-2.32396+1.51464I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.186100 + 0.148412I$ $a = 0.238472 - 0.592250I$ $b = -1.186100 - 0.148412I$	$3.07275 + 8.15795I$	$-2.68462 - 7.66785I$
$u = 1.186100 - 0.148412I$ $a = 0.238472 + 0.592250I$ $b = -1.186100 + 0.148412I$	$3.07275 - 8.15795I$	$-2.68462 + 7.66785I$
$u = -1.231270 + 0.086350I$ $a = -0.309856 - 0.538687I$ $b = 1.231270 - 0.086350I$	$3.39949 - 1.94064I$	$-1.75418 + 2.97120I$
$u = -1.231270 - 0.086350I$ $a = -0.309856 + 0.538687I$ $b = 1.231270 + 0.086350I$	$3.39949 + 1.94064I$	$-1.75418 - 2.97120I$
$u = 0.506464 + 0.461594I$ $a = 2.66341 - 0.41964I$ $b = -0.506464 - 0.461594I$	$-2.11393 + 0.95837I$	$-7.35023 + 6.82243I$
$u = 0.506464 - 0.461594I$ $a = 2.66341 + 0.41964I$ $b = -0.506464 + 0.461594I$	$-2.11393 - 0.95837I$	$-7.35023 - 6.82243I$
$u = 0.077140 + 0.632787I$ $a = -0.49697 + 1.73221I$ $b = -0.077140 - 0.632787I$	$-4.80805 + 2.38684I$	$-9.41924 - 2.88689I$
$u = 0.077140 - 0.632787I$ $a = -0.49697 - 1.73221I$ $b = -0.077140 + 0.632787I$	$-4.80805 - 2.38684I$	$-9.41924 + 2.88689I$
$u = -0.078140 + 1.399020I$ $a = -0.077754 - 0.975047I$ $b = 0.078140 - 1.399020I$	$8.64916 + 3.38003I$	$6.56566 - 1.45355I$
$u = -0.078140 - 1.399020I$ $a = -0.077754 + 0.975047I$ $b = 0.078140 + 1.399020I$	$8.64916 - 3.38003I$	$6.56566 + 1.45355I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_6	$((u^{12}+3u^{11}+\cdots+2u+1)^6)(u^{20}-6u^{19}+\cdots-11u+1)$ $\cdot(u^{35}+9u^{34}+\cdots+16u+64)$
c_2	$(u^{12}-u^{11}-u^{10}+2u^9+3u^8-4u^7-2u^6+4u^5+2u^4-3u^3-u^2+1)^6$ $\cdot(u^{20}-3u^{18}+\cdots-u+1)(u^{35}+7u^{34}+\cdots+20u+8)$
c_3, c_{11}	$(u^{20}+10u^{18}+\cdots-u+1)(u^{35}+10u^{33}+\cdots+3u+1)$ $\cdot(u^{72}-u^{71}+\cdots+13014u+2943)$
c_4, c_9	$(u^{20}+u^{19}+\cdots-2u+1)(u^{35}-u^{34}+\cdots-2u+1)$ $\cdot(u^{72}-3u^{71}+\cdots-48u+1)$
c_5, c_{10}	$(u^{20}+10u^{18}+\cdots+u+1)(u^{35}+10u^{33}+\cdots+3u+1)$ $\cdot(u^{72}-u^{71}+\cdots+13014u+2943)$
c_7	$(u^{12}-u^{11}-u^{10}+2u^9+3u^8-4u^7-2u^6+4u^5+2u^4-3u^3-u^2+1)^6$ $\cdot(u^{20}-3u^{18}+\cdots+u+1)(u^{35}+7u^{34}+\cdots+20u+8)$
c_8	$((u^{12}+3u^{11}+\cdots+2u+1)^6)(u^{20}+6u^{19}+\cdots+11u+1)$ $\cdot(u^{35}+9u^{34}+\cdots+16u+64)$
c_{12}	$((u^3+u^2-1)^{24})(u^{20}+8u^{19}+\cdots-6u^2+1)$ $\cdot(u^{35}-27u^{34}+\cdots+73728u-4096)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_6, c_8	$((y^{12}+13y^{11}+\cdots+6y+1)^6)(y^{20}+22y^{19}+\cdots+5y+1)$ $\cdot(y^{35}+35y^{34}+\cdots+34048y-4096)$
c_2, c_7	$((y^{12}-3y^{11}+\cdots-2y+1)^6)(y^{20}-6y^{19}+\cdots-11y+1)$ $\cdot(y^{35}-9y^{34}+\cdots+16y-64)$
c_3, c_5, c_{10} c_{11}	$(y^{20}+20y^{19}+\cdots+19y+1)(y^{35}+20y^{34}+\cdots+y-1)$ $\cdot(y^{72}+51y^{71}+\cdots+376303320y+8661249)$
c_4, c_9	$(y^{20}-y^{19}+\cdots+2y+1)(y^{35}+15y^{34}+\cdots-34y-1)$ $\cdot(y^{72}-17y^{71}+\cdots-552y+1)$
c_{12}	$((y^3-y^2+2y-1)^{24})(y^{20}-10y^{19}+\cdots-12y+1)$ $\cdot(y^{35}-11y^{34}+\cdots+125829120y-16777216)$