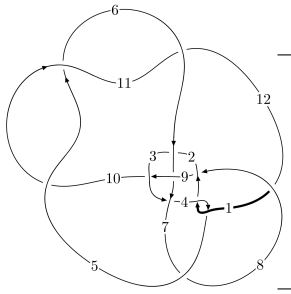
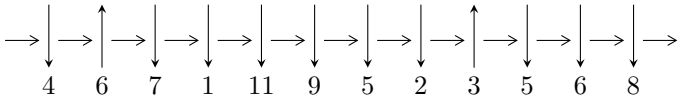
$12n_{0849}$ $(K12n_{0849})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle 14414381991662u^{47} + 292350624991207u^{46} + \cdots + 1655190479 36b + 3699504946588160, \\
&\quad - 7225595598805u^{47} - 223846226739163u^{46} + \cdots + 662076191744a + 76742753642760704, \\
&\quad u^{48} + 23u^{47} + \cdots - 16384u - 2048\rangle \\
I_2^u &= \langle -1.88889 \times 10^{110}a^{21}u^2 - 7.22697 \times 10^{109}a^{20}u^2 + \cdots + 4.85317 \times 10^{111}a - 7.98335 \times 10^{111}, \\
&\quad - 3a^{21}u^2 - a^{20}u^2 + \cdots + 95954a + 14907,\ u^3 - u^2 + 1\rangle \\
I_3^u &= \langle -1731258u^{33} - 1052843u^{32} + \cdots + 59731b + 2238511, \\
&\quad - 2238511u^{33} - 1731258u^{32} + \cdots + 59731a + 4003959,\ u^{34} - 13u^{32} + \cdots - 4u^2 + 1\rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 148 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. $\boldsymbol{I_1^u = \langle 1.44\times 10^{13}u^{47} + 2.92\times 10^{14}u^{46} + \cdots + 1.66\times 10^{11}b + 3.70\times 10^{15},\ -7.23\times 10^{12}u^{47} - 2.24\times 10^{14}u^{46} + \cdots + 6.62\times 10^{11}a + 7.67\times 10^{16},\ u^{48} + 23u^{47} + \cdots - 16384u - 2048\rangle}$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 10.9135u^{47} + 338.097u^{46} + \cdots - 795641.u - 115912. \\ -87.0859u^{47} - 1766.27u^{46} + \cdots - 62895.2u - 22350.9 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -138.711u^{47} - 2931.89u^{46} + \cdots + 716421.u + 84790.7 \\ -209.611u^{47} - 4622.85u^{46} + \cdots + 2.43872\times 10^6 u + 328655. \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 91.8720u^{47} + 2084.95u^{46} + \cdots - 1.48673\times 10^6 u - 205474. \\ 28.1022u^{47} + 751.561u^{46} + \cdots - 1.29976\times 10^6 u - 188154. \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -24.7817u^{47} - 683.674u^{46} + \cdots + 1.29959\times 10^6 u + 188722. \\ 125.160u^{47} + 2650.22u^{46} + \cdots - 622795.u - 72062.4 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -149.941u^{47} - 3333.90u^{46} + \cdots + 1.92239\times 10^6 u + 260784. \\ 125.160u^{47} + 2650.22u^{46} + \cdots - 622795.u - 72062.4 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 89.8291u^{47} + 1976.87u^{46} + \cdots - 998382.u - 133953. \\ -50.9494u^{47} - 1049.69u^{46} + \cdots + 60359.1u + 1292.65 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 113.889u^{47} + 2479.30u^{46} + \cdots - 1.06684\times 10^6 u - 139256. \\ 51.4138u^{47} + 1243.01u^{46} + \cdots - 1.39957\times 10^6 u - 199576. \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$$= \frac{16683231602363}{165519047936}u^{47} + \frac{389925962050557}{165519047936}u^{46} + \cdots - \frac{1394447538636670}{646558781}u - \frac{196913051211846}{646558781}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{48} - 12u^{47} + \cdots - 352u + 64$
c_2, c_9	$u^{48} - 13u^{46} + \cdots + 4u - 1$
c_3, c_8	$u^{48} + u^{47} + \cdots + 20u - 13$
c_5, c_{10}, c_{11}	$u^{48} - 23u^{47} + \cdots + 16384u - 2048$
c_6	$u^{48} - 19u^{47} + \cdots - 56u + 8$
c_7, c_{12}	$u^{48} - u^{47} + \cdots + 11u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{48} + 26y^{47} + \cdots - 110080y + 4096$
c_2, c_9	$y^{48} - 26y^{47} + \cdots + 10y + 1$
c_3, c_8	$y^{48} + 7y^{47} + \cdots + 2616y + 169$
c_5, c_{10}, c_{11}	$y^{48} - 27y^{47} + \cdots - 14680064y + 4194304$
c_6	$y^{48} - 19y^{47} + \cdots + 1056y + 64$
c_7, c_{12}	$y^{48} + 33y^{47} + \cdots - 59y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.485125+0.981047I$ $a=-1.089450+0.650919I$ $b=\ \ 0.110062+1.384580I$	$8.27627-1.52472I$	0
$u=-0.485125-0.981047I$ $a=-1.089450-0.650919I$ $b=\ \ 0.110062-1.384580I$	$8.27627+1.52472I$	0
$u=-0.530290+0.962673I$ $a=\ \ 0.901020-0.101260I$ $b=\ \ 0.380322-0.921086I$	$3.99581+0.06032I$	0
$u=-0.530290-0.962673I$ $a=\ \ 0.901020+0.101260I$ $b=\ \ 0.380322+0.921086I$	$3.99581-0.06032I$	0
$u=-0.864674+0.731233I$ $a=\ \ 1.25224-0.88853I$ $b=\ \ 0.43306-1.68397I$	$4.75585+2.84058I$	0
$u=-0.864674-0.731233I$ $a=\ \ 1.25224+0.88853I$ $b=\ \ 0.43306+1.68397I$	$4.75585-2.84058I$	0
$u=-0.429460+1.063940I$ $a=-0.732211+0.055128I$ $b=-0.255802+0.802706I$	$7.68349-4.13518I$	0
$u=-0.429460-1.063940I$ $a=-0.732211-0.055128I$ $b=-0.255802-0.802706I$	$7.68349+4.13518I$	0
$u=-0.886566+0.742815I$ $a=-1.39850+0.79251I$ $b=-0.65118+1.74144I$	$4.69075+2.77591I$	0
$u=-0.886566-0.742815I$ $a=-1.39850-0.79251I$ $b=-0.65118-1.74144I$	$4.69075-2.77591I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.167430 + 0.129361I$ $a = -0.206635 + 0.246262I$ $b = 0.273089 - 0.260763I$	$1.58195 + 0.65248I$	0
$u = 1.167430 - 0.129361I$ $a = -0.206635 - 0.246262I$ $b = 0.273089 + 0.260763I$	$1.58195 - 0.65248I$	0
$u = -0.494005 + 1.099620I$ $a = 0.953875 - 0.604813I$ $b = -0.193845 - 1.347680I$	$3.09129 - 6.44202I$	0
$u = -0.494005 - 1.099620I$ $a = 0.953875 + 0.604813I$ $b = -0.193845 + 1.347680I$	$3.09129 + 6.44202I$	0
$u = -0.552382 + 1.105430I$ $a = -0.909474 + 0.662368I$ $b = 0.229824 + 1.371240I$	$6.60458 - 12.25780I$	0
$u = -0.552382 - 1.105430I$ $a = -0.909474 - 0.662368I$ $b = 0.229824 - 1.371240I$	$6.60458 + 12.25780I$	0
$u = 0.648175 + 0.341671I$ $a = 0.150106 - 0.372567I$ $b = -0.224590 + 0.190202I$	$-0.314464 - 0.268937I$	$-8.00000 + 0.I$
$u = 0.648175 - 0.341671I$ $a = 0.150106 + 0.372567I$ $b = -0.224590 - 0.190202I$	$-0.314464 + 0.268937I$	$-8.00000 + 0.I$
$u = -0.635682 + 1.098030I$ $a = -0.808152 + 0.282764I$ $b = -0.203245 + 1.067120I$	$7.01061 + 4.54766I$	0
$u = -0.635682 - 1.098030I$ $a = -0.808152 - 0.282764I$ $b = -0.203245 - 1.067120I$	$7.01061 - 4.54766I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.278030+0.264389I$ $a=\ \ 0.319676+0.937003I$ $b=\ \ 0.656290+1.113000I$	$-2.93683+5.48157I$	0
$u=-1.278030-0.264389I$ $a=\ \ 0.319676-0.937003I$ $b=\ \ 0.656290-1.113000I$	$-2.93683-5.48157I$	0
$u=\ \ 0.358024+0.582809I$ $a=\ \ 1.062550+0.446046I$ $b=-0.120460-0.778961I$	$-0.94188-1.73288I$	$-5.17947+1.25821I$
$u=\ \ 0.358024-0.582809I$ $a=\ \ 1.062550-0.446046I$ $b=-0.120460+0.778961I$	$-0.94188+1.73288I$	$-5.17947-1.25821I$
$u=-1.33184$ $a=-0.851126$ $b=-1.13356$	-6.08512	0
$u=-1.095600+0.816987I$ $a=\ \ 0.865533-0.655040I$ $b=\ \ 0.41312-1.42479I$	$5.53516+2.26996I$	0
$u=-1.095600-0.816987I$ $a=\ \ 0.865533+0.655040I$ $b=\ \ 0.41312+1.42479I$	$5.53516-2.26996I$	0
$u=-1.181650+0.698223I$ $a=-0.677817+0.708409I$ $b=-0.306317+1.310360I$	$1.93618+6.05436I$	0
$u=-1.181650-0.698223I$ $a=-0.677817-0.708409I$ $b=-0.306317-1.310360I$	$1.93618-6.05436I$	0
$u=-1.195270+0.698625I$ $a=\ \ 1.37256-0.94570I$ $b=\ \ 0.97988-2.08927I$	$6.06307+7.68979I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.195270-0.698625I$ $a=\ 1.37256+0.94570I$ $b=\ 0.97988+2.08927I$	$6.06307-7.68979I$	0
$u=-1.18735+0.78240I$ $a=\ 1.33912-0.77886I$ $b=\ 0.98063-1.97251I$	$4.6066+19.0224I$	0
$u=-1.18735-0.78240I$ $a=\ 1.33912+0.77886I$ $b=\ 0.98063+1.97251I$	$4.6066-19.0224I$	0
$u=-1.20933+0.76456I$ $a=-1.30402+0.83062I$ $b=-0.94193+2.00149I$	$0.87016+13.12930I$	0
$u=-1.20933-0.76456I$ $a=-1.30402-0.83062I$ $b=-0.94193-2.00149I$	$0.87016-13.12930I$	0
$u=-1.23864+0.74371I$ $a=\ 0.661993-0.592040I$ $b=\ 0.379666-1.225650I$	$5.19931+10.67840I$	0
$u=-1.23864-0.74371I$ $a=\ 0.661993+0.592040I$ $b=\ 0.379666+1.225650I$	$5.19931-10.67840I$	0
$u=\ 0.093558+0.533903I$ $a=\ 0.324021+0.855715I$ $b=\ 0.426554-0.253055I$	$1.21279-2.43642I$	$-4.24996+4.94851I$
$u=\ 0.093558-0.533903I$ $a=\ 0.324021-0.855715I$ $b=\ 0.426554+0.253055I$	$1.21279+2.43642I$	$-4.24996-4.94851I$
$u=-1.44267+0.21746I$ $a=-0.68065+2.03149I$ $b=-0.54019+3.07879I$	$-6.76961+4.70527I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.44267-0.21746I$ $a=-0.68065-2.03149I$ $b=-0.54019-3.07879I$	$-6.76961-4.70527I$	0
$u=\ \ 1.48960+0.13187I$ $a=\ \ 0.305557+0.139429I$ $b=-0.436770-0.247989I$	$-4.21849+2.31870I$	0
$u=\ \ 1.48960-0.13187I$ $a=\ \ 0.305557-0.139429I$ $b=-0.436770+0.247989I$	$-4.21849-2.31870I$	0
$u=\ \ 1.54460+0.00922I$ $a=-0.253984+0.118646I$ $b=\ \ 0.393396-0.180918I$	$-1.53991-8.40513I$	0
$u=\ \ 1.54460-0.00922I$ $a=-0.253984-0.118646I$ $b=\ \ 0.393396+0.180918I$	$-1.53991+8.40513I$	0
$u=\ \ 0.425779$ $a=\ \ 0.565774$ $b=-0.240895$	-0.780920	-12.7940
$u=-1.64161+0.03646I$ $a=-0.0546808-0.1253800I$ $b=-0.094336-0.203832I$	$-8.54644+1.50129I$	0
$u=-1.64161-0.03646I$ $a=-0.0546808+0.1253800I$ $b=-0.094336+0.203832I$	$-8.54644-1.50129I$	0

II. $\boldsymbol{I_2^u = \langle -1.89 \times 10^{110} a^{21} u^2 - 7.23 \times 10^{109} a^{20} u^2 + \cdots + 4.85 \times 10^{111} a - 7.98 \times 10^{111},\ -3a^{21}u^2 - a^{20}u^2 + \cdots + 95954a + 14907,\ u^3 - u^2 + 1\rangle}$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} a \\ 0.297935a^{21}u^2 + 0.113991a^{20}u^2 + \cdots - 7.65490a + 12.5921 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -u \\ -u^2 + u + 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.297935a^{21}u^2 - 0.113991a^{20}u^2 + \cdots + 8.65490a - 12.5921 \\ 0.105230a^{21}u^2 + 0.223129a^{20}u^2 + \cdots - 52.5944a + 28.7118 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.444006a^{21}u^2 + 0.0389262a^{20}u^2 + \cdots - 37.4768a - 1.11629 \\ 0.219343a^{21}u^2 + 0.183640a^{20}u^2 + \cdots - 44.5258a + 31.9350 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.129004a^{21}u^2 + 0.124229a^{20}u^2 + \cdots - 52.7203a + 17.2976 \\ 0.313975a^{21}u^2 + 0.132304a^{20}u^2 + \cdots - 3.59373a + 21.0298 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.442978a^{21}u^2 - 0.00807409a^{20}u^2 + \cdots - 49.1266a - 3.73220 \\ 0.313975a^{21}u^2 + 0.132304a^{20}u^2 + \cdots - 3.59373a + 21.0298 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.186169a^{21}u^2 - 0.104298a^{20}u^2 + \cdots + 39.4472a - 13.6705 \\ -0.314462a^{21}u^2 - 0.0891353a^{20}u^2 + \cdots + 5.08668a - 13.7803 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.180523a^{21}u^2 - 0.0945800a^{20}u^2 + \cdots + 2.88290a - 6.04935 \\ 0.255393a^{21}u^2 + 0.177825a^{20}u^2 + \cdots - 31.5249a + 24.9875 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2.26166a^{21}u^2 - 0.476423a^{20}u^2 + \cdots + 4.34057a - 83.6301$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$(u^{11}+3u^{10}+\cdots+2u+1)^6$
c_2, c_9	$u^{66}-3u^{65}+\cdots+7772u-1789$
c_3, c_8	$u^{66}-u^{65}+\cdots+17622u-13807$
c_5, c_{10}, c_{11}	$(u^3+u^2-1)^{22}$
c_6	$(u^{11}+5u^{10}+12u^9+15u^8+8u^7-4u^6-8u^5-3u^4+3u^3+3u^2-1)^6$
c_7, c_{12}	$u^{66}+u^{65}+\cdots+509278u-214703$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y^{11} + 7y^{10} + \cdots - 6y - 1)^6$
c_2, c_9	$y^{66} + 15y^{65} + \cdots - 174341816y + 3200521$
c_3, c_8	$y^{66} + 3y^{65} + \cdots - 190413984y + 190633249$
c_5, c_{10}, c_{11}	$(y^3 - y^2 + 2y - 1)^{22}$
c_6	$(y^{11} - y^{10} + \cdots + 6y - 1)^6$
c_7, c_{12}	$y^{66} - 9y^{65} + \cdots - 545194749936y + 46097378209$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.877439 + 0.744862I$ $a = 0.902102 - 0.486271I$ $b = 0.320024 - 1.143140I$	$-0.99957 - 2.82812I$	$-20.7516 + 2.9794I$
$u = 0.877439 + 0.744862I$ $a = 0.430794 + 0.937113I$ $b = -1.153740 - 0.245268I$	$-0.99957 - 2.82812I$	$-20.7516 + 2.9794I$
$u = 0.877439 + 0.744862I$ $a = -0.552422 - 0.887606I$ $b = -0.098598 - 1.033000I$	$0.576298 - 0.123714I$	$-11.95786 + 3.06277I$
$u = 0.877439 + 0.744862I$ $a = -0.463244 + 0.951207I$ $b = -0.19763 + 1.72019I$	$3.13943 - 8.75255I$	$-11.6607 + 13.0030I$
$u = 0.877439 + 0.744862I$ $a = 0.646143 + 0.628778I$ $b = -0.176427 + 1.190300I$	$0.576298 - 0.123714I$	$-11.95786 + 3.06277I$
$u = 0.877439 + 0.744862I$ $a = 0.543271 + 0.997448I$ $b = -0.247363 + 0.953185I$	$1.51685 + 2.38817I$	$-8.92628 - 6.03333I$
$u = 0.877439 + 0.744862I$ $a = -0.372113 - 0.770438I$ $b = 0.266274 - 1.279860I$	$1.51685 + 2.38817I$	$-8.92628 - 6.03333I$
$u = 0.877439 + 0.744862I$ $a = 0.332427 + 1.215800I$ $b = 0.01738 + 1.77304I$	$6.00992 + 2.17262I$	$-0.64965 - 3.24807I$
$u = 0.877439 + 0.744862I$ $a = 1.129210 + 0.564488I$ $b = -0.03139 + 1.49377I$	$0.955193 - 0.580337I$	$-12.12606 - 2.08415I$
$u = 0.877439 + 0.744862I$ $a = -0.819129 - 1.007060I$ $b = -0.57034 - 1.33641I$	$0.955193 - 0.580337I$	$-12.12606 - 2.08415I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.877439 + 0.744862I$ $a = 1.333130 - 0.022190I$ $b = 1.29442 + 1.74631I$	$6.00992 - 7.82886I$	$-0.64965 + 9.20696I$
$u = 0.877439 + 0.744862I$ $a = -1.370440 - 0.181563I$ $b = -1.36448 - 1.31693I$	$1.51685 - 8.04441I$	$-8.9263 + 11.9922I$
$u = 0.877439 + 0.744862I$ $a = 1.40246 + 0.31556I$ $b = 1.26362 + 1.15269I$	$0.57630 - 5.53253I$	$-11.95786 + 2.89612I$
$u = 0.877439 + 0.744862I$ $a = -1.43975 - 0.11169I$ $b = -0.75840 - 1.62760I$	$0.95519 - 5.07591I$	$-12.1261 + 8.0430I$
$u = 0.877439 + 0.744862I$ $a = -1.45028 - 0.09496I$ $b = -0.546673 + 0.224501I$	$3.13943 + 3.09630I$	$-11.66070 - 7.04410I$
$u = 0.877439 + 0.744862I$ $a = -1.48510 - 0.05299I$ $b = -0.99552 - 1.32153I$	$0.57630 - 5.53253I$	$-11.95786 + 2.89612I$
$u = 0.877439 + 0.744862I$ $a = 0.235861 - 0.456083I$ $b = 1.20180 + 1.16358I$	$3.13943 + 3.09630I$	$-11.66070 - 7.04410I$
$u = 0.877439 + 0.744862I$ $a = -0.83632 - 1.25050I$ $b = 1.114990 - 0.489573I$	$3.13943 - 8.75255I$	$-11.6607 + 13.0030I$
$u = 0.877439 + 0.744862I$ $a = -1.00846 - 1.16462I$ $b = 0.61392 - 1.31441I$	$6.00992 + 2.17262I$	$-0.64965 - 3.24807I$
$u = 0.877439 + 0.744862I$ $a = 1.41750 + 0.65162I$ $b = 1.18010 + 1.17042I$	$0.95519 - 5.07591I$	$-12.1261 + 8.0430I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.877439 + 0.744862I$ $a = 1.64426 + 0.10506I$ $b = 1.06724 + 1.18010I$	$1.51685 - 8.04441I$	$-8.9263 + 11.9922I$
$u = 0.877439 + 0.744862I$ $a = -1.83928 - 0.42886I$ $b = -1.18627 - 0.97353I$	$6.00992 - 7.82886I$	$-0.64965 + 9.20696I$
$u = 0.877439 - 0.744862I$ $a = 0.902102 + 0.486271I$ $b = 0.320024 + 1.143140I$	$-0.99957 + 2.82812I$	$-20.7516 - 2.9794I$
$u = 0.877439 - 0.744862I$ $a = 0.430794 - 0.937113I$ $b = -1.153740 + 0.245268I$	$-0.99957 + 2.82812I$	$-20.7516 - 2.9794I$
$u = 0.877439 - 0.744862I$ $a = -0.552422 + 0.887606I$ $b = -0.098598 + 1.033000I$	$0.576298 + 0.123714I$	$-11.95786 - 3.06277I$
$u = 0.877439 - 0.744862I$ $a = -0.463244 - 0.951207I$ $b = -0.19763 - 1.72019I$	$3.13943 + 8.75255I$	$-11.6607 - 13.0030I$
$u = 0.877439 - 0.744862I$ $a = 0.646143 - 0.628778I$ $b = -0.176427 - 1.190300I$	$0.576298 + 0.123714I$	$-11.95786 - 3.06277I$
$u = 0.877439 - 0.744862I$ $a = 0.543271 - 0.997448I$ $b = -0.247363 - 0.953185I$	$1.51685 - 2.38817I$	$-8.92628 + 6.03333I$
$u = 0.877439 - 0.744862I$ $a = -0.372113 + 0.770438I$ $b = 0.266274 + 1.279860I$	$1.51685 - 2.38817I$	$-8.92628 + 6.03333I$
$u = 0.877439 - 0.744862I$ $a = 0.332427 - 1.215800I$ $b = 0.01738 - 1.77304I$	$6.00992 - 2.17262I$	$-0.64965 + 3.24807I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.877439 - 0.744862I$ $a = 1.129210 - 0.564488I$ $b = -0.03139 - 1.49377I$	$0.955193 + 0.580337I$	$-12.12606 + 2.08415I$
$u = 0.877439 - 0.744862I$ $a = -0.819129 + 1.007060I$ $b = -0.57034 + 1.33641I$	$0.955193 + 0.580337I$	$-12.12606 + 2.08415I$
$u = 0.877439 - 0.744862I$ $a = 1.333130 + 0.022190I$ $b = 1.29442 - 1.74631I$	$6.00992 + 7.82886I$	$-0.64965 - 9.20696I$
$u = 0.877439 - 0.744862I$ $a = -1.370440 + 0.181563I$ $b = -1.36448 + 1.31693I$	$1.51685 + 8.04441I$	$-8.9263 - 11.9922I$
$u = 0.877439 - 0.744862I$ $a = 1.40246 - 0.31556I$ $b = 1.26362 - 1.15269I$	$0.57630 + 5.53253I$	$-11.95786 - 2.89612I$
$u = 0.877439 - 0.744862I$ $a = -1.43975 + 0.11169I$ $b = -0.75840 + 1.62760I$	$0.95519 + 5.07591I$	$-12.1261 - 8.0430I$
$u = 0.877439 - 0.744862I$ $a = -1.45028 + 0.09496I$ $b = -0.546673 - 0.224501I$	$3.13943 - 3.09630I$	$-11.66070 + 7.04410I$
$u = 0.877439 - 0.744862I$ $a = -1.48510 + 0.05299I$ $b = -0.99552 + 1.32153I$	$0.57630 + 5.53253I$	$-11.95786 - 2.89612I$
$u = 0.877439 - 0.744862I$ $a = 0.235861 + 0.456083I$ $b = 1.20180 - 1.16358I$	$3.13943 - 3.09630I$	$-11.66070 + 7.04410I$
$u = 0.877439 - 0.744862I$ $a = -0.83632 + 1.25050I$ $b = 1.114990 + 0.489573I$	$3.13943 + 8.75255I$	$-11.6607 - 13.0030I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.877439 - 0.744862I$ $a = -1.00846 + 1.16462I$ $b = 0.61392 + 1.31441I$	$6.00992 - 2.17262I$	$-0.64965 + 3.24807I$
$u = 0.877439 - 0.744862I$ $a = 1.41750 - 0.65162I$ $b = 1.18010 - 1.17042I$	$0.95519 + 5.07591I$	$-12.1261 - 8.0430I$
$u = 0.877439 - 0.744862I$ $a = 1.64426 - 0.10506I$ $b = 1.06724 - 1.18010I$	$1.51685 + 8.04441I$	$-8.9263 - 11.9922I$
$u = 0.877439 - 0.744862I$ $a = -1.83928 + 0.42886I$ $b = -1.18627 + 0.97353I$	$6.00992 + 7.82886I$	$-0.64965 - 9.20696I$
$u = -0.754878$ $a = -0.533542 + 0.548275I$ $b = -0.21703 + 1.70176I$	$-3.18239 + 2.24779I$	$-18.6553 - 5.0636I$
$u = -0.754878$ $a = -0.533542 - 0.548275I$ $b = -0.21703 - 1.70176I$	$-3.18239 - 2.24779I$	$-18.6553 + 5.0636I$
$u = -0.754878$ $a = -0.279438 + 0.521422I$ $b = -0.747235 - 1.047170I$	$-2.62073 + 5.21629I$	$-15.4555 - 9.0128I$
$u = -0.754878$ $a = -0.279438 - 0.521422I$ $b = -0.747235 + 1.047170I$	$-2.62073 - 5.21629I$	$-15.4555 + 9.0128I$
$u = -0.754878$ $a = -0.275349 + 0.202814I$ $b = 0.183994 - 1.275850I$	$-3.56129 - 2.70441I$	$-18.4871 - 0.0833I$
$u = -0.754878$ $a = -0.275349 - 0.202814I$ $b = 0.183994 + 1.275850I$	$-3.56129 + 2.70441I$	$-18.4871 + 0.0833I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.754878$ $a=-0.98988+1.38720I$ $b=-0.210941-0.393610I$	$-2.62073-5.21629I$	$-15.4555+9.0128I$
$u=-0.754878$ $a=-0.98988-1.38720I$ $b=-0.210941+0.393610I$	$-2.62073+5.21629I$	$-15.4555-9.0128I$
$u=-0.754878$ $a=\ \ 0.24374+1.69014I$ $b=-0.207855-0.153100I$	$-3.56129+2.70441I$	$-18.4871+0.0833I$
$u=-0.754878$ $a=\ \ 0.24374-1.69014I$ $b=-0.207855+0.153100I$	$-3.56129-2.70441I$	$-18.4871-0.0833I$
$u=-0.754878$ $a=\ \ 1.33232+1.38795I$ $b=\ \ 1.53989+0.03375I$	$1.87234-5.00074I$	$-7.17892+6.22751I$
$u=-0.754878$ $a=\ \ 1.33232-1.38795I$ $b=\ \ 1.53989-0.03375I$	$1.87234+5.00074I$	$-7.17892-6.22751I$
$u=-0.754878$ $a=\ \ 2.03992+0.04471I$ $b=\ \ 1.00574+1.04773I$	$1.87234-5.00074I$	$-7.17892+6.22751I$
$u=-0.754878$ $a=\ \ 2.03992-0.04471I$ $b=\ \ 1.00574-1.04773I$	$1.87234+5.00074I$	$-7.17892-6.22751I$
$u=-0.754878$ $a=-0.28750+2.25436I$ $b=-0.402759+0.413881I$	$-3.18239+2.24779I$	$-18.6553-5.0636I$
$u=-0.754878$ $a=-0.28750-2.25436I$ $b=-0.402759-0.413881I$	$-3.18239-2.24779I$	$-18.6553+5.0636I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.754878$ $a=\ \ 2.95304+0.44701I$ $b=\ \ 3.18424+0.20464I$	$-0.99816+5.92443I$	0
$u=-0.754878$ $a=\ \ 2.95304-0.44701I$ $b=\ \ 3.18424-0.20464I$	$-0.99816-5.92443I$	0
$u=-0.754878$ $a=-3.15422$ $b=-3.35926$	-5.13715	0
$u=-0.754878$ $a=\ \ 4.21822+0.27109I$ $b=\ \ 2.22919+0.33744I$	$-0.99816+5.92443I$	0
$u=-0.754878$ $a=\ \ 4.21822-0.27109I$ $b=\ \ 2.22919-0.33744I$	$-0.99816-5.92443I$	0
$u=-0.754878$ $a=-4.45007$ $b=-2.38105$	-5.13715	0

III.

$\boldsymbol{I_3^u = \langle -1.73\times 10^6 u^{33} - 1.05\times 10^6 u^{32} + \cdots + 5.97\times 10^4 b + 2.24\times 10^6,\ -2.24\times 10^6 u^{33} - 1.73\times 10^6 u^{32} + \cdots + 5.97\times 10^4 a + 4.00\times 10^6,\ u^{34} - 13u^{32} + \cdots - 4u^2 + 1\rangle}$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 37.4765u^{33} + 28.9842u^{32} + \cdots - 72.4005u - 67.0332 \\ 28.9842u^{33} + 17.6264u^{32} + \cdots - 67.0332u - 37.4765 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 26.1187u^{33} + 23.6640u^{32} + \cdots - 42.8439u - 58.5409 \\ 24.4307u^{33} + 15.0188u^{32} + \cdots - 55.6753u - 32.1563 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 10.4182u^{33} - 5.53038u^{32} + \cdots - 32.7393u + 13.5756 \\ -5.53038u^{33} + 2.99749u^{32} + \cdots + 14.5756u - 10.4182 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 29.5853u^{33} - 19.1478u^{32} + \cdots - 80.7177u + 59.8427 \\ -12.3570u^{33} + 6.32862u^{32} + \cdots + 34.3663u - 16.4659 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 41.9423u^{33} - 25.4764u^{32} + \cdots - 115.084u + 76.3086 \\ -12.3570u^{33} + 6.32862u^{32} + \cdots + 34.3663u - 16.4659 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -6.60429u^{33} + 10.0088u^{32} + \cdots + 16.9741u - 26.1847 \\ 6.17162u^{33} + 0.380154u^{32} + \cdots - 18.5804u - 3.40451 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 16.7796u^{33} + 11.6363u^{32} + \cdots - 45.8180u - 28.3939 \\ 15.6963u^{33} + 8.48193u^{32} + \cdots - 36.5974u - 21.8641 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{663479}{59731}u^{33} + \frac{1468982}{59731}u^{32} + \cdots + \frac{3288260}{59731}u - \frac{4500469}{59731}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{34} - 11u^{33} + \cdots - 153u + 25$
c_2, c_9	$u^{34} + 8u^{32} + \cdots + 4u - 1$
c_3, c_8	$u^{34} + u^{33} + \cdots + 4u - 1$
c_4	$u^{34} + 11u^{33} + \cdots + 153u + 25$
c_5	$u^{34} - 13u^{32} + \cdots - 4u^2 + 1$
c_6	$u^{34} - 22u^{33} + \cdots - 11u + 1$
c_7, c_{12}	$u^{34} + u^{33} + \cdots + 7u - 1$
c_{10}, c_{11}	$u^{34} - 13u^{32} + \cdots - 4u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{34} + 19y^{33} + \cdots + 9841y + 625$
c_2, c_9	$y^{34} + 16y^{33} + \cdots + 6y + 1$
c_3, c_8	$y^{34} - 3y^{33} + \cdots + 4y + 1$
c_5, c_{10}, c_{11}	$y^{34} - 26y^{33} + \cdots - 8y + 1$
c_6	$y^{34} - 18y^{33} + \cdots - 13y + 1$
c_7, c_{12}	$y^{34} - 17y^{33} + \cdots - 23y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.845244 + 0.604160I$ $a = 1.91410 + 0.14388I$ $b = 1.53095 + 1.27804I$	$3.25368 - 6.85148I$	$-4.85043 + 7.91334I$
$u = 0.845244 - 0.604160I$ $a = 1.91410 - 0.14388I$ $b = 1.53095 - 1.27804I$	$3.25368 + 6.85148I$	$-4.85043 - 7.91334I$
$u = -0.895619 + 0.699368I$ $a = -0.590494 + 0.168532I$ $b = 0.410992 - 0.563913I$	$4.00733 - 2.65022I$	$-2.94134 + 1.85323I$
$u = -0.895619 - 0.699368I$ $a = -0.590494 - 0.168532I$ $b = 0.410992 + 0.563913I$	$4.00733 + 2.65022I$	$-2.94134 - 1.85323I$
$u = -0.853323 + 0.773155I$ $a = 0.589236 - 0.220815I$ $b = -0.332084 + 0.643997I$	$-0.36168 + 2.92655I$	$-4.69868 - 5.16619I$
$u = -0.853323 - 0.773155I$ $a = 0.589236 + 0.220815I$ $b = -0.332084 - 0.643997I$	$-0.36168 - 2.92655I$	$-4.69868 + 5.16619I$
$u = -0.898698 + 0.721304I$ $a = -0.471500 + 0.227103I$ $b = 0.259926 - 0.544192I$	$3.97518 + 8.07880I$	$-4.76528 - 6.64300I$
$u = -0.898698 - 0.721304I$ $a = -0.471500 - 0.227103I$ $b = 0.259926 + 0.544192I$	$3.97518 - 8.07880I$	$-4.76528 + 6.64300I$
$u = 0.857194 + 0.802437I$ $a = -1.350540 - 0.116108I$ $b = -1.06450 - 1.18325I$	$1.52615 - 6.51453I$	$-5.61054 + 6.02417I$
$u = 0.857194 - 0.802437I$ $a = -1.350540 + 0.116108I$ $b = -1.06450 + 1.18325I$	$1.52615 + 6.51453I$	$-5.61054 - 6.02417I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.187710+0.191526I$ $a=-0.041458-0.375482I$ $b=\ \ 0.121155+0.438023I$	$-4.19227+6.40599I$	$-15.5049-8.8278I$
$u=-1.187710-0.191526I$ $a=-0.041458+0.375482I$ $b=\ \ 0.121155-0.438023I$	$-4.19227-6.40599I$	$-15.5049+8.8278I$
$u=\ \ 1.027460+0.661768I$ $a=-0.303568-0.915936I$ $b=\ \ 0.294234-1.141980I$	$2.64248+1.96167I$	$-1.53326-1.99100I$
$u=\ \ 1.027460-0.661768I$ $a=-0.303568+0.915936I$ $b=\ \ 0.294234+1.141980I$	$2.64248-1.96167I$	$-1.53326+1.99100I$
$u=\ \ 1.22760$ $a=-1.93511$ $b=-2.37554$	-6.94043	-24.4110
$u=\ \ 0.905250+0.844336I$ $a=\ \ 0.550716+0.724589I$ $b=-0.113261+1.120920I$	$1.39644+0.41153I$	$-2.71773-1.79950I$
$u=\ \ 0.905250-0.844336I$ $a=\ \ 0.550716-0.724589I$ $b=-0.113261-1.120920I$	$1.39644-0.41153I$	$-2.71773+1.79950I$
$u=\ \ 1.232980+0.132443I$ $a=\ \ 1.43939-0.87127I$ $b=\ \ 1.89014-0.88362I$	$-2.81974-6.65969I$	$-13.9389+9.7504I$
$u=\ \ 1.232980-0.132443I$ $a=\ \ 1.43939+0.87127I$ $b=\ \ 1.89014+0.88362I$	$-2.81974+6.65969I$	$-13.9389-9.7504I$
$u=-1.249730+0.109070I$ $a=\ \ 0.268415-0.308268I$ $b=-0.301823+0.414527I$	$-5.53822-1.91820I$	$-16.6362+1.6027I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.249730-0.109070I$ $a=\ \ 0.268415+0.308268I$ $b=-0.301823-0.414527I$	$-5.53822+1.91820I$	$-16.6362-1.6027I$
$u=\ \ 0.665736$ $a=-4.03140$ $b=-2.68384$	-4.67762	-5.42070
$u=-0.648923+0.147922I$ $a=\ \ 0.761243-0.982468I$ $b=-0.348659+0.750150I$	$-2.03261-4.84635I$	$-3.32627+1.12061I$
$u=-0.648923-0.147922I$ $a=\ \ 0.761243+0.982468I$ $b=-0.348659-0.750150I$	$-2.03261+4.84635I$	$-3.32627-1.12061I$
$u=\ \ 0.659269+0.077443I$ $a=\ \ 4.04500-0.28467I$ $b=\ \ 2.68879+0.12558I$	$-0.48875+5.72099I$	$-1.66381-3.21415I$
$u=\ \ 0.659269-0.077443I$ $a=\ \ 4.04500+0.28467I$ $b=\ \ 2.68879-0.12558I$	$-0.48875-5.72099I$	$-1.66381+3.21415I$
$u=-0.595318+0.097089I$ $a=-0.052986-1.365210I$ $b=\ \ 0.164091+0.807592I$	$-2.91383+2.92551I$	$-4.46735-4.14484I$
$u=-0.595318-0.097089I$ $a=-0.052986+1.365210I$ $b=\ \ 0.164091-0.807592I$	$-2.91383-2.92551I$	$-4.46735+4.14484I$
$u=\ \ 1.42516+0.21887I$ $a=-0.74184-2.07454I$ $b=-0.60318-3.11893I$	$-6.84248-4.69187I$	$-65.0121+0.I$
$u=\ \ 1.42516-0.21887I$ $a=-0.74184+2.07454I$ $b=-0.60318+3.11893I$	$-6.84248+4.69187I$	$-65.0121+0.I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.62951+0.02230I$ $a=\ \ 0.0272909+0.0596106I$ $b=-0.0458005-0.0965277I$	$-8.58478+1.54555I$	0
$u=-1.62951-0.02230I$ $a=\ \ 0.0272909-0.0596106I$ $b=-0.0458005+0.0965277I$	$-8.58478-1.54555I$	0
$u=\ \ 0.059608+0.333902I$ $a=\ \ 2.94025+0.58858I$ $b=-0.021265+1.016840I$	$-1.89189+2.22619I$	$-11.47365-4.34728I$
$u=\ \ 0.059608-0.333902I$ $a=\ \ 2.94025-0.58858I$ $b=-0.021265-1.016840I$	$-1.89189-2.22619I$	$-11.47365+4.34728I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^{11}+3u^{10}+\cdots+2u+1)^6)(u^{34}-11u^{33}+\cdots-153u+25)$ $\cdot(u^{48}-12u^{47}+\cdots-352u+64)$
c_2, c_9	$(u^{34}+8u^{32}+\cdots+4u-1)(u^{48}-13u^{46}+\cdots+4u-1)$ $\cdot(u^{66}-3u^{65}+\cdots+7772u-1789)$
c_3, c_8	$(u^{34}+u^{33}+\cdots+4u-1)(u^{48}+u^{47}+\cdots+20u-13)$ $\cdot(u^{66}-u^{65}+\cdots+17622u-13807)$
c_4	$((u^{11}+3u^{10}+\cdots+2u+1)^6)(u^{34}+11u^{33}+\cdots+153u+25)$ $\cdot(u^{48}-12u^{47}+\cdots-352u+64)$
c_5	$((u^3+u^2-1)^{22})(u^{34}-13u^{32}+\cdots-4u^2+1)$ $\cdot(u^{48}-23u^{47}+\cdots+16384u-2048)$
c_6	$(u^{11}+5u^{10}+12u^9+15u^8+8u^7-4u^6-8u^5-3u^4+3u^3+3u^2-1)^6$ $\cdot(u^{34}-22u^{33}+\cdots-11u+1)(u^{48}-19u^{47}+\cdots-56u+8)$
c_7, c_{12}	$(u^{34}+u^{33}+\cdots+7u-1)(u^{48}-u^{47}+\cdots+11u-1)$ $\cdot(u^{66}+u^{65}+\cdots+509278u-214703)$
c_{10}, c_{11}	$((u^3+u^2-1)^{22})(u^{34}-13u^{32}+\cdots-4u^2+1)$ $\cdot(u^{48}-23u^{47}+\cdots+16384u-2048)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y^{11}+7y^{10}+\cdots-6y-1)^6)(y^{34}+19y^{33}+\cdots+9841y+625)$ $\cdot(y^{48}+26y^{47}+\cdots-110080y+4096)$
c_2, c_9	$(y^{34}+16y^{33}+\cdots+6y+1)(y^{48}-26y^{47}+\cdots+10y+1)$ $\cdot(y^{66}+15y^{65}+\cdots-174341816y+3200521)$
c_3, c_8	$(y^{34}-3y^{33}+\cdots+4y+1)(y^{48}+7y^{47}+\cdots+2616y+169)$ $\cdot(y^{66}+3y^{65}+\cdots-190413984y+190633249)$
c_5, c_{10}, c_{11}	$((y^3-y^2+2y-1)^{22})(y^{34}-26y^{33}+\cdots-8y+1)$ $\cdot(y^{48}-27y^{47}+\cdots-14680064y+4194304)$
c_6	$((y^{11}-y^{10}+\cdots+6y-1)^6)(y^{34}-18y^{33}+\cdots-13y+1)$ $\cdot(y^{48}-19y^{47}+\cdots+1056y+64)$
c_7, c_{12}	$(y^{34}-17y^{33}+\cdots-23y+1)(y^{48}+33y^{47}+\cdots-59y+1)$ $\cdot(y^{66}-9y^{65}+\cdots-545194749936y+46097378209)$