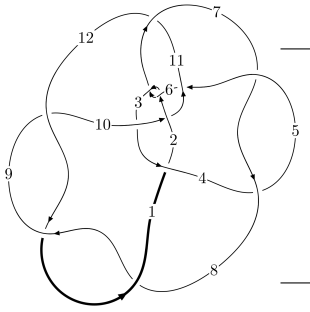
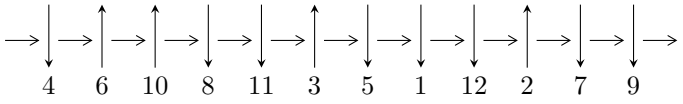
$12a_{0950}$ $(K12a_{0950})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 3.22224 \times 10^{411} u^{131} + 1.29708 \times 10^{411} u^{130} + \cdots + 4.45032 \times 10^{412} b + 8.97585 \times 10^{412}, \\ & 3.48045 \times 10^{415} u^{131} - 1.50529 \times 10^{416} u^{130} + \cdots + 2.38982 \times 10^{415} a + 3.14627 \times 10^{416}, \\ & u^{132} - 4u^{131} + \cdots + 59u + 3 \rangle \\ I_2^u = \langle & 305214u^{33} - 1443972u^{32} + \cdots + 1901663b + 378921, \\ & 762076u^{33} - 6622618u^{32} + \cdots + 1901663a + 2163731,\ u^{34} - 9u^{33} + \cdots - 2u + 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 166 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. $\boldsymbol{I_1^u = \langle 3.22 \times 10^{411} u^{131} + 1.30 \times 10^{411} u^{130} + \cdots + 4.45 \times 10^{412} b + 8.98 \times 10^{412},\ 3.48 \times 10^{415} u^{131} - 1.51 \times 10^{416} u^{130} + \cdots + 2.39 \times 10^{415} a + 3.15 \times 10^{416},\ u^{132} - 4u^{131} + \cdots + 59u + 3 \rangle}$

(i) Arc colorings

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

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

$$a_5 = \begin{pmatrix} -1.45636u^{131} + 6.29873u^{130} + \cdots - 186.709u - 13.1653 \\ -0.0724047u^{131} - 0.0291458u^{130} + \cdots - 38.1921u - 2.01690 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -1.52877u^{131} + 6.26959u^{130} + \cdots - 224.901u - 15.1822 \\ -0.0724047u^{131} - 0.0291458u^{130} + \cdots - 38.1921u - 2.01690 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 2.37691u^{131} - 9.29606u^{130} + \cdots + 880.320u + 56.1784 \\ 0.0809590u^{131} - 0.820963u^{130} + \cdots - 1.44871u + 0.631557 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.915943u^{131} + 3.04478u^{130} + \cdots - 224.443u - 14.1366 \\ 0.705423u^{131} - 2.12174u^{130} + \cdots + 5.02828u + 0.267268 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -1.66495u^{131} + 7.41381u^{130} + \cdots - 222.553u - 15.4836 \\ -0.0541848u^{131} - 0.286281u^{130} + \cdots - 44.0633u - 2.32385 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -1.19945u^{131} + 5.10715u^{130} + \cdots - 725.676u - 44.0069 \\ 0.000210381u^{131} - 0.330833u^{130} + \cdots - 29.0630u - 3.13429 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 5.31674u^{131} - 22.2442u^{130} + \cdots + 939.143u + 46.8844 \\ 0.111780u^{131} + 0.127260u^{130} + \cdots + 152.646u + 9.58358 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.631647u^{131} + 2.56905u^{130} + \cdots - 968.511u - 71.1945$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{132} - 12u^{131} + \cdots - 2438849515u + 240939553$
c_2, c_6	$u^{132} - 4u^{131} + \cdots - 530u + 259$
c_3	$u^{132} + u^{131} + \cdots + 69461u - 1783$
c_4, c_7	$u^{132} - 8u^{131} + \cdots - 2101u + 581$
c_5	$u^{132} + u^{131} + \cdots + 1631088u + 611587$
c_8, c_9, c_{12}	$u^{132} + 4u^{131} + \cdots - 59u + 3$
c_{10}	$u^{132} - 15u^{130} + \cdots + 7439u + 1091$
c_{11}	$u^{132} + u^{131} + \cdots + 7866797u + 1297931$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{132} + 60y^{131} + \cdots + 887267153635262571y + 58051868199839809$
c_2, c_6	$y^{132} - 82y^{131} + \cdots - 3272868y + 67081$
c_3	$y^{132} - 11y^{131} + \cdots - 8154857603y + 3179089$
c_4, c_7	$y^{132} + 118y^{131} + \cdots + 81012553y + 337561$
c_5	$y^{132} + 39y^{131} + \cdots + 21589787450618y + 374038658569$
c_8, c_9, c_{12}	$y^{132} + 136y^{131} + \cdots + 245y + 9$
c_{10}	$y^{132} - 30y^{131} + \cdots - 203221589y + 1190281$
c_{11}	$y^{132} + 51y^{131} + \cdots + 56520089925371y + 1684624880761$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.767053+0.620115I$ $a=\ \ 0.736005+0.407715I$ $b=-0.190482-1.331180I$	$4.08639-3.30659I$	0
$u=-0.767053-0.620115I$ $a=\ \ 0.736005-0.407715I$ $b=-0.190482+1.331180I$	$4.08639+3.30659I$	0
$u=\ \ 0.114709+1.029170I$ $a=\ \ 0.536516-0.677578I$ $b=\ \ 0.475424+1.166190I$	$6.99783-6.24714I$	0
$u=\ \ 0.114709-1.029170I$ $a=\ \ 0.536516+0.677578I$ $b=\ \ 0.475424-1.166190I$	$6.99783+6.24714I$	0
$u=-0.807298+0.525025I$ $a=-0.894899-0.633983I$ $b=-0.40014+1.42345I$	$3.81199+8.60180I$	0
$u=-0.807298-0.525025I$ $a=-0.894899+0.633983I$ $b=-0.40014-1.42345I$	$3.81199-8.60180I$	0
$u=-0.893205+0.594651I$ $a=\ \ 0.775847+0.746866I$ $b=\ \ 0.39069-1.42500I$	$7.4643+14.2993I$	0
$u=-0.893205-0.594651I$ $a=\ \ 0.775847-0.746866I$ $b=\ \ 0.39069+1.42500I$	$7.4643-14.2993I$	0
$u=\ \ 0.923755+0.556913I$ $a=-0.418791+0.832376I$ $b=-0.120619-1.302090I$	$2.71743-2.20489I$	0
$u=\ \ 0.923755-0.556913I$ $a=-0.418791-0.832376I$ $b=-0.120619+1.302090I$	$2.71743+2.20489I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.499948 + 0.985294I$ $a = -0.200595 + 0.653013I$ $b = -0.302170 - 0.383862I$	$1.54660 - 4.25235I$	0
$u = 0.499948 - 0.985294I$ $a = -0.200595 - 0.653013I$ $b = -0.302170 + 0.383862I$	$1.54660 + 4.25235I$	0
$u = 0.979892 + 0.525077I$ $a = 0.623155 - 0.398725I$ $b = 0.084096 + 1.172410I$	$2.15340 - 2.11704I$	0
$u = 0.979892 - 0.525077I$ $a = 0.623155 + 0.398725I$ $b = 0.084096 - 1.172410I$	$2.15340 + 2.11704I$	0
$u = 0.819959 + 0.296432I$ $a = 0.818801 + 0.182317I$ $b = 0.027202 + 1.177160I$	$2.37328 - 1.93366I$	0
$u = 0.819959 - 0.296432I$ $a = 0.818801 - 0.182317I$ $b = 0.027202 - 1.177160I$	$2.37328 + 1.93366I$	0
$u = -0.813878 + 0.310335I$ $a = -0.458140 - 0.080231I$ $b = 0.161876 + 1.393950I$	$7.85556 + 0.90527I$	0
$u = -0.813878 - 0.310335I$ $a = -0.458140 + 0.080231I$ $b = 0.161876 - 1.393950I$	$7.85556 - 0.90527I$	0
$u = 0.316942 + 0.805933I$ $a = 0.272424 + 1.279480I$ $b = -0.195749 - 0.795398I$	$1.46726 - 1.82664I$	0
$u = 0.316942 - 0.805933I$ $a = 0.272424 - 1.279480I$ $b = -0.195749 + 0.795398I$	$1.46726 + 1.82664I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.616809+0.597964I$ $a=\ 1.21895+0.79785I$ $b=\ 0.38316-1.39154I$	$8.85004+3.62228I$	0
$u=-0.616809-0.597964I$ $a=\ 1.21895-0.79785I$ $b=\ 0.38316+1.39154I$	$8.85004-3.62228I$	0
$u=-0.942236+0.662943I$ $a=-0.588488-0.511150I$ $b=\ 0.207282+1.345090I$	$7.55939-8.22426I$	0
$u=-0.942236-0.662943I$ $a=-0.588488+0.511150I$ $b=\ 0.207282-1.345090I$	$7.55939+8.22426I$	0
$u=\ 0.031223+0.839282I$ $a=\ 0.750922-1.145570I$ $b=-0.265590+0.187892I$	$-0.216709-1.247950I$	0
$u=\ 0.031223-0.839282I$ $a=\ 0.750922+1.145570I$ $b=-0.265590-0.187892I$	$-0.216709+1.247950I$	0
$u=\ 0.504286+1.065090I$ $a=\ 0.070744-1.396820I$ $b=\ 0.052137+0.853579I$	$2.68256-3.49929I$	0
$u=\ 0.504286-1.065090I$ $a=\ 0.070744+1.396820I$ $b=\ 0.052137-0.853579I$	$2.68256+3.49929I$	0
$u=\ 0.696281+0.431174I$ $a=\ 0.339990-0.113857I$ $b=\ 0.413409+0.047062I$	$-0.60011-2.20926I$	0
$u=\ 0.696281-0.431174I$ $a=\ 0.339990+0.113857I$ $b=\ 0.413409-0.047062I$	$-0.60011+2.20926I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.919366 + 0.754060I$ $a = 0.638803 - 1.054440I$ $b = 0.098187 + 1.275980I$	$3.31816 - 4.14785I$	0
$u = 0.919366 - 0.754060I$ $a = 0.638803 + 1.054440I$ $b = 0.098187 - 1.275980I$	$3.31816 + 4.14785I$	0
$u = 0.289926 + 1.164690I$ $a = 0.725260 - 0.707252I$ $b = 0.367811 + 1.161470I$	$6.96025 - 6.23487I$	0
$u = 0.289926 - 1.164690I$ $a = 0.725260 + 0.707252I$ $b = 0.367811 - 1.161470I$	$6.96025 + 6.23487I$	0
$u = -0.431488 + 0.653862I$ $a = -0.50887 + 1.33602I$ $b = 0.444064 + 0.080062I$	$2.95782 - 5.69512I$	0
$u = -0.431488 - 0.653862I$ $a = -0.50887 - 1.33602I$ $b = 0.444064 - 0.080062I$	$2.95782 + 5.69512I$	0
$u = -0.083243 + 1.230380I$ $a = 0.479669 - 0.431619I$ $b = -0.455547 - 0.763476I$	$2.81507 - 0.60865I$	0
$u = -0.083243 - 1.230380I$ $a = 0.479669 + 0.431619I$ $b = -0.455547 + 0.763476I$	$2.81507 + 0.60865I$	0
$u = 0.381803 + 0.664483I$ $a = -2.06953 + 1.64664I$ $b = 0.032513 - 1.278260I$	$6.92478 - 4.41301I$	0
$u = 0.381803 - 0.664483I$ $a = -2.06953 - 1.64664I$ $b = 0.032513 + 1.278260I$	$6.92478 + 4.41301I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.553514 + 0.518230I$ $a = -0.489696 + 0.584603I$ $b = -0.250986 - 1.384720I$	$3.26652 - 2.51546I$	0
$u = 0.553514 - 0.518230I$ $a = -0.489696 - 0.584603I$ $b = -0.250986 + 1.384720I$	$3.26652 + 2.51546I$	0
$u = 0.986647 + 0.790916I$ $a = -0.476862 + 0.636183I$ $b = -0.175316 - 1.165180I$	$2.91018 - 4.54846I$	0
$u = 0.986647 - 0.790916I$ $a = -0.476862 - 0.636183I$ $b = -0.175316 + 1.165180I$	$2.91018 + 4.54846I$	0
$u = -0.606905 + 0.403437I$ $a = 0.546328 - 0.083019I$ $b = 0.988181 - 0.235108I$	$2.19288 + 9.43541I$	0
$u = -0.606905 - 0.403437I$ $a = 0.546328 + 0.083019I$ $b = 0.988181 + 0.235108I$	$2.19288 - 9.43541I$	0
$u = 0.563761 + 0.423889I$ $a = -0.229371 - 0.862700I$ $b = -0.612479 + 0.363883I$	$0.61224 - 1.56921I$	0
$u = 0.563761 - 0.423889I$ $a = -0.229371 + 0.862700I$ $b = -0.612479 - 0.363883I$	$0.61224 + 1.56921I$	0
$u = 0.704423$ $a = -0.123732$ $b = -0.517903$	-1.19742	0
$u = -0.192255 + 1.334470I$ $a = -0.773697 + 0.750231I$ $b = 0.307385 + 0.384534I$	$6.77695 + 6.18958I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.192255-1.334470I$ $a=-0.773697-0.750231I$ $b=\ 0.307385-0.384534I$	$6.77695-6.18958I$	0
$u=\ 0.016225+1.364930I$ $a=\ 0.414013+0.458130I$ $b=\ 0.680119-0.431337I$	$5.04727-2.24596I$	0
$u=\ 0.016225-1.364930I$ $a=\ 0.414013-0.458130I$ $b=\ 0.680119+0.431337I$	$5.04727+2.24596I$	0
$u=\ 0.089681+1.372730I$ $a=\ 0.341213+0.455127I$ $b=-0.918176-0.511825I$	$3.10244-2.09594I$	0
$u=\ 0.089681-1.372730I$ $a=\ 0.341213-0.455127I$ $b=-0.918176+0.511825I$	$3.10244+2.09594I$	0
$u=\ 0.592474+0.174546I$ $a=\ 0.543867+1.128330I$ $b=\ 0.402756-0.457035I$	$0.152820-0.389619I$	$-4.00000-2.43878I$
$u=\ 0.592474-0.174546I$ $a=\ 0.543867-1.128330I$ $b=\ 0.402756+0.457035I$	$0.152820+0.389619I$	$-4.00000+2.43878I$
$u=-0.105077+1.405480I$ $a=-0.55139-1.42451I$ $b=-0.766764+0.978278I$	$4.43357+3.99471I$	0
$u=-0.105077-1.405480I$ $a=-0.55139+1.42451I$ $b=-0.766764-0.978278I$	$4.43357-3.99471I$	0
$u=-0.102146+1.408590I$ $a=\ 0.80774+1.89483I$ $b=\ 0.24261-1.46987I$	$10.91370+0.95614I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.102146-1.408590I$ $a=\ 0.80774-1.89483I$ $b=\ 0.24261+1.46987I$	$10.91370-0.95614I$	0
$u=\ 0.232214+0.537737I$ $a=\ 0.58070+1.70480I$ $b=-0.142325-0.812802I$	$1.40465-1.74138I$	$0.+4.28223I$
$u=\ 0.232214-0.537737I$ $a=\ 0.58070-1.70480I$ $b=-0.142325+0.812802I$	$1.40465+1.74138I$	$0.-4.28223I$
$u=-0.491845+0.309179I$ $a=-0.832695+0.027029I$ $b=-1.024750+0.253442I$	$-1.46863+3.62459I$	$-5.39704-10.50305I$
$u=-0.491845-0.309179I$ $a=-0.832695-0.027029I$ $b=-1.024750-0.253442I$	$-1.46863-3.62459I$	$-5.39704+10.50305I$
$u=-0.201896+0.536883I$ $a=\ 0.505022+0.578194I$ $b=\ 0.951214-0.203933I$	$3.80422-1.02783I$	$3.93619-2.26152I$
$u=-0.201896-0.536883I$ $a=\ 0.505022-0.578194I$ $b=\ 0.951214+0.203933I$	$3.80422+1.02783I$	$3.93619+2.26152I$
$u=\ 0.570323$ $a=-0.0425588$ $b=-0.537302$	-1.23428	-9.88860
$u=-0.01841+1.43051I$ $a=-0.05454-2.65151I$ $b=-0.227464+1.251790I$	$4.71659+2.32241I$	0
$u=-0.01841-1.43051I$ $a=-0.05454+2.65151I$ $b=-0.227464-1.251790I$	$4.71659-2.32241I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.548096+0.138812I$ $a=\ \ 0.53031+1.46961I$ $b=\ \ 0.619681+0.342541I$	$2.19632+3.49075I$	$-4.08845-5.43017I$
$u=-0.548096-0.138812I$ $a=\ \ 0.53031-1.46961I$ $b=\ \ 0.619681-0.342541I$	$2.19632-3.49075I$	$-4.08845+5.43017I$
$u=\ \ 0.12767+1.43151I$ $a=\ \ 0.086377+0.171716I$ $b=\ \ 0.754964-0.167867I$	$5.27540-2.64634I$	0
$u=\ \ 0.12767-1.43151I$ $a=\ \ 0.086377-0.171716I$ $b=\ \ 0.754964+0.167867I$	$5.27540+2.64634I$	0
$u=-0.14128+1.44569I$ $a=\ \ 0.701685-0.837176I$ $b=-1.46294+0.48565I$	$4.24691+5.84943I$	0
$u=-0.14128-1.44569I$ $a=\ \ 0.701685+0.837176I$ $b=-1.46294-0.48565I$	$4.24691-5.84943I$	0
$u=-0.05262+1.45372I$ $a=-0.21839+3.13591I$ $b=\ \ 0.142886-1.256910I$	$9.74455+7.86908I$	0
$u=-0.05262-1.45372I$ $a=-0.21839-3.13591I$ $b=\ \ 0.142886+1.256910I$	$9.74455-7.86908I$	0
$u=\ \ 0.10173+1.45572I$ $a=-0.19231+2.40268I$ $b=-0.30741-2.00060I$	$9.37018-4.70111I$	0
$u=\ \ 0.10173-1.45572I$ $a=-0.19231-2.40268I$ $b=-0.30741+2.00060I$	$9.37018+4.70111I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.24463 + 1.45153I$ $a = -0.001700 - 0.405065I$ $b = 0.568880 + 0.311688I$	$5.42968 - 5.64561I$	0
$u = 0.24463 - 1.45153I$ $a = -0.001700 + 0.405065I$ $b = 0.568880 - 0.311688I$	$5.42968 + 5.64561I$	0
$u = -0.00920 + 1.47254I$ $a = -0.72969 - 2.01754I$ $b = -0.31042 + 1.44983I$	$12.36590 + 0.35979I$	0
$u = -0.00920 - 1.47254I$ $a = -0.72969 + 2.01754I$ $b = -0.31042 - 1.44983I$	$12.36590 - 0.35979I$	0
$u = -0.00853 + 1.47326I$ $a = -0.72056 - 2.06945I$ $b = 1.21018 + 1.92495I$	$11.34740 + 3.08197I$	0
$u = -0.00853 - 1.47326I$ $a = -0.72056 + 2.06945I$ $b = 1.21018 - 1.92495I$	$11.34740 - 3.08197I$	0
$u = 0.07012 + 1.48677I$ $a = 0.11412 + 2.02847I$ $b = 0.232659 - 1.212280I$	$7.89248 - 2.87390I$	0
$u = 0.07012 - 1.48677I$ $a = 0.11412 - 2.02847I$ $b = 0.232659 + 1.212280I$	$7.89248 + 2.87390I$	0
$u = -0.19062 + 1.48428I$ $a = -0.552082 + 0.669473I$ $b = 1.350400 - 0.403507I$	$8.3754 + 12.2876I$	0
$u = -0.19062 - 1.48428I$ $a = -0.552082 - 0.669473I$ $b = 1.350400 + 0.403507I$	$8.3754 - 12.2876I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.186009 + 0.467120I$ $a = 1.32783 - 0.67696I$ $b = 0.0050287 - 0.0876047I$	$-0.265403 - 1.341610I$	$-3.65967 + 3.10597I$
$u = 0.186009 - 0.467120I$ $a = 1.32783 + 0.67696I$ $b = 0.0050287 + 0.0876047I$	$-0.265403 + 1.341610I$	$-3.65967 - 3.10597I$
$u = -0.04164 + 1.49773I$ $a = -0.880711 + 0.319163I$ $b = 1.52049 - 0.10487I$	$10.43450 - 0.23468I$	0
$u = -0.04164 - 1.49773I$ $a = -0.880711 - 0.319163I$ $b = 1.52049 + 0.10487I$	$10.43450 + 0.23468I$	0
$u = 0.17934 + 1.50397I$ $a = 0.233739 - 0.241673I$ $b = -0.984405 + 0.137584I$	$7.00133 - 4.24104I$	0
$u = 0.17934 - 1.50397I$ $a = 0.233739 + 0.241673I$ $b = -0.984405 - 0.137584I$	$7.00133 + 4.24104I$	0
$u = -0.36063 + 1.50117I$ $a = -0.82927 - 1.50546I$ $b = -0.01242 + 1.50608I$	$13.6673 + 5.3531I$	0
$u = -0.36063 - 1.50117I$ $a = -0.82927 + 1.50546I$ $b = -0.01242 - 1.50608I$	$13.6673 - 5.3531I$	0
$u = 0.00092 + 1.54768I$ $a = -0.481396 + 0.260915I$ $b = -0.307873 + 0.116910I$	$10.55720 - 4.74072I$	0
$u = 0.00092 - 1.54768I$ $a = -0.481396 - 0.260915I$ $b = -0.307873 - 0.116910I$	$10.55720 + 4.74072I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.20784+1.53929I$ $a=\ \ 0.63155+1.96068I$ $b=\ \ 0.55293-1.51499I$	$15.8629+6.6761I$	0
$u=-0.20784-1.53929I$ $a=\ \ 0.63155-1.96068I$ $b=\ \ 0.55293+1.51499I$	$15.8629-6.6761I$	0
$u=-0.22595+1.54696I$ $a=\ \ 0.69960+1.66153I$ $b=\ \ 0.10956-1.43613I$	$11.28640+0.22955I$	0
$u=-0.22595-1.54696I$ $a=\ \ 0.69960-1.66153I$ $b=\ \ 0.10956+1.43613I$	$11.28640-0.22955I$	0
$u=-0.28183+1.53972I$ $a=-0.65744-1.92899I$ $b=-0.51979+1.57067I$	$10.5488+12.5900I$	0
$u=-0.28183-1.53972I$ $a=-0.65744+1.92899I$ $b=-0.51979-1.57067I$	$10.5488-12.5900I$	0
$u=\ \ 0.16231+1.56424I$ $a=-1.16265+2.01455I$ $b=-0.174237-1.294890I$	$14.3717-6.6418I$	0
$u=\ \ 0.16231-1.56424I$ $a=-1.16265-2.01455I$ $b=-0.174237+1.294890I$	$14.3717+6.6418I$	0
$u=\ \ 0.26368+1.55732I$ $a=-0.48539+1.95702I$ $b=-0.28998-1.51084I$	$9.66602-6.31548I$	0
$u=\ \ 0.26368-1.55732I$ $a=-0.48539-1.95702I$ $b=-0.28998+1.51084I$	$9.66602+6.31548I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.29843 + 1.56031I$ $a = 0.71529 - 1.55202I$ $b = 0.329209 + 1.303690I$	$8.99190 - 6.60501I$	0
$u = 0.29843 - 1.56031I$ $a = 0.71529 + 1.55202I$ $b = 0.329209 - 1.303690I$	$8.99190 + 6.60501I$	0
$u = -0.386963 + 0.118962I$ $a = -2.23237 + 0.92578I$ $b = -0.583890 + 0.829789I$	$-0.55650 + 2.32377I$	$-0.01882 + 11.18698I$
$u = -0.386963 - 0.118962I$ $a = -2.23237 - 0.92578I$ $b = -0.583890 - 0.829789I$	$-0.55650 - 2.32377I$	$-0.01882 - 11.18698I$
$u = -0.30623 + 1.57703I$ $a = 0.63624 + 1.90404I$ $b = 0.49782 - 1.55969I$	$14.5508 + 18.7054I$	0
$u = -0.30623 - 1.57703I$ $a = 0.63624 - 1.90404I$ $b = 0.49782 + 1.55969I$	$14.5508 - 18.7054I$	0
$u = 0.11250 + 1.61662I$ $a = 0.09295 - 1.86645I$ $b = 0.57510 + 1.58988I$	$15.6825 - 7.7666I$	0
$u = 0.11250 - 1.61662I$ $a = 0.09295 + 1.86645I$ $b = 0.57510 - 1.58988I$	$15.6825 + 7.7666I$	0
$u = 0.29395 + 1.61697I$ $a = 0.63330 - 1.98755I$ $b = 0.22752 + 1.43353I$	$11.08330 - 8.61975I$	0
$u = 0.29395 - 1.61697I$ $a = 0.63330 + 1.98755I$ $b = 0.22752 - 1.43353I$	$11.08330 + 8.61975I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.31174 + 1.64885I$ $a = -0.42041 + 1.54957I$ $b = -0.434435 - 1.338950I$	$10.9348 - 9.3916I$	0
$u = 0.31174 - 1.64885I$ $a = -0.42041 - 1.54957I$ $b = -0.434435 + 1.338950I$	$10.9348 + 9.3916I$	0
$u = -0.24884 + 1.67932I$ $a = -0.57948 - 1.55722I$ $b = -0.054465 + 1.374040I$	$15.5378 - 3.6209I$	0
$u = -0.24884 - 1.67932I$ $a = -0.57948 + 1.55722I$ $b = -0.054465 - 1.374040I$	$15.5378 + 3.6209I$	0
$u = 0.017152 + 0.267137I$ $a = 1.42500 - 0.21002I$ $b = 0.71097 + 1.59075I$	$5.41899 + 3.02204I$	$26.4083 - 7.2543I$
$u = 0.017152 - 0.267137I$ $a = 1.42500 + 0.21002I$ $b = 0.71097 - 1.59075I$	$5.41899 - 3.02204I$	$26.4083 + 7.2543I$
$u = -0.187080 + 0.171343I$ $a = 3.90682 + 6.74708I$ $b = 0.315054 - 1.059950I$	$4.18324 + 7.06497I$	$-4.9353 - 13.3627I$
$u = -0.187080 - 0.171343I$ $a = 3.90682 - 6.74708I$ $b = 0.315054 + 1.059950I$	$4.18324 - 7.06497I$	$-4.9353 + 13.3627I$
$u = -0.105051 + 0.169865I$ $a = -5.95216 + 1.76071I$ $b = -0.032772 + 1.384890I$	$6.60606 + 0.07457I$	$6.17196 - 0.00036I$
$u = -0.105051 - 0.169865I$ $a = -5.95216 - 1.76071I$ $b = -0.032772 - 1.384890I$	$6.60606 - 0.07457I$	$6.17196 + 0.00036I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.144003+0.086048I$		
$a=-6.06740-2.80089I$	$-0.46372+1.91901I$	$-10.09563-2.04109I$
$b=-0.382267+0.843689I$		
$u=-0.144003-0.086048I$		
$a=-6.06740+2.80089I$	$-0.46372-1.91901I$	$-10.09563+2.04109I$
$b=-0.382267-0.843689I$		

II. $\boldsymbol{I_2^u = \langle 3.05\times 10^5 u^{33} - 1.44\times 10^6 u^{32} + \cdots + 1.90\times 10^6 b + 3.79\times 10^5,\ 7.62\times 10^5 u^{33} - 6.62\times 10^6 u^{32} + \cdots + 1.90\times 10^6 a + 2.16\times 10^6,\ u^{34} - 9u^{33} + \cdots - 2u + 1\rangle}$

(i) Arc colorings

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

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

$$a_5 = \begin{pmatrix} -0.400742u^{33} + 3.48254u^{32} + \cdots - 5.11113u - 1.13781 \\ -0.160498u^{33} + 0.759321u^{32} + \cdots - 2.32854u - 0.199258 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -0.561240u^{33} + 4.24186u^{32} + \cdots - 7.43968u - 1.33707 \\ -0.160498u^{33} + 0.759321u^{32} + \cdots - 2.32854u - 0.199258 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -3.32693u^{33} + 27.5062u^{32} + \cdots + 0.777783u + 2.32051 \\ -1.13312u^{33} + 9.76085u^{32} + \cdots + 2.79768u + 1.07604 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.942913u^{33} + 7.79035u^{32} + \cdots - 9.69606u + 3.87372 \\ -0.133122u^{33} + 0.760847u^{32} + \cdots - 1.20232u + 1.07604 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.738461u^{33} + 5.76783u^{32} + \cdots - 4.35320u - 1.12093 \\ -0.431446u^{33} + 2.88867u^{32} + \cdots - 2.03326u - 0.360127 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.640376u^{33} - 5.83407u^{32} + \cdots - 8.40078u - 1.85927 \\ -0.227060u^{33} + 1.13974u^{32} + \cdots - 3.92970u - 0.161240 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.242654u^{33} + 2.39147u^{32} + \cdots + 4.32101u - 0.326219 \\ 0.403463u^{33} - 3.33671u^{32} + \cdots + 3.30267u + 0.0954428 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{22022342}{1901663}u^{33} - \frac{178060136}{1901663}u^{32} + \cdots + \frac{49198590}{1901663}u - \frac{41800341}{1901663}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{34}+u^{33}+\cdots-8u+1$
c_2	$u^{34}+3u^{33}+\cdots+25u+13$
c_3	$u^{34}+4u^{32}+\cdots+4u^2+1$
c_4	$u^{34}-u^{33}+\cdots-10u+1$
c_5	$u^{34}-u^{32}+\cdots-u+1$
c_6	$u^{34}-3u^{33}+\cdots-25u+13$
c_7	$u^{34}+u^{33}+\cdots+10u+1$
c_8, c_9	$u^{34}-9u^{33}+\cdots-2u+1$
c_{10}	$u^{34}-u^{33}+\cdots-2u+1$
c_{11}	$u^{34}+11u^{32}+\cdots-3u^2+1$
c_{12}	$u^{34}+9u^{33}+\cdots+2u+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{34} - y^{33} + \cdots + 14y + 1$
c_2, c_6	$y^{34} - 19y^{33} + \cdots - 1509y + 169$
c_3	$y^{34} + 8y^{33} + \cdots + 8y + 1$
c_4, c_7	$y^{34} + 33y^{33} + \cdots + 12y + 1$
c_5	$y^{34} - 2y^{33} + \cdots + 17y + 1$
c_8, c_9, c_{12}	$y^{34} + 35y^{33} + \cdots - 16y + 1$
c_{10}	$y^{34} + 9y^{33} + \cdots + 14y + 1$
c_{11}	$y^{34} + 22y^{33} + \cdots - 6y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.393248 + 0.932647I$ $a = 0.553041 - 0.615049I$ $b = -0.296477 + 0.958022I$	$0.912438 + 0.054357I$	$-1.56322 + 0.I$
$u = 0.393248 - 0.932647I$ $a = 0.553041 + 0.615049I$ $b = -0.296477 - 0.958022I$	$0.912438 - 0.054357I$	$-1.56322 + 0.I$
$u = 0.171458 + 0.857075I$ $a = -0.05249 + 1.77388I$ $b = -0.301294 - 0.839403I$	$0.52913 - 2.51358I$	$-3.16580 + 5.50977I$
$u = 0.171458 - 0.857075I$ $a = -0.05249 - 1.77388I$ $b = -0.301294 + 0.839403I$	$0.52913 + 2.51358I$	$-3.16580 - 5.50977I$
$u = 0.556009 + 0.993627I$ $a = -0.052494 + 0.843090I$ $b = 0.105695 - 0.632014I$	$1.68923 - 3.29309I$	0
$u = 0.556009 - 0.993627I$ $a = -0.052494 - 0.843090I$ $b = 0.105695 + 0.632014I$	$1.68923 + 3.29309I$	0
$u = 1.017460 + 0.593007I$ $a = -0.513378 + 0.702674I$ $b = -0.111503 - 1.287200I$	$3.23494 - 2.67669I$	0
$u = 1.017460 - 0.593007I$ $a = -0.513378 - 0.702674I$ $b = -0.111503 + 1.287200I$	$3.23494 + 2.67669I$	0
$u = 0.683355 + 0.314379I$ $a = -0.205906 - 0.792604I$ $b = -0.263759 + 0.336216I$	$-0.104901 - 1.145120I$	$-9.26091 + 3.81564I$
$u = 0.683355 - 0.314379I$ $a = -0.205906 + 0.792604I$ $b = -0.263759 - 0.336216I$	$-0.104901 + 1.145120I$	$-9.26091 - 3.81564I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.062587 + 1.255560I$ $a = 0.736961 + 0.815983I$ $b = -0.313363 + 0.601866I$	$2.54629 + 1.11779I$	0
$u = 0.062587 - 1.255560I$ $a = 0.736961 - 0.815983I$ $b = -0.313363 - 0.601866I$	$2.54629 - 1.11779I$	0
$u = -0.103803 + 1.269610I$ $a = 0.091479 - 0.492285I$ $b = 0.342666 - 0.881890I$	$7.38764 + 7.68614I$	0
$u = -0.103803 - 1.269610I$ $a = 0.091479 + 0.492285I$ $b = 0.342666 + 0.881890I$	$7.38764 - 7.68614I$	0
$u = 0.907728 + 0.894170I$ $a = 0.576668 - 0.910054I$ $b = 0.059342 + 1.244490I$	$4.07316 - 3.95850I$	0
$u = 0.907728 - 0.894170I$ $a = 0.576668 + 0.910054I$ $b = 0.059342 - 1.244490I$	$4.07316 + 3.95850I$	0
$u = -0.07380 + 1.42312I$ $a = -0.58644 - 2.48510I$ $b = 0.22289 + 1.82694I$	$9.95047 + 3.99555I$	0
$u = -0.07380 - 1.42312I$ $a = -0.58644 + 2.48510I$ $b = 0.22289 - 1.82694I$	$9.95047 - 3.99555I$	0
$u = 0.13044 + 1.42229I$ $a = -0.333411 + 0.974643I$ $b = -0.848563 - 0.716854I$	$4.67685 - 4.51248I$	0
$u = 0.13044 - 1.42229I$ $a = -0.333411 - 0.974643I$ $b = -0.848563 + 0.716854I$	$4.67685 + 4.51248I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.23244 + 1.42868I$ $a = -0.257939 - 0.407697I$ $b = -0.384911 + 0.109771I$	$5.50834 - 4.38762I$	0
$u = 0.23244 - 1.42868I$ $a = -0.257939 + 0.407697I$ $b = -0.384911 - 0.109771I$	$5.50834 + 4.38762I$	0
$u = -0.156037 + 0.497343I$ $a = -1.05299 - 3.52201I$ $b = 0.300827 + 1.019980I$	$4.56466 - 6.63123I$	$4.39605 + 2.97328I$
$u = -0.156037 - 0.497343I$ $a = -1.05299 + 3.52201I$ $b = 0.300827 - 1.019980I$	$4.56466 + 6.63123I$	$4.39605 - 2.97328I$
$u = -0.02170 + 1.48801I$ $a = -0.340684 + 1.352720I$ $b = 0.96803 - 1.30932I$	$10.97280 - 2.36557I$	0
$u = -0.02170 - 1.48801I$ $a = -0.340684 - 1.352720I$ $b = 0.96803 + 1.30932I$	$10.97280 + 2.36557I$	0
$u = 0.406715 + 0.188851I$ $a = -2.21933 - 0.71871I$ $b = -0.535038 - 0.716735I$	$-0.60111 - 2.59202I$	$-6.0922 + 17.4141I$
$u = 0.406715 - 0.188851I$ $a = -2.21933 + 0.71871I$ $b = -0.535038 + 0.716735I$	$-0.60111 + 2.59202I$	$-6.0922 - 17.4141I$
$u = 0.15498 + 1.60609I$ $a = 0.54093 - 1.99408I$ $b = 0.324827 + 1.311190I$	$12.8882 - 7.3388I$	0
$u = 0.15498 - 1.60609I$ $a = 0.54093 + 1.99408I$ $b = 0.324827 - 1.311190I$	$12.8882 + 7.3388I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.31663 + 1.59702I$ $a = -0.60657 + 1.75681I$ $b = -0.26680 - 1.42897I$	$10.45830 - 7.48895I$	0
$u = \quad 0.31663 - 1.59702I$ $a = -0.60657 - 1.75681I$ $b = -0.26680 + 1.42897I$	$10.45830 + 7.48895I$	0
$u = -0.177706 + 0.100222I$ $a = -0.77745 - 2.17682I$ $b = \quad 0.49742 - 1.50770I$	$5.20508 - 3.01673I$	$-11.65326 + 5.65710I$
$u = -0.177706 - 0.100222I$ $a = -0.77745 + 2.17682I$ $b = \quad 0.49742 + 1.50770I$	$5.20508 + 3.01673I$	$-11.65326 - 5.65710I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{34}+u^{33}+\cdots-8u+1)$ $\cdot(u^{132}-12u^{131}+\cdots-2438849515u+240939553)$
c_2	$(u^{34}+3u^{33}+\cdots+25u+13)(u^{132}-4u^{131}+\cdots-530u+259)$
c_3	$(u^{34}+4u^{32}+\cdots+4u^2+1)(u^{132}+u^{131}+\cdots+69461u-1783)$
c_4	$(u^{34}-u^{33}+\cdots-10u+1)(u^{132}-8u^{131}+\cdots-2101u+581)$
c_5	$(u^{34}-u^{32}+\cdots-u+1)(u^{132}+u^{131}+\cdots+1631088u+611587)$
c_6	$(u^{34}-3u^{33}+\cdots-25u+13)(u^{132}-4u^{131}+\cdots-530u+259)$
c_7	$(u^{34}+u^{33}+\cdots+10u+1)(u^{132}-8u^{131}+\cdots-2101u+581)$
c_8, c_9	$(u^{34}-9u^{33}+\cdots-2u+1)(u^{132}+4u^{131}+\cdots-59u+3)$
c_{10}	$(u^{34}-u^{33}+\cdots-2u+1)(u^{132}-15u^{130}+\cdots+7439u+1091)$
c_{11}	$(u^{34}+11u^{32}+\cdots-3u^2+1)(u^{132}+u^{131}+\cdots+7866797u+1297931)$
c_{12}	$(u^{34}+9u^{33}+\cdots+2u+1)(u^{132}+4u^{131}+\cdots-59u+3)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{34} - y^{33} + \cdots + 14y + 1)$ $\cdot (y^{132} + 60y^{131} + \cdots + 887267153635262571y + 58051868199839809)$
c_2, c_6	$(y^{34} - 19y^{33} + \cdots - 1509y + 169)$ $\cdot (y^{132} - 82y^{131} + \cdots - 3272868y + 67081)$
c_3	$(y^{34} + 8y^{33} + \cdots + 8y + 1)$ $\cdot (y^{132} - 11y^{131} + \cdots - 8154857603y + 3179089)$
c_4, c_7	$(y^{34} + 33y^{33} + \cdots + 12y + 1)$ $\cdot (y^{132} + 118y^{131} + \cdots + 81012553y + 337561)$
c_5	$(y^{34} - 2y^{33} + \cdots + 17y + 1)$ $\cdot (y^{132} + 39y^{131} + \cdots + 21589787450618y + 374038658569)$
c_8, c_9, c_{12}	$(y^{34} + 35y^{33} + \cdots - 16y + 1)(y^{132} + 136y^{131} + \cdots + 245y + 9)$
c_{10}	$(y^{34} + 9y^{33} + \cdots + 14y + 1)$ $\cdot (y^{132} - 30y^{131} + \cdots - 203221589y + 1190281)$
c_{11}	$(y^{34} + 22y^{33} + \cdots - 6y + 1)$ $\cdot (y^{132} + 51y^{131} + \cdots + 56520089925371y + 1684624880761)$