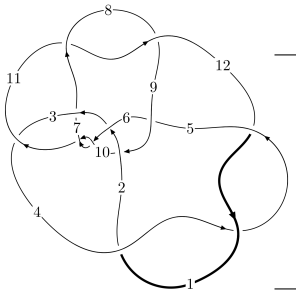
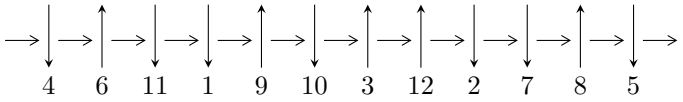
$12a_{0993}$ $(K12a_{0993})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 1.10594 \times 10^{879} u^{125} + 1.36630 \times 10^{879} u^{124} + \cdots + 1.54517 \times 10^{880} b - 3.26555 \times 10^{880},$$
$$- 8.92339 \times 10^{880} u^{125} - 8.84509 \times 10^{880} u^{124} + \cdots + 1.69969 \times 10^{881} a - 7.52252 \times 10^{882},$$
$$u^{126} + u^{125} + \cdots - 132u + 11 \rangle$$
$$I_2^u = \langle -9.30719 \times 10^{30} u^{29} - 5.87135 \times 10^{30} u^{28} + \cdots + 1.66371 \times 10^{31} b + 2.43132 \times 10^{31},$$
$$- 6.80425 \times 10^{30} u^{29} - 4.64175 \times 10^{28} u^{28} + \cdots + 1.66371 \times 10^{31} a - 1.17316 \times 10^{31},\ u^{30} + 3u^{28} + \cdots - 2u -$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 156 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. $\boldsymbol{I_1^u = \langle 1.11 \times 10^{879} u^{125} + 1.37 \times 10^{879} u^{124} + \cdots + 1.55 \times 10^{880} b - 3.27 \times 10^{880},\ -8.92 \times 10^{880} u^{125} - 8.85 \times 10^{880} u^{124} + \cdots + 1.70 \times 10^{881} a - 7.52 \times 10^{882},\ u^{126} + u^{125} + \cdots - 132u + 11 \rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.525002u^{125} + 0.520395u^{124} + \cdots - 374.540u + 44.2583 \\ -0.0715738u^{125} - 0.0884238u^{124} + \cdots - 0.736350u + 2.11339 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.596576u^{125} + 0.608819u^{124} + \cdots - 373.804u + 42.1449 \\ -0.0715738u^{125} - 0.0884238u^{124} + \cdots - 0.736350u + 2.11339 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1.58980u^{125} + 1.63087u^{124} + \cdots - 654.607u - 8.00754 \\ 0.0966687u^{125} + 0.0928713u^{124} + \cdots - 91.2100u + 3.34168 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.583221u^{125} + 0.593184u^{124} + \cdots - 379.487u + 44.1236 \\ -0.0729892u^{125} - 0.0918397u^{124} + \cdots - 0.582326u + 2.08831 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.259868u^{125} - 0.170339u^{124} + \cdots + 375.077u - 51.5973 \\ 0.0439211u^{125} + 0.0367812u^{124} + \cdots - 27.1830u - 0.487529 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1.54565u^{125} + 1.31340u^{124} + \cdots - 1183.86u + 3.71872 \\ 0.0592009u^{125} + 0.0546213u^{124} + \cdots - 46.3274u - 1.23676 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.581766u^{125} + 0.450854u^{124} + \cdots - 139.927u - 31.3043 \\ -0.132150u^{125} - 0.220674u^{124} + \cdots - 81.3185u + 4.14573 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.180228u^{125} + 0.0908883u^{124} + \cdots + 625.815u - 72.6402 \\ 0.0188578u^{125} + 0.0128273u^{124} + \cdots - 16.0604u - 1.06033 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.228010u^{125} - 0.696063u^{124} + \cdots - 619.877u + 37.7195 \\ 0.0341963u^{125} - 0.0132225u^{124} + \cdots - 75.4933u + 3.53262 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.0314101u^{125} + 0.232150u^{124} + \cdots + 485.494u - 43.2059$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_{12}	$u^{126} + 6u^{125} + \cdots - 46u + 1$
c_2	$u^{126} + 6u^{124} + \cdots + 153u - 1$
c_3	$u^{126} + 4u^{124} + \cdots + 13u - 1$
c_5	$u^{126} - 7u^{125} + \cdots + 594874511u - 184550927$
c_6, c_{10}	$u^{126} + u^{125} + \cdots - 53u - 1$
c_7	$u^{126} + u^{125} + \cdots - 132u + 11$
c_8, c_{11}	$u^{126} - 3u^{125} + \cdots + 64815u - 21157$
c_9	$u^{126} - 3u^{125} + \cdots - 15150u - 875$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_{12}	$y^{126} + 128y^{125} + \cdots - 658y + 1$
c_2	$y^{126} + 12y^{125} + \cdots - 25937y + 1$
c_3	$y^{126} + 8y^{125} + \cdots - 539y + 1$
c_5	$y^{126} - 61y^{125} + \cdots - 817860618458859723y + 34059044656559329$
c_6, c_{10}	$y^{126} - 89y^{125} + \cdots - 285y + 1$
c_7	$y^{126} - y^{125} + \cdots - 28336y + 121$
c_8, c_{11}	$y^{126} - 107y^{125} + \cdots + 8032458629y + 447618649$
c_9	$y^{126} - 13y^{125} + \cdots - 211112500y + 765625$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.968012 + 0.206740I$ $a = -0.841309 + 0.618895I$ $b = 0.382176 - 0.612476I$	$3.86360 - 1.13254I$	0
$u = 0.968012 - 0.206740I$ $a = -0.841309 - 0.618895I$ $b = 0.382176 + 0.612476I$	$3.86360 + 1.13254I$	0
$u = 0.722580 + 0.707302I$ $a = 0.321355 - 0.392167I$ $b = 0.246993 - 0.037301I$	$0.90720 + 2.23366I$	0
$u = 0.722580 - 0.707302I$ $a = 0.321355 + 0.392167I$ $b = 0.246993 + 0.037301I$	$0.90720 - 2.23366I$	0
$u = -0.701722 + 0.731285I$ $a = 1.183870 - 0.557138I$ $b = 1.42066 + 0.47320I$	$-4.51319 - 2.95889I$	0
$u = -0.701722 - 0.731285I$ $a = 1.183870 + 0.557138I$ $b = 1.42066 - 0.47320I$	$-4.51319 + 2.95889I$	0
$u = -0.917887 + 0.351540I$ $a = 0.468009 - 0.083088I$ $b = -0.450872 + 0.696654I$	$7.04474 - 1.32151I$	0
$u = -0.917887 - 0.351540I$ $a = 0.468009 + 0.083088I$ $b = -0.450872 - 0.696654I$	$7.04474 + 1.32151I$	0
$u = -0.954461 + 0.202606I$ $a = -0.784825 - 1.021690I$ $b = 0.705378 + 0.641418I$	$10.01000 + 3.91751I$	0
$u = -0.954461 - 0.202606I$ $a = -0.784825 + 1.021690I$ $b = 0.705378 - 0.641418I$	$10.01000 - 3.91751I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.849912 + 0.583986I$ $a = -0.373182 - 1.071840I$ $b = -1.163970 + 0.238978I$	$0.47499 + 5.28536I$	0
$u = 0.849912 - 0.583986I$ $a = -0.373182 + 1.071840I$ $b = -1.163970 - 0.238978I$	$0.47499 - 5.28536I$	0
$u = -0.737965 + 0.626114I$ $a = 0.510029 - 0.263258I$ $b = -0.157910 + 1.032840I$	$6.41264 - 2.33812I$	0
$u = -0.737965 - 0.626114I$ $a = 0.510029 + 0.263258I$ $b = -0.157910 - 1.032840I$	$6.41264 + 2.33812I$	0
$u = -0.129149 + 0.954019I$ $a = 1.237170 + 0.019775I$ $b = 1.30144 + 0.76450I$	$3.05595 - 3.53054I$	0
$u = -0.129149 - 0.954019I$ $a = 1.237170 - 0.019775I$ $b = 1.30144 - 0.76450I$	$3.05595 + 3.53054I$	0
$u = -0.269534 + 0.918113I$ $a = 1.052230 - 0.391170I$ $b = 0.573678 + 0.616502I$	$4.73137 - 2.68223I$	0
$u = -0.269534 - 0.918113I$ $a = 1.052230 + 0.391170I$ $b = 0.573678 - 0.616502I$	$4.73137 + 2.68223I$	0
$u = -0.037847 + 1.063370I$ $a = -1.076550 + 0.583214I$ $b = 0.0644537 + 0.1137520I$	$9.63649 - 7.24665I$	0
$u = -0.037847 - 1.063370I$ $a = -1.076550 - 0.583214I$ $b = 0.0644537 - 0.1137520I$	$9.63649 + 7.24665I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.779491 + 0.757708I$ $a = 1.02597 + 2.06833I$ $b = 1.154720 - 0.147525I$	$6.63909 + 8.20125I$	0
$u = 0.779491 - 0.757708I$ $a = 1.02597 - 2.06833I$ $b = 1.154720 + 0.147525I$	$6.63909 - 8.20125I$	0
$u = 0.174729 + 0.889388I$ $a = 1.44002 - 0.73130I$ $b = 0.440431 + 0.046106I$	$4.69795 - 2.86828I$	0
$u = 0.174729 - 0.889388I$ $a = 1.44002 + 0.73130I$ $b = 0.440431 - 0.046106I$	$4.69795 + 2.86828I$	0
$u = 0.026878 + 0.904424I$ $a = -2.23187 - 0.74246I$ $b = -1.161310 - 0.131568I$	$-2.91584 - 3.59853I$	0
$u = 0.026878 - 0.904424I$ $a = -2.23187 + 0.74246I$ $b = -1.161310 + 0.131568I$	$-2.91584 + 3.59853I$	0
$u = 0.738162 + 0.516805I$ $a = 1.112750 + 0.775174I$ $b = 1.43589 - 0.61909I$	$-0.64593 + 6.02874I$	0
$u = 0.738162 - 0.516805I$ $a = 1.112750 - 0.775174I$ $b = 1.43589 + 0.61909I$	$-0.64593 - 6.02874I$	0
$u = -1.036500 + 0.425597I$ $a = -0.643009 - 0.175995I$ $b = -0.174290 + 0.707571I$	$4.76622 - 2.24293I$	0
$u = -1.036500 - 0.425597I$ $a = -0.643009 + 0.175995I$ $b = -0.174290 - 0.707571I$	$4.76622 + 2.24293I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.399858+1.062710I$ $a=\ \ 2.54526-1.21520I$ $b=\ \ 1.150700+0.055423I$	$-0.70367-3.42936I$	0
$u=-0.399858-1.062710I$ $a=\ \ 2.54526+1.21520I$ $b=\ \ 1.150700-0.055423I$	$-0.70367+3.42936I$	0
$u=-0.501362+0.698749I$ $a=-1.10159+1.68091I$ $b=-1.160730-0.040659I$	$-4.55735-1.27291I$	0
$u=-0.501362-0.698749I$ $a=-1.10159-1.68091I$ $b=-1.160730+0.040659I$	$-4.55735+1.27291I$	0
$u=\ \ 0.767040+0.378405I$ $a=-1.367770+0.112888I$ $b=-1.59069-0.13500I$	$7.20930-3.74478I$	0
$u=\ \ 0.767040-0.378405I$ $a=-1.367770-0.112888I$ $b=-1.59069+0.13500I$	$7.20930+3.74478I$	0
$u=\ \ 0.662164+0.494308I$ $a=\ \ 0.334236+0.339193I$ $b=-0.150099-0.914798I$	$1.19579+1.85580I$	0
$u=\ \ 0.662164-0.494308I$ $a=\ \ 0.334236-0.339193I$ $b=-0.150099+0.914798I$	$1.19579-1.85580I$	0
$u=\ \ 0.751275+0.914799I$ $a=\ \ 1.110060+0.454273I$ $b=\ \ 1.45340-0.27676I$	$-0.695593+0.430873I$	0
$u=\ \ 0.751275-0.914799I$ $a=\ \ 1.110060-0.454273I$ $b=\ \ 1.45340+0.27676I$	$-0.695593-0.430873I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.539342 + 0.609694I$ $a = -2.44519 - 1.07402I$ $b = -1.046790 + 0.382026I$	$5.19982 + 5.44798I$	$0. - 8.13519I$
$u = 0.539342 - 0.609694I$ $a = -2.44519 + 1.07402I$ $b = -1.046790 - 0.382026I$	$5.19982 - 5.44798I$	$0. + 8.13519I$
$u = 0.727479 + 0.334456I$ $a = 0.336265 - 0.041580I$ $b = -0.036714 - 0.666665I$	$1.04572 + 1.34644I$	0
$u = 0.727479 - 0.334456I$ $a = 0.336265 + 0.041580I$ $b = -0.036714 + 0.666665I$	$1.04572 - 1.34644I$	0
$u = 0.136225 + 0.776984I$ $a = 1.46727 - 0.01362I$ $b = 1.31564 - 0.63453I$	$-2.11477 + 2.94281I$	$-23.2919 - 10.5595I$
$u = 0.136225 - 0.776984I$ $a = 1.46727 + 0.01362I$ $b = 1.31564 + 0.63453I$	$-2.11477 - 2.94281I$	$-23.2919 + 10.5595I$
$u = -0.788165$ $a = -1.55663$ $b = -1.39953$	2.48354	5.67410
$u = 0.090736 + 1.219680I$ $a = -0.686362 - 0.249825I$ $b = 0.0687145 - 0.0314972I$	$2.19489 + 3.04393I$	0
$u = 0.090736 - 1.219680I$ $a = -0.686362 + 0.249825I$ $b = 0.0687145 + 0.0314972I$	$2.19489 - 3.04393I$	0
$u = 1.026350 + 0.680770I$ $a = -0.0526145 + 0.0042219I$ $b = -0.078455 + 1.177730I$	$12.1495 + 12.5348I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.026350 - 0.680770I$ $a = -0.0526145 - 0.0042219I$ $b = -0.078455 - 1.177730I$	$12.1495 - 12.5348I$	0
$u = -1.073650 + 0.642604I$ $a = -0.0280392 + 0.0269565I$ $b = -0.136979 - 1.044980I$	$5.48825 - 8.57859I$	0
$u = -1.073650 - 0.642604I$ $a = -0.0280392 - 0.0269565I$ $b = -0.136979 + 1.044980I$	$5.48825 + 8.57859I$	0
$u = 0.428583 + 1.180290I$ $a = 1.189860 + 0.294886I$ $b = 1.009070 - 0.273860I$	$-1.42765 + 1.64320I$	0
$u = 0.428583 - 1.180290I$ $a = 1.189860 - 0.294886I$ $b = 1.009070 + 0.273860I$	$-1.42765 - 1.64320I$	0
$u = -0.693722 + 0.261825I$ $a = -0.264784 - 0.486947I$ $b = -0.211354 + 1.166350I$	$4.43559 - 0.75434I$	$7.78662 - 2.19445I$
$u = -0.693722 - 0.261825I$ $a = -0.264784 + 0.486947I$ $b = -0.211354 - 1.166350I$	$4.43559 + 0.75434I$	$7.78662 + 2.19445I$
$u = 1.070930 + 0.704608I$ $a = -0.618275 - 0.024661I$ $b = -0.509253 - 0.785700I$	$11.83960 + 4.23093I$	0
$u = 1.070930 - 0.704608I$ $a = -0.618275 + 0.024661I$ $b = -0.509253 + 0.785700I$	$11.83960 - 4.23093I$	0
$u = 0.511429 + 0.500117I$ $a = -0.217174 - 0.188538I$ $b = 0.026842 - 1.328720I$	$5.71723 + 5.77036I$	$2.36112 - 11.11424I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.511429 - 0.500117I$ $a = -0.217174 + 0.188538I$ $b = 0.026842 + 1.328720I$	$5.71723 - 5.77036I$	$2.36112 + 11.11424I$
$u = -0.749688 + 1.044300I$ $a = -1.55802 + 0.39336I$ $b = -1.326070 - 0.393163I$	$-3.18376 - 5.37366I$	0
$u = -0.749688 - 1.044300I$ $a = -1.55802 - 0.39336I$ $b = -1.326070 + 0.393163I$	$-3.18376 + 5.37366I$	0
$u = 1.030840 + 0.770617I$ $a = -1.11660 - 1.00027I$ $b = -1.32126 + 0.58253I$	$2.78831 + 8.21347I$	0
$u = 1.030840 - 0.770617I$ $a = -1.11660 + 1.00027I$ $b = -1.32126 - 0.58253I$	$2.78831 - 8.21347I$	0
$u = 1.30548$ $a = 0.413226$ $b = -0.995775$	3.28667	0
$u = -1.311650 + 0.039307I$ $a = 0.428074 - 0.025182I$ $b = -1.040940 + 0.127080I$	$8.28404 - 0.19696I$	0
$u = -1.311650 - 0.039307I$ $a = 0.428074 + 0.025182I$ $b = -1.040940 - 0.127080I$	$8.28404 + 0.19696I$	0
$u = -0.568653 + 0.381095I$ $a = -0.041833 + 0.196380I$ $b = 0.175657 + 1.110410I$	$0.21103 - 3.56176I$	$-2.00000 + 12.87689I$
$u = -0.568653 - 0.381095I$ $a = -0.041833 - 0.196380I$ $b = 0.175657 - 1.110410I$	$0.21103 + 3.56176I$	$-2.00000 - 12.87689I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.017290+0.849259I$ $a=-1.138810+0.819126I$ $b=-1.312060-0.520361I$	$-2.50148-7.21721I$	0
$u=-1.017290-0.849259I$ $a=-1.138810-0.819126I$ $b=-1.312060+0.520361I$	$-2.50148+7.21721I$	0
$u=1.161240+0.645349I$ $a=0.0269442-0.0391937I$ $b=-0.083701+0.838821I$	$5.69849+3.36426I$	0
$u=1.161240-0.645349I$ $a=0.0269442+0.0391937I$ $b=-0.083701-0.838821I$	$5.69849-3.36426I$	0
$u=-0.225504+0.603291I$ $a=0.926505+0.688105I$ $b=0.171819-0.041861I$	$-1.034390+0.819414I$	$-7.05388-2.21568I$
$u=-0.225504-0.603291I$ $a=0.926505-0.688105I$ $b=0.171819+0.041861I$	$-1.034390-0.819414I$	$-7.05388+2.21568I$
$u=-1.029170+0.904792I$ $a=0.970558-0.328742I$ $b=1.160940-0.071700I$	$-2.77637+0.66825I$	0
$u=-1.029170-0.904792I$ $a=0.970558+0.328742I$ $b=1.160940+0.071700I$	$-2.77637-0.66825I$	0
$u=0.305187+0.546803I$ $a=1.25848+0.71590I$ $b=1.36172+0.53318I$	$1.77844-2.71652I$	$0.434746-0.863996I$
$u=0.305187-0.546803I$ $a=1.25848-0.71590I$ $b=1.36172-0.53318I$	$1.77844+2.71652I$	$0.434746+0.863996I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.861315 + 1.089700I$ $a = -1.341780 - 0.385251I$ $b = -1.38682 + 0.49565I$	$-4.57772 + 9.15194I$	0
$u = 0.861315 - 1.089700I$ $a = -1.341780 + 0.385251I$ $b = -1.38682 - 0.49565I$	$-4.57772 - 9.15194I$	0
$u = -1.199660 + 0.737164I$ $a = 0.0783001 - 0.0072274I$ $b = 0.175996 - 0.762885I$	$12.86710 + 0.42464I$	0
$u = -1.199660 - 0.737164I$ $a = 0.0783001 + 0.0072274I$ $b = 0.175996 + 0.762885I$	$12.86710 - 0.42464I$	0
$u = -0.89430 + 1.13406I$ $a = -1.261770 + 0.364178I$ $b = -1.39930 - 0.57543I$	$1.23096 - 12.20610I$	0
$u = -0.89430 - 1.13406I$ $a = -1.261770 - 0.364178I$ $b = -1.39930 + 0.57543I$	$1.23096 + 12.20610I$	0
$u = 0.453539 + 0.307718I$ $a = 0.837401 + 0.907158I$ $b = 1.233150 + 0.594856I$	$1.78881 - 2.72875I$	$2.39765 + 0.46040I$
$u = 0.453539 - 0.307718I$ $a = 0.837401 - 0.907158I$ $b = 1.233150 - 0.594856I$	$1.78881 + 2.72875I$	$2.39765 - 0.46040I$
$u = 1.15430 + 0.88730I$ $a = -0.924165 - 0.603908I$ $b = -1.293110 + 0.434196I$	$0.75691 + 6.06319I$	0
$u = 1.15430 - 0.88730I$ $a = -0.924165 + 0.603908I$ $b = -1.293110 - 0.434196I$	$0.75691 - 6.06319I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.480589 + 0.170637I$ $a = -0.972704 + 0.672663I$ $b = -1.126390 - 0.834072I$	$2.45303 + 2.40939I$	$9.70516 - 8.98371I$
$u = 0.480589 - 0.170637I$ $a = -0.972704 - 0.672663I$ $b = -1.126390 + 0.834072I$	$2.45303 - 2.40939I$	$9.70516 + 8.98371I$
$u = 0.478856 + 0.007166I$ $a = -3.70484 - 1.81326I$ $b = -0.717751 + 0.180802I$	$9.23772 + 1.58715I$	$0.97417 - 3.87239I$
$u = 0.478856 - 0.007166I$ $a = -3.70484 + 1.81326I$ $b = -0.717751 - 0.180802I$	$9.23772 - 1.58715I$	$0.97417 + 3.87239I$
$u = -0.466435 + 0.066221I$ $a = -2.15123 - 1.42660I$ $b = -0.859954 + 0.294542I$	$2.90713 + 0.56914I$	$2.73109 - 0.87226I$
$u = -0.466435 - 0.066221I$ $a = -2.15123 + 1.42660I$ $b = -0.859954 - 0.294542I$	$2.90713 - 0.56914I$	$2.73109 + 0.87226I$
$u = -0.427326 + 0.179054I$ $a = -0.948841 - 0.387226I$ $b = -1.49741 + 1.02920I$	$8.21252 - 5.33315I$	$19.4828 + 13.2523I$
$u = -0.427326 - 0.179054I$ $a = -0.948841 + 0.387226I$ $b = -1.49741 - 1.02920I$	$8.21252 + 5.33315I$	$19.4828 - 13.2523I$
$u = -1.25961 + 1.08912I$ $a = 1.263630 - 0.518184I$ $b = 1.39968 + 0.54420I$	$7.5384 - 18.5486I$	0
$u = -1.25961 - 1.08912I$ $a = 1.263630 + 0.518184I$ $b = 1.39968 - 0.54420I$	$7.5384 + 18.5486I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.13918 + 1.26493I$ $a = 1.43226 + 0.45253I$ $b = 1.175520 - 0.398048I$	$9.79810 + 3.83465I$	0
$u = 1.13918 - 1.26493I$ $a = 1.43226 - 0.45253I$ $b = 1.175520 + 0.398048I$	$9.79810 - 3.83465I$	0
$u = 0.254512 + 0.147816I$ $a = -1.96888 - 7.45158I$ $b = 0.882430 + 0.329821I$	$9.53051 - 7.93705I$	$6.98604 + 6.82257I$
$u = 0.254512 - 0.147816I$ $a = -1.96888 + 7.45158I$ $b = 0.882430 - 0.329821I$	$9.53051 + 7.93705I$	$6.98604 - 6.82257I$
$u = 1.29164 + 1.11912I$ $a = 1.281340 + 0.476994I$ $b = 1.38748 - 0.48196I$	$0.73747 + 13.98510I$	0
$u = 1.29164 - 1.11912I$ $a = 1.281340 - 0.476994I$ $b = 1.38748 + 0.48196I$	$0.73747 - 13.98510I$	0
$u = -1.29864 + 1.20884I$ $a = 1.333510 - 0.438800I$ $b = 1.330460 + 0.411568I$	$1.29402 - 7.90745I$	0
$u = -1.29864 - 1.20884I$ $a = 1.333510 + 0.438800I$ $b = 1.330460 - 0.411568I$	$1.29402 + 7.90745I$	0
$u = -0.193279 + 0.005870I$ $a = 5.89648 + 8.48690I$ $b = 1.090150 - 0.280523I$	$1.73678 + 4.67643I$	$0.44528 - 8.40035I$
$u = -0.193279 - 0.005870I$ $a = 5.89648 - 8.48690I$ $b = 1.090150 + 0.280523I$	$1.73678 - 4.67643I$	$0.44528 + 8.40035I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.52049+0.98628I$ $a=\ 0.640257-0.378084I$ $b=\ 1.100000-0.152001I$	$2.65701+4.12493I$	0
$u=-1.52049-0.98628I$ $a=\ 0.640257+0.378084I$ $b=\ 1.100000+0.152001I$	$2.65701-4.12493I$	0
$u=-1.07511+1.47313I$ $a=\ 1.291260-0.469674I$ $b=\ 1.120550+0.097386I$	$-1.48943-3.08194I$	0
$u=-1.07511-1.47313I$ $a=\ 1.291260+0.469674I$ $b=\ 1.120550-0.097386I$	$-1.48943+3.08194I$	0
$u=\ 0.0850834$ $a=\ 19.3001$ $b=\ 1.28315$	-0.636876	-8.64910
$u=-1.24844+1.45738I$ $a=-1.077590+0.267882I$ $b=-0.995158-0.410825I$	$10.31510-8.71832I$	0
$u=-1.24844-1.45738I$ $a=-1.077590-0.267882I$ $b=-0.995158+0.410825I$	$10.31510+8.71832I$	0
$u=\ 1.51783+1.25957I$ $a=\ 0.877847+0.397005I$ $b=\ 1.095860+0.037564I$	$-3.16810-1.11130I$	0
$u=\ 1.51783-1.25957I$ $a=\ 0.877847-0.397005I$ $b=\ 1.095860-0.037564I$	$-3.16810+1.11130I$	0
$u=\ 1.78363+0.99935I$ $a=-0.876459-0.225685I$ $b=-1.184950+0.253744I$	$1.56171+5.79220I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 1.78363 - 0.99935I$ $a = -0.876459 + 0.225685I$ $b = -1.184950 - 0.253744I$	$1.56171 - 5.79220I$	0
$u = -1.02132 + 1.97994I$ $a = -1.060770 + 0.244146I$ $b = -1.173330 + 0.192346I$	$6.19269 + 8.97681I$	0
$u = -1.02132 - 1.97994I$ $a = -1.060770 - 0.244146I$ $b = -1.173330 - 0.192346I$	$6.19269 - 8.97681I$	0
$u = -2.29921$ $a = -0.800696$ $b = -1.25229$	-1.63615	0
$u = \quad 0.42467 + 2.60166I$ $a = -1.178370 - 0.095871I$ $b = -1.181760 - 0.066562I$	$-1.27831 - 3.65117I$	0
$u = \quad 0.42467 - 2.60166I$ $a = -1.178370 + 0.095871I$ $b = -1.181760 + 0.066562I$	$-1.27831 + 3.65117I$	0

II.

$\boldsymbol{I_2^u = \langle -9.31\times10^{30}u^{29}-5.87\times10^{30}u^{28}+\cdots+1.66\times10^{31}b+2.43\times10^{31},\ -6.80\times10^{30}u^{29}-4.64\times10^{28}u^{28}+\cdots+1.66\times10^{31}a-1.17\times10^{31},\ u^{30}+3u^{28}+\cdots-2u-1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.408982u^{29} + 0.00279001u^{28} + \cdots - 0.865665u + 0.705148 \\ 0.559425u^{29} + 0.352908u^{28} + \cdots - 1.91710u - 1.46139 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.150444u^{29} - 0.350118u^{28} + \cdots + 1.05144u + 2.16653 \\ 0.559425u^{29} + 0.352908u^{28} + \cdots - 1.91710u - 1.46139 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.631698u^{29} - 0.337157u^{28} + \cdots - 2.37587u - 0.170958 \\ -0.261323u^{29} + 0.359967u^{28} + \cdots + 1.65254u + 0.0611976 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.505655u^{29} + 0.0189483u^{28} + \cdots - 1.71634u + 0.355030 \\ 0.684292u^{29} + 0.410499u^{28} + \cdots - 3.31133u - 1.83045 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.656099u^{29} - 0.369066u^{28} + \cdots + 2.76778u + 1.81150 \\ -0.717296u^{29} - 0.107743u^{28} + \cdots + 8.12094u + 0.281359 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.111785u^{29} - 0.373640u^{28} + \cdots - 0.171511u + 0.0516526 \\ -1.13073u^{29} - 0.345447u^{28} + \cdots + 7.46215u + 1.54600 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.133636u^{29} + 0.0259108u^{28} + \cdots - 0.402225u - 1.87296 \\ -1.44013u^{29} - 0.443388u^{28} + \cdots + 6.27926u + 2.84079 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.224307u^{29} - 0.406637u^{28} + \cdots + 2.53311u + 1.88703 \\ 0.0163111u^{29} - 0.141271u^{28} + \cdots + 7.83141u + 0.131821 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.441579u^{29} + 0.0141534u^{28} + \cdots + 5.75176u + 0.914539 \\ 1.50701u^{29} - 0.701106u^{28} + \cdots - 1.41216u + 2.39433 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2.93750u^{29} + 0.566665u^{28} + \cdots - 11.7656u - 9.96625$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{12}	$u^{30} - 7u^{29} + \cdots + 2u - 1$
c_2	$u^{30} - u^{29} + \cdots + u - 1$
c_3	$u^{30} + u^{29} + \cdots + u - 1$
c_4	$u^{30} + 7u^{29} + \cdots - 2u - 1$
c_5	$u^{30} - u^{28} + \cdots + 9u + 1$
c_6	$u^{30} - 11u^{28} + \cdots - 7u + 1$
c_7	$u^{30} + 3u^{28} + \cdots - 2u - 1$
c_8	$u^{30} - 2u^{29} + \cdots + 7u + 1$
c_9	$u^{30} - 3u^{28} + \cdots - 6u + 1$
c_{10}	$u^{30} - 11u^{28} + \cdots + 7u + 1$
c_{11}	$u^{30} + 2u^{29} + \cdots - 7u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_{12}	$y^{30} + 31y^{29} + \cdots - 2y + 1$
c_2	$y^{30} + 15y^{29} + \cdots - 5y + 1$
c_3	$y^{30} + 7y^{29} + \cdots + 17y + 1$
c_5	$y^{30} - 2y^{29} + \cdots - 43y + 1$
c_6, c_{10}	$y^{30} - 22y^{29} + \cdots - 41y + 1$
c_7	$y^{30} + 6y^{29} + \cdots + 12y + 1$
c_8, c_{11}	$y^{30} - 24y^{29} + \cdots - 47y + 1$
c_9	$y^{30} - 6y^{29} + \cdots - 12y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.968871+0.153914I$ $a=-1.28150-0.79735I$ $b=\ \ 0.306889+0.008170I$	$9.97629+0.92279I$	$7.61000+0.86362I$
$u=-0.968871-0.153914I$ $a=-1.28150+0.79735I$ $b=\ \ 0.306889-0.008170I$	$9.97629-0.92279I$	$7.61000-0.86362I$
$u=\ \ 1.05413$ $a=-1.17543$ $b=\ \ 0.287645$	4.77241	8.79810
$u=-0.328973+0.834656I$ $a=\ \ 1.77870-0.31219I$ $b=\ \ 0.824589-0.435332I$	$4.67665+3.91583I$	$2.00351-5.87097I$
$u=-0.328973-0.834656I$ $a=\ \ 1.77870+0.31219I$ $b=\ \ 0.824589+0.435332I$	$4.67665-3.91583I$	$2.00351+5.87097I$
$u=\ \ 0.474952+0.740919I$ $a=\ \ 0.277967+0.157244I$ $b=-0.387661-0.457787I$	$1.68322+2.33964I$	$2.02886-3.38961I$
$u=\ \ 0.474952-0.740919I$ $a=\ \ 0.277967-0.157244I$ $b=-0.387661+0.457787I$	$1.68322-2.33964I$	$2.02886+3.38961I$
$u=-0.136327+0.836331I$ $a=\ \ 1.54318+0.00256I$ $b=\ \ 1.241290+0.535726I$	$-1.86751-2.87974I$	$7.67084+2.45201I$
$u=-0.136327-0.836331I$ $a=\ \ 1.54318-0.00256I$ $b=\ \ 1.241290-0.535726I$	$-1.86751+2.87974I$	$7.67084-2.45201I$
$u=\ \ 0.484813+0.640144I$ $a=\ \ 0.304608+0.180546I$ $b=-0.428906-0.575982I$	$1.68534+2.33725I$	$1.33131-5.36163I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.484813 - 0.640144I$ $a = 0.304608 - 0.180546I$ $b = -0.428906 + 0.575982I$	$1.68534 - 2.33725I$	$1.33131 + 5.36163I$
$u = -0.714419 + 0.312231I$ $a = 0.307777 - 0.312774I$ $b = -0.112584 + 1.259850I$	$4.08799 - 1.22951I$	$-0.89391 + 7.81913I$
$u = -0.714419 - 0.312231I$ $a = 0.307777 + 0.312774I$ $b = -0.112584 - 1.259850I$	$4.08799 + 1.22951I$	$-0.89391 - 7.81913I$
$u = 0.399686 + 1.168790I$ $a = -2.19609 - 0.76424I$ $b = -0.999520 + 0.218042I$	$8.33666 + 8.14846I$	$0.58023 - 6.81048I$
$u = 0.399686 - 1.168790I$ $a = -2.19609 + 0.76424I$ $b = -0.999520 - 0.218042I$	$8.33666 - 8.14846I$	$0.58023 + 6.81048I$
$u = 1.037940 + 0.729124I$ $a = -1.022700 - 0.746779I$ $b = -1.37988 + 0.60755I$	$0.09429 + 7.78871I$	$-0.51342 - 8.15637I$
$u = 1.037940 - 0.729124I$ $a = -1.022700 + 0.746779I$ $b = -1.37988 - 0.60755I$	$0.09429 - 7.78871I$	$-0.51342 + 8.15637I$
$u = -0.992045 + 0.991807I$ $a = -1.32009 + 0.72519I$ $b = -1.279010 - 0.434858I$	$-1.66843 - 6.66967I$	$0. + 4.76070I$
$u = -0.992045 - 0.991807I$ $a = -1.32009 - 0.72519I$ $b = -1.279010 + 0.434858I$	$-1.66843 + 6.66967I$	$0. - 4.76070I$
$u = 1.373940 + 0.316557I$ $a = 0.551323 + 0.186727I$ $b = 1.134530 - 0.287846I$	$0.29426 + 4.04989I$	$-2.92859 - 4.03192I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.373940 - 0.316557I$ $a = 0.551323 - 0.186727I$ $b = 1.134530 + 0.287846I$	$0.29426 - 4.04989I$	$-2.92859 + 4.03192I$
$u = 0.181115 + 0.514344I$ $a = 1.48060 + 0.11862I$ $b = 1.50859 - 0.85055I$	$1.47832 + 3.08446I$	$-9.9286 - 12.0594I$
$u = 0.181115 - 0.514344I$ $a = 1.48060 - 0.11862I$ $b = 1.50859 + 0.85055I$	$1.47832 - 3.08446I$	$-9.9286 + 12.0594I$
$u = -0.22873 + 1.56936I$ $a = -2.02184 + 0.20199I$ $b = -1.114750 - 0.071693I$	$-0.02684 - 3.55811I$	$2.75981 + 5.19461I$
$u = -0.22873 - 1.56936I$ $a = -2.02184 - 0.20199I$ $b = -1.114750 + 0.071693I$	$-0.02684 + 3.55811I$	$2.75981 - 5.19461I$
$u = -0.225585 + 0.343327I$ $a = 0.495340 - 0.154222I$ $b = -1.22770 + 0.78003I$	$7.92603 - 5.16630I$	$-2.96820 + 0.66188I$
$u = -0.225585 - 0.343327I$ $a = 0.495340 + 0.154222I$ $b = -1.22770 - 0.78003I$	$7.92603 + 5.16630I$	$-2.96820 - 0.66188I$
$u = -1.62107$ $a = 0.631163$ $b = 1.17688$	-3.72267	-12.4220
$u = -0.07402 + 1.68925I$ $a = 1.374850 + 0.059649I$ $b = 1.181860 + 0.116709I$	$-2.65752 - 2.44946I$	$-7.43489 + 3.46303I$
$u = -0.07402 - 1.68925I$ $a = 1.374850 - 0.059649I$ $b = 1.181860 - 0.116709I$	$-2.65752 + 2.44946I$	$-7.43489 - 3.46303I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_{12}	$(u^{30} - 7u^{29} + \cdots + 2u - 1)(u^{126} + 6u^{125} + \cdots - 46u + 1)$
c_2	$(u^{30} - u^{29} + \cdots + u - 1)(u^{126} + 6u^{124} + \cdots + 153u - 1)$
c_3	$(u^{30} + u^{29} + \cdots + u - 1)(u^{126} + 4u^{124} + \cdots + 13u - 1)$
c_4	$(u^{30} + 7u^{29} + \cdots - 2u - 1)(u^{126} + 6u^{125} + \cdots - 46u + 1)$
c_5	$(u^{30} - u^{28} + \cdots + 9u + 1)$ $\cdot (u^{126} - 7u^{125} + \cdots + 594874511u - 184550927)$
c_6	$(u^{30} - 11u^{28} + \cdots - 7u + 1)(u^{126} + u^{125} + \cdots - 53u - 1)$
c_7	$(u^{30} + 3u^{28} + \cdots - 2u - 1)(u^{126} + u^{125} + \cdots - 132u + 11)$
c_8	$(u^{30} - 2u^{29} + \cdots + 7u + 1)(u^{126} - 3u^{125} + \cdots + 64815u - 21157)$
c_9	$(u^{30} - 3u^{28} + \cdots - 6u + 1)(u^{126} - 3u^{125} + \cdots - 15150u - 875)$
c_{10}	$(u^{30} - 11u^{28} + \cdots + 7u + 1)(u^{126} + u^{125} + \cdots - 53u - 1)$
c_{11}	$(u^{30} + 2u^{29} + \cdots - 7u + 1)(u^{126} - 3u^{125} + \cdots + 64815u - 21157)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_{12}	$(y^{30}+31y^{29}+\cdots-2y+1)(y^{126}+128y^{125}+\cdots-658y+1)$
c_2	$(y^{30}+15y^{29}+\cdots-5y+1)(y^{126}+12y^{125}+\cdots-25937y+1)$
c_3	$(y^{30}+7y^{29}+\cdots+17y+1)(y^{126}+8y^{125}+\cdots-539y+1)$
c_5	$(y^{30}-2y^{29}+\cdots-43y+1)$ $\cdot(y^{126}-61y^{125}+\cdots-817860618458859723y+34059044656559329)$
c_6, c_{10}	$(y^{30}-22y^{29}+\cdots-41y+1)(y^{126}-89y^{125}+\cdots-285y+1)$
c_7	$(y^{30}+6y^{29}+\cdots+12y+1)(y^{126}-y^{125}+\cdots-28336y+121)$
c_8, c_{11}	$(y^{30}-24y^{29}+\cdots-47y+1)$ $\cdot(y^{126}-107y^{125}+\cdots+8032458629y+447618649)$
c_9	$(y^{30}-6y^{29}+\cdots-12y+1)$ $\cdot(y^{126}-13y^{125}+\cdots-211112500y+765625)$