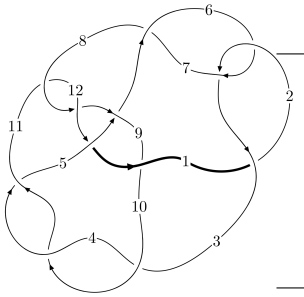
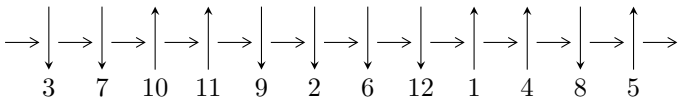
$12a_{0646}$ $(K12a_{0646})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & -7.92758 \times 10^{283} u^{107} + 4.71823 \times 10^{283} u^{106} + \cdots + 3.98501 \times 10^{285} b - 7.76087 \times 10^{285}, \\ & 1.13273 \times 10^{285} u^{107} - 9.80011 \times 10^{284} u^{106} + \cdots + 3.98501 \times 10^{285} a + 4.87210 \times 10^{286}, \\ & u^{108} - u^{107} + \cdots + 26u - 11 \rangle \\ I_2^u = \langle & 2u^{22} - 25u^{20} + \cdots + b + 1,\ u^{22} - u^{21} + \cdots + 3u^2 + a,\ u^{24} - 14u^{22} + \cdots - 2u - 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 132 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. $\boldsymbol{I_1^u = \langle -7.93 \times 10^{283} u^{107} + 4.72 \times 10^{283} u^{106} + \cdots + 3.99 \times 10^{285} b - 7.76 \times 10^{285},\ 1.13 \times 10^{285} u^{107} - 9.80 \times 10^{284} u^{106} + \cdots + 3.99 \times 10^{285} a + 4.87 \times 10^{286},\ u^{108} - u^{107} + \cdots + 26u - 11 \rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.284248u^{107} + 0.245924u^{106} + \cdots + 10.9026u - 12.2261 \\ 0.0198935u^{107} - 0.0118399u^{106} + \cdots + 2.17302u + 1.94751 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.360690u^{107} - 0.270251u^{106} + \cdots + 1.54015u + 9.66541 \\ -0.0900518u^{107} + 0.0775866u^{106} + \cdots - 0.158843u - 3.11708 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.270638u^{107} - 0.192664u^{106} + \cdots + 1.38131u + 6.54832 \\ -0.0900518u^{107} + 0.0775866u^{106} + \cdots - 0.158843u - 3.11708 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.148781u^{107} - 0.120193u^{106} + \cdots + 22.8571u - 8.84548 \\ -0.103904u^{107} + 0.0906090u^{106} + \cdots + 1.01686u + 0.660943 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.145309u^{107} + 0.0890517u^{106} + \cdots + 65.6658u - 1.78163 \\ 0.0984535u^{107} - 0.0925638u^{106} + \cdots - 10.1060u + 1.78977 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.320127u^{107} - 0.229063u^{106} + \cdots - 2.02885u + 7.86571 \\ -0.0950938u^{107} + 0.0815686u^{106} + \cdots - 0.615292u - 3.45990 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.260853u^{107} - 0.268189u^{106} + \cdots + 21.6743u + 5.87060 \\ -0.0436157u^{107} + 0.0722231u^{106} + \cdots - 6.07149u - 0.742645 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.846668u^{107} - 0.481174u^{106} + \cdots - 26.5586u + 18.7422$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{108} + 33u^{107} + \cdots + 2423u + 49$
c_2, c_6	$u^{108} - u^{107} + \cdots + 57u + 7$
c_3, c_4, c_{10}	$u^{108} + u^{107} + \cdots - 26u - 11$
c_5	$u^{108} - 2u^{107} + \cdots - 5u - 1$
c_8, c_{11}	$u^{108} - u^{107} + \cdots - 20u - 1$
c_9	$u^{108} - 7u^{107} + \cdots - 23253384u + 9157221$
c_{12}	$u^{108} - 4u^{107} + \cdots - 46u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^{108} + 95y^{107} + \cdots + 121085y + 2401$
c_2, c_6	$y^{108} - 33y^{107} + \cdots - 2423y + 49$
c_3, c_4, c_{10}	$y^{108} - 115y^{107} + \cdots - 8530y + 121$
c_5	$y^{108} - 2y^{107} + \cdots - 361y + 1$
c_8, c_{11}	$y^{108} - 59y^{107} + \cdots - 86y + 1$
c_9	$y^{108} - 43y^{107} + \cdots - 3544469265509532y + 83854696442841$
c_{12}	$y^{108} - 6y^{107} + \cdots - 2902y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.826406+0.702326I$ $a=\ \ 0.296844-0.632579I$ $b=\ \ 0.892571-0.164092I$	$-3.58745+2.67889I$	0
$u=-0.826406-0.702326I$ $a=\ \ 0.296844+0.632579I$ $b=\ \ 0.892571+0.164092I$	$-3.58745-2.67889I$	0
$u=\ \ 0.657589+0.874313I$ $a=-0.407294-0.511888I$ $b=\ \ 0.756612+0.854103I$	$2.61583+6.87570I$	0
$u=\ \ 0.657589-0.874313I$ $a=-0.407294+0.511888I$ $b=\ \ 0.756612-0.854103I$	$2.61583-6.87570I$	0
$u=-1.052110+0.317805I$ $a=\ \ 0.61143+1.83434I$ $b=-0.916488-0.526739I$	$-1.62328-1.93773I$	0
$u=-1.052110-0.317805I$ $a=\ \ 0.61143-1.83434I$ $b=-0.916488+0.526739I$	$-1.62328+1.93773I$	0
$u=-0.613248+0.934669I$ $a=\ \ 0.61329-1.40339I$ $b=\ \ 1.000230+0.772968I$	$1.86526-12.94090I$	0
$u=-0.613248-0.934669I$ $a=\ \ 0.61329+1.40339I$ $b=\ \ 1.000230-0.772968I$	$1.86526+12.94090I$	0
$u=-0.594600+0.640184I$ $a=-0.695431+0.121637I$ $b=\ \ 0.812998-0.817444I$	$5.54210-1.30136I$	0
$u=-0.594600-0.640184I$ $a=-0.695431-0.121637I$ $b=\ \ 0.812998+0.817444I$	$5.54210+1.30136I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.397084+0.760441I$ $a=-1.085940+0.411506I$ $b=-1.054780-0.256957I$	$-4.74558-7.66662I$	0
$u=-0.397084-0.760441I$ $a=-1.085940-0.411506I$ $b=-1.054780+0.256957I$	$-4.74558+7.66662I$	0
$u=0.527829+0.671958I$ $a=1.08421+1.68069I$ $b=0.952806-0.776200I$	$5.11087+7.27382I$	0
$u=0.527829-0.671958I$ $a=1.08421-1.68069I$ $b=0.952806+0.776200I$	$5.11087-7.27382I$	0
$u=0.846524+0.076552I$ $a=0.51787+2.49500I$ $b=-0.685420-0.532665I$	$-0.84832-2.31753I$	0
$u=0.846524-0.076552I$ $a=0.51787-2.49500I$ $b=-0.685420+0.532665I$	$-0.84832+2.31753I$	0
$u=-0.831839+0.112495I$ $a=0.474827-0.621836I$ $b=-0.666888+0.754916I$	$2.78451-0.68489I$	0
$u=-0.831839-0.112495I$ $a=0.474827+0.621836I$ $b=-0.666888-0.754916I$	$2.78451+0.68489I$	0
$u=0.781126+0.296733I$ $a=-0.55365-1.55198I$ $b=-1.002650+0.708253I$	$1.80960+6.24926I$	0
$u=0.781126-0.296733I$ $a=-0.55365+1.55198I$ $b=-1.002650-0.708253I$	$1.80960-6.24926I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.630697 + 1.014550I$ $a = -0.435701 - 1.265290I$ $b = -0.825483 + 0.794171I$	$2.33155 - 0.64087I$	0
$u = 0.630697 - 1.014550I$ $a = -0.435701 + 1.265290I$ $b = -0.825483 - 0.794171I$	$2.33155 + 0.64087I$	0
$u = 1.224430 + 0.069087I$ $a = 0.52278 - 1.98222I$ $b = 0.657076 + 0.114699I$	$0.71952 + 3.01349I$	0
$u = 1.224430 - 0.069087I$ $a = 0.52278 + 1.98222I$ $b = 0.657076 - 0.114699I$	$0.71952 - 3.01349I$	0
$u = -0.711564 + 1.014030I$ $a = 0.182322 - 0.606525I$ $b = -0.938398 + 0.765805I$	$1.98307 + 6.51440I$	0
$u = -0.711564 - 1.014030I$ $a = 0.182322 + 0.606525I$ $b = -0.938398 - 0.765805I$	$1.98307 - 6.51440I$	0
$u = 1.235030 + 0.133414I$ $a = -0.69564 - 1.29883I$ $b = -0.983985 + 0.639040I$	$2.19460 + 6.02559I$	0
$u = 1.235030 - 0.133414I$ $a = -0.69564 + 1.29883I$ $b = -0.983985 - 0.639040I$	$2.19460 - 6.02559I$	0
$u = -0.105444 + 0.745214I$ $a = -0.563730 + 0.774572I$ $b = -0.898197 - 0.813802I$	$4.54857 - 3.04727I$	$5.07707 + 0.I$
$u = -0.105444 - 0.745214I$ $a = -0.563730 - 0.774572I$ $b = -0.898197 + 0.813802I$	$4.54857 + 3.04727I$	$5.07707 + 0.I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.046183 + 0.748018I$ $a = 0.989218 + 0.045749I$ $b = 0.881508 + 0.689991I$	$-0.98378 - 2.65347I$	$-6.43607 + 0.I$
$u = 0.046183 - 0.748018I$ $a = 0.989218 - 0.045749I$ $b = 0.881508 - 0.689991I$	$-0.98378 + 2.65347I$	$-6.43607 + 0.I$
$u = 0.119076 + 0.738454I$ $a = 1.032320 - 0.186916I$ $b = 0.547731 + 0.286381I$	$-1.35114 - 1.34161I$	0
$u = 0.119076 - 0.738454I$ $a = 1.032320 + 0.186916I$ $b = 0.547731 - 0.286381I$	$-1.35114 + 1.34161I$	0
$u = 0.073044 + 0.736699I$ $a = -0.421442 + 0.575011I$ $b = -0.898721 - 0.816885I$	$4.55169 - 3.05529I$	$5.52278 + 0.I$
$u = 0.073044 - 0.736699I$ $a = -0.421442 - 0.575011I$ $b = -0.898721 + 0.816885I$	$4.55169 + 3.05529I$	$5.52278 + 0.I$
$u = -1.237320 + 0.258154I$ $a = 0.272431 - 0.264226I$ $b = -0.789595 + 0.650601I$	$2.87830 - 1.06653I$	0
$u = -1.237320 - 0.258154I$ $a = 0.272431 + 0.264226I$ $b = -0.789595 - 0.650601I$	$2.87830 + 1.06653I$	0
$u = 1.28281$ $a = 1.01927$ $b = 1.07037$	-1.60800	0
$u = 0.465264 + 0.506059I$ $a = -0.255885 + 0.324897I$ $b = 0.068656 - 0.702636I$	$-1.17285 + 4.53766I$	$0. - 7.32283I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.465264 - 0.506059I$ $a = -0.255885 - 0.324897I$ $b = 0.068656 + 0.702636I$	$-1.17285 - 4.53766I$	$0. + 7.32283I$
$u = 1.285280 + 0.326933I$ $a = -0.639648 - 1.081450I$ $b = -0.783408 + 0.461534I$	$2.45884 + 5.44175I$	0
$u = 1.285280 - 0.326933I$ $a = -0.639648 + 1.081450I$ $b = -0.783408 - 0.461534I$	$2.45884 - 5.44175I$	0
$u = 0.314638 + 0.543994I$ $a = 1.37427 - 0.60753I$ $b = 0.203043 - 0.088855I$	$-1.58159 - 1.29999I$	$-2.07929 - 1.71584I$
$u = 0.314638 - 0.543994I$ $a = 1.37427 + 0.60753I$ $b = 0.203043 + 0.088855I$	$-1.58159 + 1.29999I$	$-2.07929 + 1.71584I$
$u = -1.365420 + 0.199584I$ $a = -0.39632 - 1.69559I$ $b = 0.769810 + 0.118123I$	$0.29612 - 4.05424I$	0
$u = -1.365420 - 0.199584I$ $a = -0.39632 + 1.69559I$ $b = 0.769810 - 0.118123I$	$0.29612 + 4.05424I$	0
$u = -0.550416 + 0.273374I$ $a = 0.432751 - 0.300493I$ $b = -0.162263 + 0.469814I$	$1.052180 - 0.771496I$	$5.48476 + 2.39759I$
$u = -0.550416 - 0.273374I$ $a = 0.432751 + 0.300493I$ $b = -0.162263 - 0.469814I$	$1.052180 + 0.771496I$	$5.48476 - 2.39759I$
$u = -1.385720 + 0.121773I$ $a = 0.303115 - 0.651239I$ $b = -0.434682 + 0.672265I$	$3.47843 - 1.26206I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.385720-0.121773I$ $a=\ \ 0.303115+0.651239I$ $b=-0.434682-0.672265I$	$3.47843+1.26206I$	0
$u=\ \ 0.382772+0.423833I$ $a=-2.13005-1.35740I$ $b=-0.885146+0.255844I$	$-1.07975+3.41069I$	$-3.96511-9.14792I$
$u=\ \ 0.382772-0.423833I$ $a=-2.13005+1.35740I$ $b=-0.885146-0.255844I$	$-1.07975-3.41069I$	$-3.96511+9.14792I$
$u=\ \ 1.43602+0.10462I$ $a=\ \ 0.085778+0.604405I$ $b=-1.256380-0.308087I$	$0.99599+2.57219I$	0
$u=\ \ 1.43602-0.10462I$ $a=\ \ 0.085778-0.604405I$ $b=-1.256380+0.308087I$	$0.99599-2.57219I$	0
$u=\ \ 1.45322+0.01539I$ $a=\ \ 0.98833+2.48454I$ $b=-0.868157-0.784809I$	$5.52522+1.02709I$	0
$u=\ \ 1.45322-0.01539I$ $a=\ \ 0.98833-2.48454I$ $b=-0.868157+0.784809I$	$5.52522-1.02709I$	0
$u=\ \ 1.45335+0.06730I$ $a=-0.30445+1.97213I$ $b=\ \ 1.035910-0.856939I$	$9.78819+4.43020I$	0
$u=\ \ 1.45335-0.06730I$ $a=-0.30445-1.97213I$ $b=\ \ 1.035910+0.856939I$	$9.78819-4.43020I$	0
$u=-1.45651+0.13419I$ $a=\ \ 0.533446-1.173330I$ $b=\ \ 1.038150+0.290165I$	$4.88468-5.44613I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.45651-0.13419I$ $a=\ 0.533446+1.173330I$ $b=\ 1.038150-0.290165I$	$4.88468+5.44613I$	0
$u=-1.46789+0.07083I$ $a=-0.571847+0.494446I$ $b=-0.938749-0.218053I$	$4.52034-0.60338I$	0
$u=-1.46789-0.07083I$ $a=-0.571847-0.494446I$ $b=-0.938749+0.218053I$	$4.52034+0.60338I$	0
$u=-1.47676+0.05833I$ $a=\ 1.33694+2.14095I$ $b=-0.902528-0.775140I$	$5.41802-6.90153I$	0
$u=-1.47676-0.05833I$ $a=\ 1.33694-2.14095I$ $b=-0.902528+0.775140I$	$5.41802+6.90153I$	0
$u=\ 0.164013+0.491402I$ $a=-1.28835-2.46489I$ $b=-0.923300+0.015308I$	$-4.58460+1.50140I$	$-13.14140-4.79884I$
$u=\ 0.164013-0.491402I$ $a=-1.28835+2.46489I$ $b=-0.923300-0.015308I$	$-4.58460-1.50140I$	$-13.14140+4.79884I$
$u=-1.48840+0.02903I$ $a=-0.92804+1.33247I$ $b=\ 0.797159-0.973627I$	$10.54520+2.25757I$	0
$u=-1.48840-0.02903I$ $a=-0.92804-1.33247I$ $b=\ 0.797159+0.973627I$	$10.54520-2.25757I$	0
$u=\ 0.304493+0.404980I$ $a=\ 1.325960+0.344553I$ $b=\ 0.785743+0.221498I$	$-1.35161-0.69528I$	$-5.45387-0.15532I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.304493 - 0.404980I$ $a = 1.325960 - 0.344553I$ $b = 0.785743 - 0.221498I$	$-1.35161 + 0.69528I$	$-5.45387 + 0.15532I$
$u = 1.48002 + 0.24521I$ $a = 0.183977 + 0.995608I$ $b = 1.169580 - 0.331951I$	$1.34108 + 11.24650I$	0
$u = 1.48002 - 0.24521I$ $a = 0.183977 - 0.995608I$ $b = 1.169580 + 0.331951I$	$1.34108 - 11.24650I$	0
$u = -1.50553 + 0.15980I$ $a = -0.110284 + 1.147220I$ $b = 0.007596 - 0.930722I$	$5.33190 - 6.95781I$	0
$u = -1.50553 - 0.15980I$ $a = -0.110284 - 1.147220I$ $b = 0.007596 + 0.930722I$	$5.33190 + 6.95781I$	0
$u = -1.52743$ $a = 0.0708736$ $b = -1.26492$	3.66997	0
$u = 1.52982 + 0.06908I$ $a = -0.272438 - 0.936152I$ $b = 0.085539 + 0.715510I$	$8.02491 + 1.99550I$	0
$u = 1.52982 - 0.06908I$ $a = -0.272438 + 0.936152I$ $b = 0.085539 - 0.715510I$	$8.02491 - 1.99550I$	0
$u = 0.466195$ $a = 0.654780$ $b = 1.13790$	-3.03687	7.76040
$u = -0.164029 + 0.432887I$ $a = 0.97174 + 1.24648I$ $b = 1.087880 - 0.339070I$	$-4.32431 - 0.83615I$	$-9.51604 + 6.44566I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.164029-0.432887I$ $a=\ 0.97174-1.24648I$ $b=\ 1.087880+0.339070I$	$-4.32431+0.83615I$	$-9.51604-6.44566I$
$u=-1.52809+0.24217I$ $a=-0.19088+2.16925I$ $b=-1.008600-0.784419I$	$11.8381-10.6728I$	0
$u=-1.52809-0.24217I$ $a=-0.19088-2.16925I$ $b=-1.008600+0.784419I$	$11.8381+10.6728I$	0
$u=\ 1.55000+0.21775I$ $a=\ 1.14831+0.90928I$ $b=-0.762394-0.879186I$	$12.60730+4.49737I$	0
$u=\ 1.55000-0.21775I$ $a=\ 1.14831-0.90928I$ $b=-0.762394+0.879186I$	$12.60730-4.49737I$	0
$u=\ 0.172123+0.368431I$ $a=-0.509581-0.330862I$ $b=-0.888280-0.840803I$	$4.55730-3.10967I$	$6.48560+3.67856I$
$u=\ 0.172123-0.368431I$ $a=-0.509581+0.330862I$ $b=-0.888280+0.840803I$	$4.55730+3.10967I$	$6.48560-3.67856I$
$u=-1.59306+0.09824I$ $a=-0.27997-1.79172I$ $b=\ 1.076840+0.785198I$	$9.75240-7.79008I$	0
$u=-1.59306-0.09824I$ $a=-0.27997+1.79172I$ $b=\ 1.076840-0.785198I$	$9.75240+7.79008I$	0
$u=\ 1.54776+0.39267I$ $a=-0.06905+1.92558I$ $b=\ 0.947123-0.835034I$	$10.16660+8.06087I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.54776 - 0.39267I$ $a = -0.06905 - 1.92558I$ $b = 0.947123 + 0.835034I$	$10.16660 - 8.06087I$	0
$u = -1.56300 + 0.35118I$ $a = -0.90080 + 1.13332I$ $b = 0.866890 - 0.869180I$	$10.42150 - 1.73936I$	0
$u = -1.56300 - 0.35118I$ $a = -0.90080 - 1.13332I$ $b = 0.866890 + 0.869180I$	$10.42150 + 1.73936I$	0
$u = 1.60229 + 0.05390I$ $a = -0.78327 - 1.29720I$ $b = 0.679451 + 0.935274I$	$10.97670 + 1.45422I$	0
$u = 1.60229 - 0.05390I$ $a = -0.78327 + 1.29720I$ $b = 0.679451 - 0.935274I$	$10.97670 - 1.45422I$	0
$u = -1.59289 + 0.28710I$ $a = 1.00581 - 1.05020I$ $b = -0.743357 + 0.936328I$	$9.9883 - 11.1495I$	0
$u = -1.59289 - 0.28710I$ $a = 1.00581 + 1.05020I$ $b = -0.743357 - 0.936328I$	$9.9883 + 11.1495I$	0
$u = 1.58840 + 0.31909I$ $a = -0.03751 - 2.01558I$ $b = -1.044430 + 0.801461I$	$9.0370 + 17.5438I$	0
$u = 1.58840 - 0.31909I$ $a = -0.03751 + 2.01558I$ $b = -1.044430 - 0.801461I$	$9.0370 - 17.5438I$	0
$u = -1.67137 + 0.26469I$ $a = -0.06087 - 1.88098I$ $b = 0.921022 + 0.775545I$	$10.24840 - 4.23432I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.67137-0.26469I$ $a=-0.06087+1.88098I$ $b=\ \ 0.921022-0.775545I$	$10.24840+4.23432I$	0
$u=\ \ 0.261760+0.146137I$ $a=-2.55071+4.93104I$ $b=\ \ 0.943786-0.683315I$	$-0.53218+6.11328I$	$-6.24054-11.17087I$
$u=\ \ 0.261760-0.146137I$ $a=-2.55071-4.93104I$ $b=\ \ 0.943786+0.683315I$	$-0.53218-6.11328I$	$-6.24054+11.17087I$
$u=\ \ 1.72103$ $a=\ \ 0.278929$ $b=-0.628756$	6.22515	0
$u=\ \ 1.71697+0.22486I$ $a=-0.85986-1.14022I$ $b=\ \ 0.850326+0.790480I$	$10.46550-1.65995I$	0
$u=\ \ 1.71697-0.22486I$ $a=-0.85986+1.14022I$ $b=\ \ 0.850326-0.790480I$	$10.46550+1.65995I$	0
$u=-0.142321+0.056407I$ $a=-6.71036+7.59732I$ $b=\ \ 0.768935-0.695831I$	$0.008069-0.791564I$	$-4.72728+5.40012I$
$u=-0.142321-0.056407I$ $a=-6.71036-7.59732I$ $b=\ \ 0.768935+0.695831I$	$0.008069+0.791564I$	$-4.72728-5.40012I$

II.

$\boldsymbol{I_2^u = \langle 2u^{22}-25u^{20}+\cdots+b+1,\ u^{22}-u^{21}+\cdots+3u^2+a,\ u^{24}-14u^{22}+\cdots-2u-1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} u \\ -u^3+u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^2+1 \\ u^4-2u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^{22}+u^{21}+\cdots+3u^3-3u^2 \\ -2u^{22}+25u^{20}+\cdots-4u-1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^{17}-10u^{15}+\cdots-3u+1 \\ u^{23}-13u^{21}+\cdots+2u-1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^{23}-13u^{21}+\cdots+2u^2-u \\ u^{23}-13u^{21}+\cdots+2u-1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^{22}+12u^{20}+\cdots+2u^3+1 \\ u^{23}-2u^{22}+\cdots-3u-2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^{23}+12u^{21}+\cdots+2u^4-3u^3 \\ -3u^{23}+u^{22}+\cdots+u+1 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u^{23}-12u^{21}+\cdots-2u+1 \\ u^{23}-13u^{21}+\cdots+3u-1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^{23}-13u^{21}+\cdots+4u-1 \\ -u^{19}+11u^{17}+\cdots-u+1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $=$
$6u^{22}+u^{21}-78u^{20}-4u^{19}+427u^{18}-27u^{17}-1263u^{16}+225u^{15}+2139u^{14}-639u^{13}-1978u^{12}+886u^{11}+746u^{10}-595u^9+183u^8+139u^7-265u^6+39u^5+107u^4-41u^3-13u^2+8u-1$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{24} - 10u^{23} + \cdots - 17u + 1$
c_2	$u^{24} - 5u^{22} + \cdots + u + 1$
c_3, c_4	$u^{24} - 14u^{22} + \cdots - 2u - 1$
c_5	$u^{24} - 3u^{23} + \cdots - 3u - 1$
c_6	$u^{24} - 5u^{22} + \cdots - u + 1$
c_7	$u^{24} + 10u^{23} + \cdots + 17u + 1$
c_8	$u^{24} + 4u^{23} + \cdots + 4u + 1$
c_9	$u^{24} + 4u^{22} + \cdots - 2u + 1$
c_{10}	$u^{24} - 14u^{22} + \cdots + 2u - 1$
c_{11}	$u^{24} - 4u^{23} + \cdots - 4u + 1$
c_{12}	$u^{24} + u^{23} + \cdots - 4u^2 - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^{24} + 18y^{23} + \cdots - 21y + 1$
c_2, c_6	$y^{24} - 10y^{23} + \cdots - 17y + 1$
c_3, c_4, c_{10}	$y^{24} - 28y^{23} + \cdots - 12y + 1$
c_5	$y^{24} - 3y^{23} + \cdots - 11y + 1$
c_8, c_{11}	$y^{24} - 16y^{23} + \cdots - 24y + 1$
c_9	$y^{24} + 8y^{23} + \cdots + 14y + 1$
c_{12}	$y^{24} - 3y^{23} + \cdots + 8y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.230070+0.129407I$ $a=\ 0.782814-0.650052I$ $b=\ 0.944738+0.630597I$	$2.14251-6.88848I$	$-2.01455+11.24004I$
$u=-1.230070-0.129407I$ $a=\ 0.782814+0.650052I$ $b=\ 0.944738-0.630597I$	$2.14251+6.88848I$	$-2.01455-11.24004I$
$u=\ 1.228340+0.156795I$ $a=\ 0.381367-0.046025I$ $b=\ 0.773922+0.637521I$	$2.69064+1.92070I$	$-1.54705-5.16423I$
$u=\ 1.228340-0.156795I$ $a=\ 0.381367+0.046025I$ $b=\ 0.773922-0.637521I$	$2.69064-1.92070I$	$-1.54705+5.16423I$
$u=\ 0.615317+0.357755I$ $a=\ 0.03489-2.76323I$ $b=-0.771598+0.703319I$	$0.370062-0.053259I$	$-0.21995-2.70890I$
$u=\ 0.615317-0.357755I$ $a=\ 0.03489+2.76323I$ $b=-0.771598-0.703319I$	$0.370062+0.053259I$	$-0.21995+2.70890I$
$u=\ 0.048840+0.698393I$ $a=-0.372400+0.731953I$ $b=-0.902714-0.840212I$	$3.98726-3.12415I$	$-9.24056+3.19343I$
$u=\ 0.048840-0.698393I$ $a=-0.372400-0.731953I$ $b=-0.902714+0.840212I$	$3.98726+3.12415I$	$-9.24056-3.19343I$
$u=\ 1.295160+0.193439I$ $a=\ 0.15743-2.03887I$ $b=-0.670411+0.319916I$	$1.15817+4.30220I$	$0.78705-7.24708I$
$u=\ 1.295160-0.193439I$ $a=\ 0.15743+2.03887I$ $b=-0.670411-0.319916I$	$1.15817-4.30220I$	$0.78705+7.24708I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.309930+0.117543I$ $a=-0.024538-1.224720I$ $b=-1.012930+0.281465I$	$-0.14892-1.67218I$	$-4.82479-0.17650I$
$u=-1.309930-0.117543I$ $a=-0.024538+1.224720I$ $b=-1.012930-0.281465I$	$-0.14892+1.67218I$	$-4.82479+0.17650I$
$u=-0.615545+0.285268I$ $a=\ \ 1.53576-1.27096I$ $b=-0.950649+0.677392I$	$-0.19202+5.37231I$	$-1.91802-2.72860I$
$u=-0.615545-0.285268I$ $a=\ \ 1.53576+1.27096I$ $b=-0.950649-0.677392I$	$-0.19202-5.37231I$	$-1.91802+2.72860I$
$u=\ \ 0.430788+0.491614I$ $a=\ \ 2.27226+0.65280I$ $b=\ \ 0.613962+0.180773I$	$-2.03858-1.87641I$	$-9.16189+5.53569I$
$u=\ \ 0.430788-0.491614I$ $a=\ \ 2.27226-0.65280I$ $b=\ \ 0.613962-0.180773I$	$-2.03858+1.87641I$	$-9.16189-5.53569I$
$u=\ \ 1.54136$ $a=\ \ 0.0266421$ $b=-1.20546$	3.34972	-13.3400
$u=\ \ 1.56893+0.19019I$ $a=-0.28306+1.87864I$ $b=\ \ 0.999750-0.821117I$	$9.83715+6.48845I$	$1.87521-3.31423I$
$u=\ \ 1.56893-0.19019I$ $a=-0.28306-1.87864I$ $b=\ \ 0.999750+0.821117I$	$9.83715-6.48845I$	$1.87521+3.31423I$
$u=-0.350431+0.225016I$ $a=-0.625782+0.317080I$ $b=\ \ 1.011080+0.145034I$	$-3.61025+0.35873I$	$-5.20321-1.54805I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.350431-0.225016I$ $a=-0.625782-0.317080I$ $b=\ \ 1.011080-0.145034I$	$-3.61025-0.35873I$	$-5.20321+1.54805I$
$u=-1.61370+0.15698I$ $a=-0.83158+1.29923I$ $b=\ \ 0.797538-0.880352I$	$10.45490-0.17618I$	$2.47036-1.44047I$
$u=-1.61370-0.15698I$ $a=-0.83158-1.29923I$ $b=\ \ 0.797538+0.880352I$	$10.45490+0.17618I$	$2.47036+1.44047I$
$u=-1.67680$ $a=-0.0809701$ $b=-0.459922$	6.56615	12.3340

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{24}-10u^{23}+\cdots-17u+1)(u^{108}+33u^{107}+\cdots+2423u+49)$
c_2	$(u^{24}-5u^{22}+\cdots+u+1)(u^{108}-u^{107}+\cdots+57u+7)$
c_3, c_4	$(u^{24}-14u^{22}+\cdots-2u-1)(u^{108}+u^{107}+\cdots-26u-11)$
c_5	$(u^{24}-3u^{23}+\cdots-3u-1)(u^{108}-2u^{107}+\cdots-5u-1)$
c_6	$(u^{24}-5u^{22}+\cdots-u+1)(u^{108}-u^{107}+\cdots+57u+7)$
c_7	$(u^{24}+10u^{23}+\cdots+17u+1)(u^{108}+33u^{107}+\cdots+2423u+49)$
c_8	$(u^{24}+4u^{23}+\cdots+4u+1)(u^{108}-u^{107}+\cdots-20u-1)$
c_9	$(u^{24}+4u^{22}+\cdots-2u+1)$ $\cdot(u^{108}-7u^{107}+\cdots-23253384u+9157221)$
c_{10}	$(u^{24}-14u^{22}+\cdots+2u-1)(u^{108}+u^{107}+\cdots-26u-11)$
c_{11}	$(u^{24}-4u^{23}+\cdots-4u+1)(u^{108}-u^{107}+\cdots-20u-1)$
c_{12}	$(u^{24}+u^{23}+\cdots-4u^2-1)(u^{108}-4u^{107}+\cdots-46u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_7	$(y^{24}+18y^{23}+\cdots-21y+1)(y^{108}+95y^{107}+\cdots+121085y+2401)$
c_2, c_6	$(y^{24}-10y^{23}+\cdots-17y+1)(y^{108}-33y^{107}+\cdots-2423y+49)$
c_3, c_4, c_{10}	$(y^{24}-28y^{23}+\cdots-12y+1)(y^{108}-115y^{107}+\cdots-8530y+121)$
c_5	$(y^{24}-3y^{23}+\cdots-11y+1)(y^{108}-2y^{107}+\cdots-361y+1)$
c_8, c_{11}	$(y^{24}-16y^{23}+\cdots-24y+1)(y^{108}-59y^{107}+\cdots-86y+1)$
c_9	$(y^{24}+8y^{23}+\cdots+14y+1)$ $\cdot(y^{108}-43y^{107}+\cdots-3544469265509532y+83854696442841)$
c_{12}	$(y^{24}-3y^{23}+\cdots+8y+1)(y^{108}-6y^{107}+\cdots-2902y+1)$