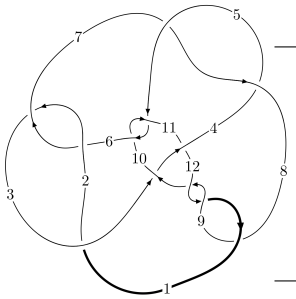
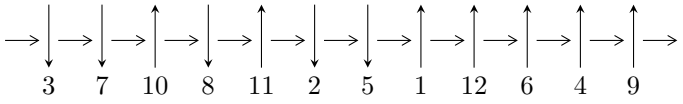
$12a_{0622}$ $(K12a_{0622})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 4.48195 \times 10^{360} u^{129} - 2.24649 \times 10^{360} u^{128} + \cdots + 1.41689 \times 10^{360} b - 1.72726 \times 10^{363}, \\ & 4.29505 \times 10^{363} u^{129} - 5.66837 \times 10^{362} u^{128} + \cdots + 3.98147 \times 10^{362} a - 1.19128 \times 10^{366}, \\ & u^{130} - u^{129} + \cdots - 2132u + 281 \rangle \\ I_2^u = \langle & 16u^{31} - 6u^{30} + \cdots + b + 17,\ -36u^{31} + 35u^{30} + \cdots + a - 60,\ u^{32} - 8u^{30} + \cdots + 3u + 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 162 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. $\boldsymbol{I_1^u = \langle 4.48 \times 10^{360} u^{129} - 2.25 \times 10^{360} u^{128} + \cdots + 1.42 \times 10^{360} b - 1.73 \times 10^{363},\ 4.30 \times 10^{363} u^{129} - 5.67 \times 10^{362} u^{128} + \cdots + 3.98 \times 10^{362} a - 1.19 \times 10^{366},\ u^{130} - u^{129} + \cdots - 2132u + 281 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -10.7876u^{129} + 1.42369u^{128} + \cdots - 20220.3u + 2992.06 \\ -3.16322u^{129} + 1.58550u^{128} + \cdots - 7878.65u + 1219.05 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.320480u^{129} - 1.28783u^{128} + \cdots + 1797.24u - 334.920 \\ -1.64933u^{129} - 1.18720u^{128} + \cdots - 695.804u + 38.0681 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -5.51277u^{129} + 0.141240u^{128} + \cdots - 9094.61u + 1307.14 \\ -3.33741u^{129} + 1.09015u^{128} + \cdots - 7233.58u + 1092.81 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -7.62437u^{129} - 0.161817u^{128} + \cdots - 12341.7u + 1773.01 \\ -3.16322u^{129} + 1.58550u^{128} + \cdots - 7878.65u + 1219.05 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -1.53534u^{129} - 1.41287u^{128} + \cdots + 106.463u - 101.642 \\ -2.45838u^{129} - 0.606476u^{128} + \cdots - 2961.13u + 391.626 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -1.29895u^{129} - 0.443172u^{128} + \cdots - 1206.94u + 133.828 \\ 0.770830u^{129} - 0.0309308u^{128} + \cdots + 1333.06u - 193.571 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -3.29734u^{129} - 0.470625u^{128} + \cdots - 4505.06u + 619.044 \\ -2.55890u^{129} + 0.952322u^{128} + \cdots - 5780.28u + 879.275 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 9.85019u^{129} - 2.86707u^{128} + \cdots + 21034.7u - 3194.45$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{130} + 59u^{129} + \cdots + 2798166u + 78961$
c_2, c_6	$u^{130} - u^{129} + \cdots - 2132u + 281$
c_3	$u^{130} + 17u^{128} + \cdots + 693261u + 67289$
c_4, c_7	$u^{130} - 4u^{129} + \cdots - 77445u + 8257$
c_5, c_{10}	$u^{130} + u^{129} + \cdots + u + 1$
c_8, c_9, c_{12}	$u^{130} + 3u^{129} + \cdots + 167u + 49$
c_{11}	$u^{130} - 5u^{129} + \cdots + 300381u + 21815$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{130} + 41y^{129} + \cdots + 2849686224134y + 6234839521$
c_2, c_6	$y^{130} - 59y^{129} + \cdots - 2798166y + 78961$
c_3	$y^{130} + 34y^{129} + \cdots + 179177883001y + 4527809521$
c_4, c_7	$y^{130} + 82y^{129} + \cdots + 573275145y + 68178049$
c_5, c_{10}	$y^{130} + 73y^{129} + \cdots + 39y + 1$
c_8, c_9, c_{12}	$y^{130} + 125y^{129} + \cdots - 124811y + 2401$
c_{11}	$y^{130} + 25y^{129} + \cdots + 54768666299y + 475894225$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.918333+0.376916I$ $a=\ \ 0.61362-3.16082I$ $b=-0.326161-1.144000I$	$-2.48560+3.18878I$	0
$u=-0.918333-0.376916I$ $a=\ \ 0.61362+3.16082I$ $b=-0.326161+1.144000I$	$-2.48560-3.18878I$	0
$u=\ \ 1.007430+0.080772I$ $a=-0.114771-0.697783I$ $b=\ \ 0.783850+0.365345I$	$-6.62927+5.20669I$	0
$u=\ \ 1.007430-0.080772I$ $a=-0.114771+0.697783I$ $b=\ \ 0.783850-0.365345I$	$-6.62927-5.20669I$	0
$u=\ \ 0.910730+0.378156I$ $a=\ \ 2.08409+1.71073I$ $b=-0.088955+0.742570I$	$0.071473+0.583839I$	0
$u=\ \ 0.910730-0.378156I$ $a=\ \ 2.08409-1.71073I$ $b=-0.088955-0.742570I$	$0.071473-0.583839I$	0
$u=\ \ 0.414089+0.927045I$ $a=-0.100985+0.378022I$ $b=\ \ 0.660024+1.192480I$	$2.14149+8.42500I$	0
$u=\ \ 0.414089-0.927045I$ $a=-0.100985-0.378022I$ $b=\ \ 0.660024-1.192480I$	$2.14149-8.42500I$	0
$u=\ \ 0.903721+0.388996I$ $a=-0.99899-2.08540I$ $b=-0.14557-1.65453I$	$-4.38247-1.58999I$	0
$u=\ \ 0.903721-0.388996I$ $a=-0.99899+2.08540I$ $b=-0.14557+1.65453I$	$-4.38247+1.58999I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.741954+0.706883I$ $a=-0.521732-0.760102I$ $b=\ \ 0.495114-1.034270I$	$-2.27849-2.92803I$	0
$u=-0.741954-0.706883I$ $a=-0.521732+0.760102I$ $b=\ \ 0.495114+1.034270I$	$-2.27849+2.92803I$	0
$u=\ \ 0.928867+0.442302I$ $a=-0.636292-0.645715I$ $b=\ \ 0.565504+0.088503I$	$-0.22490-3.67786I$	0
$u=\ \ 0.928867-0.442302I$ $a=-0.636292+0.645715I$ $b=\ \ 0.565504-0.088503I$	$-0.22490+3.67786I$	0
$u=-0.510755+0.825342I$ $a=\ \ 0.464158-0.829602I$ $b=-1.010670-0.341418I$	$-1.11158-6.49586I$	0
$u=-0.510755-0.825342I$ $a=\ \ 0.464158+0.829602I$ $b=-1.010670+0.341418I$	$-1.11158+6.49586I$	0
$u=\ \ 0.973993+0.351680I$ $a=-0.54204-1.68412I$ $b=\ \ 0.995313-0.425312I$	$-0.10866-4.20067I$	0
$u=\ \ 0.973993-0.351680I$ $a=-0.54204+1.68412I$ $b=\ \ 0.995313+0.425312I$	$-0.10866+4.20067I$	0
$u=-0.876625+0.380874I$ $a=-0.723895-1.088180I$ $b=\ \ 0.580547-1.036930I$	$-2.34974-0.04063I$	0
$u=-0.876625-0.380874I$ $a=-0.723895+1.088180I$ $b=\ \ 0.580547+1.036930I$	$-2.34974+0.04063I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.885837 + 0.265977I$ $a = 0.033600 + 1.078540I$ $b = -1.043990 - 0.259659I$	$0.52634 + 1.67625I$	0
$u = 0.885837 - 0.265977I$ $a = 0.033600 - 1.078540I$ $b = -1.043990 + 0.259659I$	$0.52634 - 1.67625I$	0
$u = -0.427832 + 0.810569I$ $a = -0.724858 + 0.035914I$ $b = 0.346471 - 1.111740I$	$-7.59119 - 5.62660I$	0
$u = -0.427832 - 0.810569I$ $a = -0.724858 - 0.035914I$ $b = 0.346471 + 1.111740I$	$-7.59119 + 5.62660I$	0
$u = 1.080860 + 0.091245I$ $a = 0.08031 + 2.29630I$ $b = 0.139621 + 1.331460I$	$-6.61444 + 1.17446I$	0
$u = 1.080860 - 0.091245I$ $a = 0.08031 - 2.29630I$ $b = 0.139621 - 1.331460I$	$-6.61444 - 1.17446I$	0
$u = -0.262067 + 0.866620I$ $a = 0.159034 - 0.878845I$ $b = 0.456615 - 0.870797I$	$3.05724 - 0.21106I$	0
$u = -0.262067 - 0.866620I$ $a = 0.159034 + 0.878845I$ $b = 0.456615 + 0.870797I$	$3.05724 + 0.21106I$	0
$u = 1.001890 + 0.460140I$ $a = 0.79839 + 1.70336I$ $b = 0.31736 + 1.63299I$	$-9.23278 - 6.09609I$	0
$u = 1.001890 - 0.460140I$ $a = 0.79839 - 1.70336I$ $b = 0.31736 - 1.63299I$	$-9.23278 + 6.09609I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.554859+0.704922I$ $a=-0.507533+0.996095I$ $b=\ \ 1.070950+0.464783I$	$4.53440-2.24300I$	0
$u=-0.554859-0.704922I$ $a=-0.507533-0.996095I$ $b=\ \ 1.070950-0.464783I$	$4.53440+2.24300I$	0
$u=-0.964806+0.543621I$ $a=-1.20361+2.46718I$ $b=\ \ 0.358836+1.133590I$	$1.20953+5.73514I$	0
$u=-0.964806-0.543621I$ $a=-1.20361-2.46718I$ $b=\ \ 0.358836-1.133590I$	$1.20953-5.73514I$	0
$u=\ \ 0.832873+0.733971I$ $a=-0.907150+0.472746I$ $b=-0.030685-0.522076I$	$-0.055542-0.848734I$	0
$u=\ \ 0.832873-0.733971I$ $a=-0.907150-0.472746I$ $b=-0.030685+0.522076I$	$-0.055542+0.848734I$	0
$u=\ \ 0.408476+1.033990I$ $a=\ \ 0.131982-0.483838I$ $b=-0.622096-1.209230I$	$-3.83815+12.36200I$	0
$u=\ \ 0.408476-1.033990I$ $a=\ \ 0.131982+0.483838I$ $b=-0.622096+1.209230I$	$-3.83815-12.36200I$	0
$u=-0.495741+0.732224I$ $a=\ \ 0.395080-0.025392I$ $b=-0.333843+1.057910I$	$-1.62297-2.76336I$	0
$u=-0.495741-0.732224I$ $a=\ \ 0.395080+0.025392I$ $b=-0.333843-1.057910I$	$-1.62297+2.76336I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.709771+0.521874I$ $a=\ \ 0.494712+1.025850I$ $b=-0.542892+1.002960I$	$2.04853-1.38534I$	0
$u=-0.709771-0.521874I$ $a=\ \ 0.494712-1.025850I$ $b=-0.542892-1.002960I$	$2.04853+1.38534I$	0
$u=-1.042140+0.437424I$ $a=-1.30874+1.28314I$ $b=\ \ 0.569283+1.217010I$	$-9.26430+0.13364I$	0
$u=-1.042140-0.437424I$ $a=-1.30874-1.28314I$ $b=\ \ 0.569283-1.217010I$	$-9.26430-0.13364I$	0
$u=-0.999775+0.535612I$ $a=\ \ 0.832640+0.364844I$ $b=\ \ 1.251810-0.593679I$	$1.15973+1.49327I$	0
$u=-0.999775-0.535612I$ $a=\ \ 0.832640-0.364844I$ $b=\ \ 1.251810+0.593679I$	$1.15973-1.49327I$	0
$u=\ \ 0.816150+0.284111I$ $a=-2.82625-2.69791I$ $b=\ \ 0.051865-0.797538I$	$-5.51664+3.93255I$	0
$u=\ \ 0.816150-0.284111I$ $a=-2.82625+2.69791I$ $b=\ \ 0.051865+0.797538I$	$-5.51664-3.93255I$	0
$u=-1.000570+0.547276I$ $a=\ \ 1.35091-1.30910I$ $b=-0.490318-1.234650I$	$-3.02301+3.67389I$	0
$u=-1.000570-0.547276I$ $a=\ \ 1.35091+1.30910I$ $b=-0.490318+1.234650I$	$-3.02301-3.67389I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.491776+1.031030I$ $a=-0.124553+0.815503I$ $b=-0.419982+0.909875I$	$-1.82061+2.16568I$	0
$u=-0.491776-1.031030I$ $a=-0.124553-0.815503I$ $b=-0.419982-0.909875I$	$-1.82061-2.16568I$	0
$u=0.366216+1.082990I$ $a=-0.088275+0.635376I$ $b=-0.372863+0.745284I$	$0.61132-1.75683I$	0
$u=0.366216-1.082990I$ $a=-0.088275-0.635376I$ $b=-0.372863-0.745284I$	$0.61132+1.75683I$	0
$u=0.880187+0.734896I$ $a=0.264143-0.023723I$ $b=-0.412441+0.312440I$	$3.75759-2.82713I$	0
$u=0.880187-0.734896I$ $a=0.264143+0.023723I$ $b=-0.412441-0.312440I$	$3.75759+2.82713I$	0
$u=-1.106390+0.315265I$ $a=-0.387678-0.052899I$ $b=-0.798494+0.283142I$	$-7.76841+0.73450I$	0
$u=-1.106390-0.315265I$ $a=-0.387678+0.052899I$ $b=-0.798494-0.283142I$	$-7.76841-0.73450I$	0
$u=-0.950870+0.652024I$ $a=1.63019-2.05960I$ $b=-0.387274-1.118130I$	$-2.92554+8.15794I$	0
$u=-0.950870-0.652024I$ $a=1.63019+2.05960I$ $b=-0.387274+1.118130I$	$-2.92554-8.15794I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.831239 + 0.803306I$ $a = -0.406684 + 0.033121I$ $b = 0.471054 - 0.131429I$	$-0.169856 - 1.043080I$	0
$u = 0.831239 - 0.803306I$ $a = -0.406684 - 0.033121I$ $b = 0.471054 + 0.131429I$	$-0.169856 + 1.043080I$	0
$u = -0.026254 + 0.840265I$ $a = -0.584767 + 0.396183I$ $b = 0.543431 + 1.051160I$	$-6.24697 + 1.62277I$	0
$u = -0.026254 - 0.840265I$ $a = -0.584767 - 0.396183I$ $b = 0.543431 - 1.051160I$	$-6.24697 - 1.62277I$	0
$u = 0.876897 + 0.764717I$ $a = 0.241105 - 0.358138I$ $b = 0.071279 + 0.307185I$	$3.79796 - 2.89765I$	0
$u = 0.876897 - 0.764717I$ $a = 0.241105 + 0.358138I$ $b = 0.071279 - 0.307185I$	$3.79796 + 2.89765I$	0
$u = 0.970038 + 0.644359I$ $a = -0.193150 + 0.150265I$ $b = 0.543686 - 0.360036I$	$-0.55347 - 4.54856I$	0
$u = 0.970038 - 0.644359I$ $a = -0.193150 - 0.150265I$ $b = 0.543686 + 0.360036I$	$-0.55347 + 4.54856I$	0
$u = 1.079200 + 0.452388I$ $a = 0.451052 + 0.673341I$ $b = -0.599177 - 0.207977I$	$-6.92494 - 6.65469I$	0
$u = 1.079200 - 0.452388I$ $a = 0.451052 - 0.673341I$ $b = -0.599177 + 0.207977I$	$-6.92494 + 6.65469I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.348918 + 0.751391I$ $a = 0.166047 - 0.132015I$ $b = -0.710919 - 1.114800I$	$1.01384 + 3.66568I$	0
$u = 0.348918 - 0.751391I$ $a = 0.166047 + 0.132015I$ $b = -0.710919 + 1.114800I$	$1.01384 - 3.66568I$	0
$u = 1.096720 + 0.439229I$ $a = -1.15383 - 1.42834I$ $b = 0.137942 - 0.668622I$	$-0.74381 - 3.49112I$	0
$u = 1.096720 - 0.439229I$ $a = -1.15383 + 1.42834I$ $b = 0.137942 + 0.668622I$	$-0.74381 + 3.49112I$	0
$u = -1.168330 + 0.254630I$ $a = 0.90826 - 1.51143I$ $b = 0.418149 - 1.220670I$	$-3.52367 - 0.78738I$	0
$u = -1.168330 - 0.254630I$ $a = 0.90826 + 1.51143I$ $b = 0.418149 + 1.220670I$	$-3.52367 + 0.78738I$	0
$u = -1.034010 + 0.602691I$ $a = -0.562343 - 0.534056I$ $b = -1.282070 + 0.331052I$	$3.09715 + 7.28141I$	0
$u = -1.034010 - 0.602691I$ $a = -0.562343 + 0.534056I$ $b = -1.282070 - 0.331052I$	$3.09715 - 7.28141I$	0
$u = -0.760698 + 0.240385I$ $a = 0.318663 - 0.194137I$ $b = 0.322300 - 0.424796I$	$-1.25852 + 0.66106I$	0
$u = -0.760698 - 0.240385I$ $a = 0.318663 + 0.194137I$ $b = 0.322300 + 0.424796I$	$-1.25852 - 0.66106I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.599657+0.517735I$ $a=\ \ 0.72550-1.29041I$ $b=-1.088280-0.762824I$	$2.39395+2.84788I$	0
$u=-0.599657-0.517735I$ $a=\ \ 0.72550+1.29041I$ $b=-1.088280+0.762824I$	$2.39395-2.84788I$	0
$u=\ \ 0.710150+0.345787I$ $a=\ \ 1.45078+2.69873I$ $b=-0.05196+1.57540I$	$-8.10061+2.58041I$	0
$u=\ \ 0.710150-0.345787I$ $a=\ \ 1.45078-2.69873I$ $b=-0.05196-1.57540I$	$-8.10061-2.58041I$	0
$u=\ \ 0.929564+0.778342I$ $a=\ \ 0.062791+0.570268I$ $b=-0.259766-0.298716I$	$-0.48698-4.90747I$	0
$u=\ \ 0.929564-0.778342I$ $a=\ \ 0.062791-0.570268I$ $b=-0.259766+0.298716I$	$-0.48698+4.90747I$	0
$u=-1.062690+0.616209I$ $a=-1.41874+1.34078I$ $b=\ \ 0.475164+1.174760I$	$-3.29068+7.92539I$	0
$u=-1.062690-0.616209I$ $a=-1.41874-1.34078I$ $b=\ \ 0.475164-1.174760I$	$-3.29068-7.92539I$	0
$u=\ \ 1.219110+0.159389I$ $a=-0.03749-1.99593I$ $b=-0.272061-1.338820I$	$-12.88230+2.99778I$	0
$u=\ \ 1.219110-0.159389I$ $a=-0.03749+1.99593I$ $b=-0.272061+1.338820I$	$-12.88230-2.99778I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.760796 + 0.970708I$ $a = -0.166713 - 0.490808I$ $b = 0.298576 - 0.639065I$	$3.87814 - 3.36972I$	0
$u = 0.760796 - 0.970708I$ $a = -0.166713 + 0.490808I$ $b = 0.298576 + 0.639065I$	$3.87814 + 3.36972I$	0
$u = -0.502105 + 0.573747I$ $a = 0.232700 + 0.257279I$ $b = 0.218874 - 0.992560I$	$-1.65413 + 0.81096I$	0
$u = -0.502105 - 0.573747I$ $a = 0.232700 - 0.257279I$ $b = 0.218874 + 0.992560I$	$-1.65413 - 0.81096I$	0
$u = -1.087640 + 0.641750I$ $a = 0.407992 + 0.494381I$ $b = 1.208320 - 0.234516I$	$-2.86642 + 11.98280I$	0
$u = -1.087640 - 0.641750I$ $a = 0.407992 - 0.494381I$ $b = 1.208320 + 0.234516I$	$-2.86642 - 11.98280I$	0
$u = 1.125380 + 0.581929I$ $a = -0.92584 - 1.90063I$ $b = 0.76579 - 1.28083I$	$-1.25157 - 8.73513I$	0
$u = 1.125380 - 0.581929I$ $a = -0.92584 + 1.90063I$ $b = 0.76579 + 1.28083I$	$-1.25157 + 8.73513I$	0
$u = 1.191700 + 0.443945I$ $a = 0.77619 + 1.89309I$ $b = -0.676231 + 1.109960I$	$-9.89645 - 6.02709I$	0
$u = 1.191700 - 0.443945I$ $a = 0.77619 - 1.89309I$ $b = -0.676231 - 1.109960I$	$-9.89645 + 6.02709I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.118980+0.628199I$ $a=\ \ 1.47398-1.28396I$ $b=-0.492230-1.151260I$	$-9.6419+11.0356I$	0
$u=-1.118980-0.628199I$ $a=\ \ 1.47398+1.28396I$ $b=-0.492230+1.151260I$	$-9.6419-11.0356I$	0
$u=\ \ 0.112650+0.704524I$ $a=-0.801716+0.426296I$ $b=\ \ 0.591868+0.193432I$	$-4.08336+2.59332I$	$2.00000-2.23007I$
$u=\ \ 0.112650-0.704524I$ $a=-0.801716-0.426296I$ $b=\ \ 0.591868-0.193432I$	$-4.08336-2.59332I$	$2.00000+2.23007I$
$u=-1.288370+0.074454I$ $a=-0.55662+1.75748I$ $b=-0.374415+1.190150I$	$-4.02845-5.42886I$	0
$u=-1.288370-0.074454I$ $a=-0.55662-1.75748I$ $b=-0.374415-1.190150I$	$-4.02845+5.42886I$	0
$u=-1.238070+0.440869I$ $a=-0.718371+1.175660I$ $b=-0.461351+1.153710I$	$-9.96725+2.99207I$	0
$u=-1.238070-0.440869I$ $a=-0.718371-1.175660I$ $b=-0.461351-1.153710I$	$-9.96725-2.99207I$	0
$u=\ \ 1.156230+0.650655I$ $a=\ \ 0.96670+1.81791I$ $b=-0.69953+1.32014I$	$-0.1242-14.1958I$	0
$u=\ \ 1.156230-0.650655I$ $a=\ \ 0.96670-1.81791I$ $b=-0.69953-1.32014I$	$-0.1242+14.1958I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.100400+0.808656I$ $a=-0.79489+1.44744I$ $b=\ \ 0.372924+1.181570I$	$-3.59894+4.41844I$	0
$u=-1.100400-0.808656I$ $a=-0.79489-1.44744I$ $b=\ \ 0.372924-1.181570I$	$-3.59894-4.41844I$	0
$u=\ \ 1.311970+0.395897I$ $a=\ \ 0.63820+1.49197I$ $b=-0.118096+0.629632I$	$-7.57692-6.34456I$	0
$u=\ \ 1.311970-0.395897I$ $a=\ \ 0.63820-1.49197I$ $b=-0.118096-0.629632I$	$-7.57692+6.34456I$	0
$u=-1.200440+0.664805I$ $a=\ \ 0.66096-1.72296I$ $b=-0.366155-1.172140I$	$0.29506+5.90638I$	0
$u=-1.200440-0.664805I$ $a=\ \ 0.66096+1.72296I$ $b=-0.366155+1.172140I$	$0.29506-5.90638I$	0
$u=\ \ 1.197960+0.684529I$ $a=-0.95716-1.76047I$ $b=\ \ 0.66234-1.31870I$	$-6.2890-18.5439I$	0
$u=\ \ 1.197960-0.684529I$ $a=-0.95716+1.76047I$ $b=\ \ 0.66234+1.31870I$	$-6.2890+18.5439I$	0
$u=-0.375554+0.491603I$ $a=-0.44352-1.47996I$ $b=-0.164307+1.122050I$	$-7.26393+3.63223I$	$-3.59178-4.48424I$
$u=-0.375554-0.491603I$ $a=-0.44352+1.47996I$ $b=-0.164307-1.122050I$	$-7.26393-3.63223I$	$-3.59178+4.48424I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.438985 + 0.364803I$ $a = 1.151000 - 0.065824I$ $b = -0.446406 - 0.067208I$	$1.072660 + 0.185704I$	$9.45528 + 0.32858I$
$u = 0.438985 - 0.364803I$ $a = 1.151000 + 0.065824I$ $b = -0.446406 + 0.067208I$	$1.072660 - 0.185704I$	$9.45528 - 0.32858I$
$u = 0.97402 + 1.04831I$ $a = 0.302499 + 0.657650I$ $b = -0.223604 + 0.665646I$	$-0.81230 - 5.39094I$	0
$u = 0.97402 - 1.04831I$ $a = 0.302499 - 0.657650I$ $b = -0.223604 - 0.665646I$	$-0.81230 + 5.39094I$	0
$u = -1.46449 + 0.07086I$ $a = 0.36127 - 1.60330I$ $b = 0.372089 - 1.170040I$	$-10.71760 - 8.47921I$	0
$u = -1.46449 - 0.07086I$ $a = 0.36127 + 1.60330I$ $b = 0.372089 + 1.170040I$	$-10.71760 + 8.47921I$	0
$u = -1.36352 + 0.60606I$ $a = -0.40077 + 1.69868I$ $b = 0.358112 + 1.174900I$	$-4.27800 + 7.57344I$	0
$u = -1.36352 - 0.60606I$ $a = -0.40077 - 1.69868I$ $b = 0.358112 - 1.174900I$	$-4.27800 - 7.57344I$	0
$u = 0.202630 + 0.146296I$ $a = -1.90423 - 0.57867I$ $b = -0.662293 + 0.765192I$	$1.33698 - 2.53000I$	$0.43929 + 6.27258I$
$u = 0.202630 - 0.146296I$ $a = -1.90423 + 0.57867I$ $b = -0.662293 - 0.765192I$	$1.33698 + 2.53000I$	$0.43929 - 6.27258I$

II. $I_2^u =$
$\langle 16u^{31}-6u^{30}+\cdots+b+17,\ -36u^{31}+35u^{30}+\cdots+a-60,\ u^{32}-8u^{30}+\cdots+3u+1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3+u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5-u^3+u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 36u^{31}-35u^{30}+\cdots+133u+60 \\ -16u^{31}+6u^{30}+\cdots-19u-17 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 11u^{31}-2u^{30}+\cdots-3u+19 \\ -u^{30}+7u^{28}+\cdots-u-1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -17u^{31}+10u^{30}+\cdots-70u-48 \\ 2u^{31}-16u^{29}+\cdots-5u+2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 52u^{31}-41u^{30}+\cdots+152u+77 \\ -16u^{31}+6u^{30}+\cdots-19u-17 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 49u^{31}-18u^{30}+\cdots+83u+76 \\ -2u^{31}+u^{30}+\cdots-12u-10 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 9u^{31}-16u^{30}+\cdots+38u-14 \\ -12u^{31}+11u^{30}+\cdots-41u-18 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -18u^{31}+10u^{30}+\cdots-68u-47 \\ 4u^{31}-u^{30}+\cdots+5u+10 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 47u^{31}-47u^{30}-352u^{29}+488u^{28}+1375u^{27}-2532u^{26}-3338u^{25}+8465u^{24}+5032u^{23}-20319u^{22}-3150u^{21}+36746u^{20}-5396u^{19}-51623u^{18}+19436u^{17}+57445u^{16}-32257u^{15}-51717u^{14}+36937u^{13}+38443u^{12}-31912u^{11}-24190u^{10}+21476u^9+13055u^8-11167u^7-6079u^6+4334u^5+2334u^4-1115u^3-657u^2+136u+94$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{32} - 16u^{31} + \cdots - 19u + 1$
c_2	$u^{32} - 8u^{30} + \cdots - 3u + 1$
c_3	$u^{32} + u^{31} + \cdots - 6u^2 + 1$
c_4	$u^{32} - 3u^{31} + \cdots + 14u^2 + 1$
c_5	$u^{32} + 10u^{30} + \cdots + 9u^2 + 1$
c_6	$u^{32} - 8u^{30} + \cdots + 3u + 1$
c_7	$u^{32} + 3u^{31} + \cdots + 14u^2 + 1$
c_8, c_9	$u^{32} + 4u^{31} + \cdots + 8u + 1$
c_{10}	$u^{32} + 10u^{30} + \cdots + 9u^2 + 1$
c_{11}	$u^{32} - 5u^{29} + \cdots - 13u^2 + 1$
c_{12}	$u^{32} - 4u^{31} + \cdots - 8u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{32} + 16y^{31} + \cdots + 5y + 1$
c_2, c_6	$y^{32} - 16y^{31} + \cdots - 19y + 1$
c_3	$y^{32} + 5y^{31} + \cdots - 12y + 1$
c_4, c_7	$y^{32} + 29y^{31} + \cdots + 28y + 1$
c_5, c_{10}	$y^{32} + 20y^{31} + \cdots + 18y + 1$
c_8, c_9, c_{12}	$y^{32} + 32y^{31} + \cdots + 8y + 1$
c_{11}	$y^{32} + 2y^{30} + \cdots - 26y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.799364 + 0.621442I$ $a = 0.270263 + 0.749470I$ $b = -0.963964 + 0.539754I$	$2.61587 - 4.09962I$	$3.37497 + 7.08178I$
$u = 0.799364 - 0.621442I$ $a = 0.270263 - 0.749470I$ $b = -0.963964 - 0.539754I$	$2.61587 + 4.09962I$	$3.37497 - 7.08178I$
$u = -0.973597 + 0.336591I$ $a = -0.74289 + 1.94395I$ $b = 0.834611 + 0.444535I$	$0.23277 + 4.18604I$	$12.9661 - 7.5620I$
$u = -0.973597 - 0.336591I$ $a = -0.74289 - 1.94395I$ $b = 0.834611 - 0.444535I$	$0.23277 - 4.18604I$	$12.9661 + 7.5620I$
$u = 0.940520 + 0.202717I$ $a = 0.99901 + 2.05172I$ $b = 0.05645 + 1.49783I$	$-4.90797 - 0.85667I$	$-3.51947 - 0.63009I$
$u = 0.940520 - 0.202717I$ $a = 0.99901 - 2.05172I$ $b = 0.05645 - 1.49783I$	$-4.90797 + 0.85667I$	$-3.51947 + 0.63009I$
$u = 0.645762 + 0.852646I$ $a = -0.101624 + 0.177841I$ $b = 0.257132 - 0.795305I$	$-0.45934 - 1.81704I$	$-2.19760 + 4.10930I$
$u = 0.645762 - 0.852646I$ $a = -0.101624 - 0.177841I$ $b = 0.257132 + 0.795305I$	$-0.45934 + 1.81704I$	$-2.19760 - 4.10930I$
$u = 0.926482 + 0.628109I$ $a = 0.586804 - 0.332494I$ $b = 0.918613 + 0.441511I$	$2.20837 - 0.80548I$	$4.64808 - 0.24139I$
$u = 0.926482 - 0.628109I$ $a = 0.586804 + 0.332494I$ $b = 0.918613 - 0.441511I$	$2.20837 + 0.80548I$	$4.64808 + 0.24139I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.129590 + 0.264881I$ $a = -0.65737 - 1.33966I$ $b = -0.175528 - 1.359080I$	$-10.21600 - 4.72575I$	$-5.95119 + 3.47032I$
$u = 1.129590 - 0.264881I$ $a = -0.65737 + 1.33966I$ $b = -0.175528 + 1.359080I$	$-10.21600 + 4.72575I$	$-5.95119 - 3.47032I$
$u = 0.823064 + 0.844548I$ $a = 0.1092650 + 0.0869349I$ $b = -0.130180 + 0.597168I$	$3.43388 - 3.16292I$	$-5.43895 + 5.56366I$
$u = 0.823064 - 0.844548I$ $a = 0.1092650 - 0.0869349I$ $b = -0.130180 - 0.597168I$	$3.43388 + 3.16292I$	$-5.43895 - 5.56366I$
$u = -0.749995 + 0.293485I$ $a = 0.963077 - 0.800051I$ $b = -0.702751 + 0.410304I$	$1.06877 - 1.40357I$	$8.13259 + 1.65695I$
$u = -0.749995 - 0.293485I$ $a = 0.963077 + 0.800051I$ $b = -0.702751 - 0.410304I$	$1.06877 + 1.40357I$	$8.13259 - 1.65695I$
$u = -0.659503 + 0.424875I$ $a = 0.449378 + 0.555146I$ $b = -0.678240 + 0.898249I$	$1.33141 - 1.54920I$	$-0.563057 - 0.147602I$
$u = -0.659503 - 0.424875I$ $a = 0.449378 - 0.555146I$ $b = -0.678240 - 0.898249I$	$1.33141 + 1.54920I$	$-0.563057 + 0.147602I$
$u = 0.752664 + 0.178288I$ $a = -1.77179 - 3.15136I$ $b = 0.07963 - 1.45633I$	$-8.65925 + 2.84995I$	$-10.42345 - 3.94968I$
$u = 0.752664 - 0.178288I$ $a = -1.77179 + 3.15136I$ $b = 0.07963 + 1.45633I$	$-8.65925 - 2.84995I$	$-10.42345 + 3.94968I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.113210+0.570439I$ $a=-0.79881+1.94520I$ $b=\ \ 0.434018+1.138410I$	$-0.42634+5.66768I$	$-2.11222-5.09717I$
$u=-1.113210-0.570439I$ $a=-0.79881-1.94520I$ $b=\ \ 0.434018-1.138410I$	$-0.42634-5.66768I$	$-2.11222+5.09717I$
$u=-0.526711+0.503320I$ $a=-0.19681-2.09401I$ $b=\ \ 0.413241-1.009310I$	$-1.40689-1.05815I$	$0.90848+1.60867I$
$u=-0.526711-0.503320I$ $a=-0.19681+2.09401I$ $b=\ \ 0.413241+1.009310I$	$-1.40689+1.05815I$	$0.90848-1.60867I$
$u=-1.260100+0.368155I$ $a=\ \ 0.57150-2.08479I$ $b=-0.316783-0.812488I$	$-7.90343+6.97806I$	$-5.03401-10.89750I$
$u=-1.260100-0.368155I$ $a=\ \ 0.57150+2.08479I$ $b=-0.316783+0.812488I$	$-7.90343-6.97806I$	$-5.03401+10.89750I$
$u=\ \ 0.950662+0.926013I$ $a=-0.095860-0.202740I$ $b=-0.045675-0.714187I$	$-1.32394-4.81604I$	$-5.39721+1.34547I$
$u=\ \ 0.950662-0.926013I$ $a=-0.095860+0.202740I$ $b=-0.045675+0.714187I$	$-1.32394+4.81604I$	$-5.39721-1.34547I$
$u=-1.122920+0.707491I$ $a=\ \ 0.81365-1.77592I$ $b=-0.248178-1.196480I$	$-3.52189+6.15007I$	$-1.60004-5.17769I$
$u=-1.122920-0.707491I$ $a=\ \ 0.81365+1.77592I$ $b=-0.248178+1.196480I$	$-3.52189-6.15007I$	$-1.60004+5.17769I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.562070+0.181783I$		
$a=-2.89780+1.47590I$	$-4.96470-4.51412I$	$2.20695+6.21601I$
$b=\ \ 0.267610-0.604602I$		
$u=-0.562070-0.181783I$		
$a=-2.89780-1.47590I$	$-4.96470+4.51412I$	$2.20695-6.21601I$
$b=\ \ 0.267610+0.604602I$		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{32}-16u^{31}+\cdots-19u+1)$ $\cdot(u^{130}+59u^{129}+\cdots+2798166u+78961)$
c_2	$(u^{32}-8u^{30}+\cdots-3u+1)(u^{130}-u^{129}+\cdots-2132u+281)$
c_3	$(u^{32}+u^{31}+\cdots-6u^2+1)(u^{130}+17u^{128}+\cdots+693261u+67289)$
c_4	$(u^{32}-3u^{31}+\cdots+14u^2+1)(u^{130}-4u^{129}+\cdots-77445u+8257)$
c_5	$(u^{32}+10u^{30}+\cdots+9u^2+1)(u^{130}+u^{129}+\cdots+u+1)$
c_6	$(u^{32}-8u^{30}+\cdots+3u+1)(u^{130}-u^{129}+\cdots-2132u+281)$
c_7	$(u^{32}+3u^{31}+\cdots+14u^2+1)(u^{130}-4u^{129}+\cdots-77445u+8257)$
c_8, c_9	$(u^{32}+4u^{31}+\cdots+8u+1)(u^{130}+3u^{129}+\cdots+167u+49)$
c_{10}	$(u^{32}+10u^{30}+\cdots+9u^2+1)(u^{130}+u^{129}+\cdots+u+1)$
c_{11}	$(u^{32}-5u^{29}+\cdots-13u^2+1)(u^{130}-5u^{129}+\cdots+300381u+21815)$
c_{12}	$(u^{32}-4u^{31}+\cdots-8u+1)(u^{130}+3u^{129}+\cdots+167u+49)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{32}+16y^{31}+\cdots+5y+1)$ $\cdot(y^{130}+41y^{129}+\cdots+2849686224134y+6234839521)$
c_2, c_6	$(y^{32}-16y^{31}+\cdots-19y+1)$ $\cdot(y^{130}-59y^{129}+\cdots-2798166y+78961)$
c_3	$(y^{32}+5y^{31}+\cdots-12y+1)$ $\cdot(y^{130}+34y^{129}+\cdots+179177883001y+4527809521)$
c_4, c_7	$(y^{32}+29y^{31}+\cdots+28y+1)$ $\cdot(y^{130}+82y^{129}+\cdots+573275145y+68178049)$
c_5, c_{10}	$(y^{32}+20y^{31}+\cdots+18y+1)(y^{130}+73y^{129}+\cdots+39y+1)$
c_8, c_9, c_{12}	$(y^{32}+32y^{31}+\cdots+8y+1)(y^{130}+125y^{129}+\cdots-124811y+2401)$
c_{11}	$(y^{32}+2y^{30}+\cdots-26y+1)$ $\cdot(y^{130}+25y^{129}+\cdots+54768666299y+475894225)$