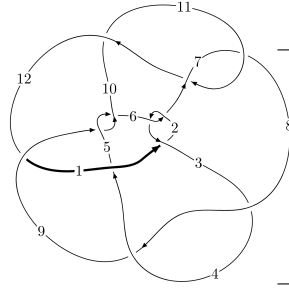
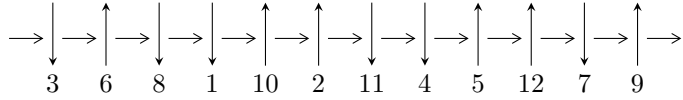


12a₀₃₄₁ (K12a₀₃₄₁)



A knot diagram¹

Linearized knot diagram



Solving Sequence

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

Ideals for irreducible components² of X_{par}

$$I_1^u = \langle -3.44332 \times 10^{1136} u^{137} + 2.78439 \times 10^{1137} u^{136} + \dots + 3.44849 \times 10^{1135} b - 1.92073 \times 10^{1137}, \\ 2.22539 \times 10^{1128} u^{137} - 1.98801 \times 10^{1129} u^{136} + \dots + 1.86692 \times 10^{1126} a - 8.75584 \times 10^{1128}, \\ u^{138} - 9u^{137} + \dots - 21u + 1 \rangle$$

$$I_2^u = \langle 3.23979 \times 10^{24} u^{23} + 6.24896 \times 10^{24} u^{22} + \dots + 1.91625 \times 10^{23} b + 4.39693 \times 10^{24}, \\ - 2.23743 \times 10^{23} u^{23} - 5.98054 \times 10^{23} u^{22} + \dots + 3.83250 \times 10^{22} a - 1.44899 \times 10^{24}, u^{24} + 2u^{23} + \dots + 8u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 162 representations.

¹The 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>).

²All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

$$\mathbf{I. } I_1^u = \langle -3.44 \times 10^{1136} u^{137} + 2.78 \times 10^{1137} u^{136} + \dots + 3.45 \times 10^{1135} b - 1.92 \times 10^{1137}, 2.23 \times 10^{1128} u^{137} - 1.99 \times 10^{1129} u^{136} + \dots + 1.87 \times 10^{1126} a - 8.76 \times 10^{1128}, u^{138} - 9u^{137} + \dots - 21u + 1 \rangle$$

(i) Arc colorings

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

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} -119.202u^{137} + 1064.86u^{136} + \dots - 9035.27u + 469.000 \\ 9.98502u^{137} - 80.7423u^{136} + \dots - 866.225u + 55.6977 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -116.038u^{137} + 1042.02u^{136} + \dots - 9853.74u + 516.748 \\ 11.4932u^{137} - 94.3477u^{136} + \dots - 751.165u + 50.0679 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 95.7599u^{137} - 842.835u^{136} + \dots + 3790.34u - 177.458 \\ -32.9935u^{137} + 288.022u^{136} + \dots - 1420.01u + 64.6705 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -109.217u^{137} + 984.122u^{136} + \dots - 9901.49u + 524.698 \\ 9.98502u^{137} - 80.7423u^{136} + \dots - 866.225u + 55.6977 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 52.6470u^{137} - 472.308u^{136} + \dots + 3609.65u - 185.644 \\ -36.0962u^{137} + 312.652u^{136} + \dots - 1130.23u + 45.1931 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -57.1454u^{137} + 472.524u^{136} + \dots + 2358.87u - 140.762 \\ -36.5184u^{137} + 320.362u^{136} + \dots - 1901.53u + 95.6758 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -30.2955u^{137} + 235.144u^{136} + \dots + 2935.64u - 137.588 \\ 13.7296u^{137} - 126.491u^{136} + \dots + 1632.77u - 88.7432 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -118.423u^{137} + 1126.56u^{136} + \dots - 20434.1u + 1062.67 \\ -20.6474u^{137} + 188.411u^{136} + \dots - 2651.47u + 143.008 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 28.2171u^{137} - 216.230u^{136} + \dots - 3099.08u + 146.223 \\ -18.2326u^{137} + 166.131u^{136} + \dots - 1907.86u + 102.850 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes = $113.971u^{137} - 1017.23u^{136} + \dots + 8375.14u - 424.668$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{138} + 61u^{137} + \dots + 607299u + 14641$
c_2, c_6	$u^{138} - u^{137} + \dots + 1529u + 121$
c_3, c_8	$u^{138} - u^{137} + \dots - 77095u + 4463$
c_4	$u^{138} - 9u^{137} + \dots - 21u + 1$
c_5, c_9	$u^{138} + u^{137} + \dots + 77095u + 4463$
c_7, c_{11}	$u^{138} + u^{137} + \dots - 1529u + 121$
c_{10}	$u^{138} - 61u^{137} + \dots - 607299u + 14641$
c_{12}	$u^{138} + 9u^{137} + \dots + 21u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$y^{138} + 45y^{137} + \dots + 6338026514699y + 214358881$
c_2, c_6, c_7 c_{11}	$y^{138} + 61y^{137} + \dots + 607299y + 14641$
c_3, c_5, c_8 c_9	$y^{138} - 81y^{137} + \dots - 4595134649y + 19918369$
c_4, c_{12}	$y^{138} + 15y^{137} + \dots + 45y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.272105 + 0.972282I$ $a = -1.93427 + 1.29974I$ $b = 0.992143 - 0.175684I$	$4.46651 + 5.76707I$	0
$u = -0.272105 - 0.972282I$ $a = -1.93427 - 1.29974I$ $b = 0.992143 + 0.175684I$	$4.46651 - 5.76707I$	0
$u = -0.373903 + 0.940772I$ $a = -1.02386 + 1.70217I$ $b = 0.883629 - 0.470800I$	$3.88225 + 0.20824I$	0
$u = -0.373903 - 0.940772I$ $a = -1.02386 - 1.70217I$ $b = 0.883629 + 0.470800I$	$3.88225 - 0.20824I$	0
$u = 0.752554 + 0.639394I$ $a = -0.290394 - 1.355470I$ $b = 1.43199 + 0.31863I$	$-8.15626 - 5.13625I$	0
$u = 0.752554 - 0.639394I$ $a = -0.290394 + 1.355470I$ $b = 1.43199 - 0.31863I$	$-8.15626 + 5.13625I$	0
$u = -0.077192 + 1.013360I$ $a = 1.63409 + 0.46381I$ $b = -0.553011 - 0.498638I$	$2.01182 + 6.13132I$	0
$u = -0.077192 - 1.013360I$ $a = 1.63409 - 0.46381I$ $b = -0.553011 + 0.498638I$	$2.01182 - 6.13132I$	0
$u = -0.239308 + 0.990831I$ $a = 2.06293 - 0.80865I$ $b = -0.935928 - 0.016428I$	$3.99322 + 2.29700I$	0
$u = -0.239308 - 0.990831I$ $a = 2.06293 + 0.80865I$ $b = -0.935928 + 0.016428I$	$3.99322 - 2.29700I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.060247 + 1.023100I$ $a = -1.142720 - 0.824417I$ $b = 0.295496 + 0.676979I$	$1.216640 + 0.681103I$	0
$u = 0.060247 - 1.023100I$ $a = -1.142720 + 0.824417I$ $b = 0.295496 - 0.676979I$	$1.216640 - 0.681103I$	0
$u = 0.488193 + 0.911199I$ $a = -0.191286 - 1.198690I$ $b = -0.093001 + 0.984414I$	$3.67051 - 2.44046I$	0
$u = 0.488193 - 0.911199I$ $a = -0.191286 + 1.198690I$ $b = -0.093001 - 0.984414I$	$3.67051 + 2.44046I$	0
$u = 0.883420 + 0.600790I$ $a = 0.190118 + 1.145700I$ $b = -1.400590 - 0.186122I$	$-8.71911 + 0.66760I$	0
$u = 0.883420 - 0.600790I$ $a = 0.190118 - 1.145700I$ $b = -1.400590 + 0.186122I$	$-8.71911 - 0.66760I$	0
$u = -0.664902 + 0.647465I$ $a = -0.504665 - 1.102610I$ $b = -0.877971 + 0.440649I$	$1.67557 + 2.74433I$	0
$u = -0.664902 - 0.647465I$ $a = -0.504665 + 1.102610I$ $b = -0.877971 - 0.440649I$	$1.67557 - 2.74433I$	0
$u = 0.967854 + 0.469102I$ $a = 1.236110 - 0.669379I$ $b = 1.042350 + 0.396913I$	$-1.11652 - 7.36017I$	0
$u = 0.967854 - 0.469102I$ $a = 1.236110 + 0.669379I$ $b = 1.042350 - 0.396913I$	$-1.11652 + 7.36017I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.600530 + 0.895121I$	$6.14091 - 7.61368I$	0
$a = 0.011810 + 1.220600I$		
$b = 0.109514 - 1.079390I$		
$u = 0.600530 - 0.895121I$	$6.14091 + 7.61368I$	0
$a = 0.011810 - 1.220600I$		
$b = 0.109514 + 1.079390I$		
$u = 0.912532 + 0.053594I$	$-0.945343 - 0.366206I$	0
$a = 0.876109 - 0.975755I$		
$b = 0.955013 - 0.000219I$		
$u = 0.912532 - 0.053594I$	$-0.945343 + 0.366206I$	0
$a = 0.876109 + 0.975755I$		
$b = 0.955013 + 0.000219I$		
$u = -1.049450 + 0.406371I$	$-1.67557 + 2.74433I$	0
$a = -0.343211 - 0.749855I$		
$b = -0.0829223 + 0.0313636I$		
$u = -1.049450 - 0.406371I$	$-1.67557 - 2.74433I$	0
$a = -0.343211 + 0.749855I$		
$b = -0.0829223 - 0.0313636I$		
$u = -0.439694 + 1.049030I$	$2.23111 + 4.47872I$	0
$a = 0.710302 - 1.151910I$		
$b = -0.661466 + 0.591574I$		
$u = -0.439694 - 1.049030I$	$2.23111 - 4.47872I$	0
$a = 0.710302 + 1.151910I$		
$b = -0.661466 - 0.591574I$		
$u = 0.111958 + 0.849954I$	$2.23634 + 1.17797I$	0
$a = 0.535172 - 0.785736I$		
$b = -0.679053 + 0.478295I$		
$u = 0.111958 - 0.849954I$	$2.23634 - 1.17797I$	0
$a = 0.535172 + 0.785736I$		
$b = -0.679053 - 0.478295I$		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.938248 + 0.680040I$ $a = -0.77268 + 1.39820I$ $b = -1.167130 - 0.459804I$	$-2.08901 - 4.73737I$	0
$u = 0.938248 - 0.680040I$ $a = -0.77268 - 1.39820I$ $b = -1.167130 + 0.459804I$	$-2.08901 + 4.73737I$	0
$u = -0.727757 + 0.366902I$ $a = 0.592142 - 0.869379I$ $b = 0.448681 - 0.181342I$	$-2.23634 + 1.17797I$	0
$u = -0.727757 - 0.366902I$ $a = 0.592142 + 0.869379I$ $b = 0.448681 + 0.181342I$	$-2.23634 - 1.17797I$	0
$u = -0.727682 + 0.942031I$ $a = -0.573229 - 0.196405I$ $b = 0.480323 + 0.508966I$	$0.55047 + 3.64176I$	0
$u = -0.727682 - 0.942031I$ $a = -0.573229 + 0.196405I$ $b = 0.480323 - 0.508966I$	$0.55047 - 3.64176I$	0
$u = -0.851773 + 0.843453I$ $a = 0.509465 + 0.567410I$ $b = -0.132538 - 0.723809I$	$0.945343 + 0.366206I$	0
$u = -0.851773 - 0.843453I$ $a = 0.509465 - 0.567410I$ $b = -0.132538 + 0.723809I$	$0.945343 - 0.366206I$	0
$u = -0.593004 + 1.056020I$ $a = 0.180572 - 1.042790I$ $b = -0.139227 + 1.159900I$	$2.42938 + 7.47182I$	0
$u = -0.593004 - 1.056020I$ $a = 0.180572 + 1.042790I$ $b = -0.139227 - 1.159900I$	$2.42938 - 7.47182I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.641815 + 1.029010I$		
$a = -0.050692 + 1.059620I$	$4.39065 + 13.04350I$	0
$b = 0.000038 - 1.294560I$		
$u = -0.641815 - 1.029010I$		
$a = -0.050692 - 1.059620I$	$4.39065 - 13.04350I$	0
$b = 0.000038 + 1.294560I$		
$u = -1.132200 + 0.448698I$		
$a = 0.067608 + 0.361482I$	$-2.16239 + 0.31280I$	0
$b = 1.073610 - 0.102452I$		
$u = -1.132200 - 0.448698I$		
$a = 0.067608 - 0.361482I$	$-2.16239 - 0.31280I$	0
$b = 1.073610 + 0.102452I$		
$u = 0.520373 + 1.126360I$		
$a = 0.140955 + 0.849436I$	$8.71911 + 0.66760I$	0
$b = 0.264174 - 0.868535I$		
$u = 0.520373 - 1.126360I$		
$a = 0.140955 - 0.849436I$	$8.71911 - 0.66760I$	0
$b = 0.264174 + 0.868535I$		
$u = -0.998861 + 0.759491I$		
$a = -0.129822 + 0.813527I$	$-3.67051 + 2.44046I$	0
$b = 1.272690 - 0.445031I$		
$u = -0.998861 - 0.759491I$		
$a = -0.129822 - 0.813527I$	$-3.67051 - 2.44046I$	0
$b = 1.272690 + 0.445031I$		
$u = -0.291302 + 0.679963I$		
$a = -0.051473 + 0.427774I$	$-0.05605 + 1.78094I$	0
$b = 0.291428 - 0.679082I$		
$u = -0.291302 - 0.679963I$		
$a = -0.051473 - 0.427774I$	$-0.05605 - 1.78094I$	0
$b = 0.291428 + 0.679082I$		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.086430 + 0.662833I$		
$a = 0.299139 - 0.999413I$	$-0.74320 - 6.11734I$	0
$b = 1.128700 + 0.551194I$		
$u = 1.086430 - 0.662833I$		
$a = 0.299139 + 0.999413I$	$-0.74320 + 6.11734I$	0
$b = 1.128700 - 0.551194I$		
$u = -0.602148 + 0.397079I$		
$a = -1.56122 + 0.53492I$	$-0.55047 - 3.64176I$	0
$b = -0.544434 + 0.347223I$		
$u = -0.602148 - 0.397079I$		
$a = -1.56122 - 0.53492I$	$-0.55047 + 3.64176I$	0
$b = -0.544434 - 0.347223I$		
$u = -0.994126 + 0.809066I$		
$a = 0.161223 - 0.931048I$	$-2.42938 + 7.47182I$	0
$b = -1.30468 + 0.58986I$		
$u = -0.994126 - 0.809066I$		
$a = 0.161223 + 0.931048I$	$-2.42938 - 7.47182I$	0
$b = -1.30468 - 0.58986I$		
$u = 1.057830 + 0.732243I$		
$a = -0.045045 - 0.941580I$	$-4.39065 - 13.04350I$	0
$b = 1.43238 + 0.67601I$		
$u = 1.057830 - 0.732243I$		
$a = -0.045045 + 0.941580I$	$-4.39065 + 13.04350I$	0
$b = 1.43238 - 0.67601I$		
$u = -0.698312 + 0.116861I$		
$a = 0.273726 + 0.345184I$	$1.11025 + 3.10329I$	0
$b = -1.181700 - 0.509825I$		
$u = -0.698312 - 0.116861I$		
$a = 0.273726 - 0.345184I$	$1.11025 - 3.10329I$	0
$b = -1.181700 + 0.509825I$		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.951156 + 0.881801I$ $a = -0.05261 + 1.52270I$ $b = -1.314470 - 0.312706I$	$-4.75617 - 9.62715I$	0
$u = 0.951156 - 0.881801I$ $a = -0.05261 - 1.52270I$ $b = -1.314470 + 0.312706I$	$-4.75617 + 9.62715I$	0
$u = 1.085490 + 0.743576I$ $a = 0.007926 + 0.819196I$ $b = -1.42697 - 0.55428I$	$-6.14091 - 7.61368I$	0
$u = 1.085490 - 0.743576I$ $a = 0.007926 - 0.819196I$ $b = -1.42697 + 0.55428I$	$-6.14091 + 7.61368I$	0
$u = -0.971836 + 0.903292I$ $a = -0.073011 - 0.997331I$ $b = -0.880200 + 0.799810I$	$2.77105I$	0
$u = -0.971836 - 0.903292I$ $a = -0.073011 + 0.997331I$ $b = -0.880200 - 0.799810I$	$-2.77105I$	0
$u = -0.987437 + 0.887515I$ $a = 0.274865 + 0.918316I$ $b = 0.532355 - 0.860913I$	$0.74320 + 6.11734I$	0
$u = -0.987437 - 0.887515I$ $a = 0.274865 - 0.918316I$ $b = 0.532355 + 0.860913I$	$0.74320 - 6.11734I$	0
$u = -0.648145 + 1.205740I$ $a = -0.151118 + 0.705374I$ $b = -0.173279 - 0.811593I$	$8.15626 + 5.13625I$	0
$u = -0.648145 - 1.205740I$ $a = -0.151118 - 0.705374I$ $b = -0.173279 + 0.811593I$	$8.15626 - 5.13625I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.024050 + 0.930465I$ $a = -0.028357 - 1.275540I$ $b = 1.260970 + 0.226165I$	$-5.93710 - 4.34590I$	0
$u = 1.024050 - 0.930465I$ $a = -0.028357 + 1.275540I$ $b = 1.260970 - 0.226165I$	$-5.93710 + 4.34590I$	0
$u = 0.436460 + 0.425557I$ $a = -1.60395 + 1.88000I$ $b = 0.456253 - 0.433194I$	$4.93848 + 3.64554I$	0
$u = 0.436460 - 0.425557I$ $a = -1.60395 - 1.88000I$ $b = 0.456253 + 0.433194I$	$4.93848 - 3.64554I$	0
$u = -0.77462 + 1.21878I$ $a = -0.575541 + 0.415227I$ $b = 0.998111 + 0.042104I$	$-1.216640 - 0.681103I$	0
$u = -0.77462 - 1.21878I$ $a = -0.575541 - 0.415227I$ $b = 0.998111 - 0.042104I$	$-1.216640 + 0.681103I$	0
$u = 0.194293 + 0.483947I$ $a = -0.204689 + 0.649331I$ $b = 1.09528 - 1.37945I$	$-0.444360 + 0.758531I$	$14.6583 + 7.5400I$
$u = 0.194293 - 0.483947I$ $a = -0.204689 - 0.649331I$ $b = 1.09528 + 1.37945I$	$-0.444360 - 0.758531I$	$14.6583 - 7.5400I$
$u = 1.50011 + 0.13797I$ $a = -0.262639 + 0.307841I$ $b = -1.169710 + 0.144965I$	$-4.93848 + 3.64554I$	0
$u = 1.50011 - 0.13797I$ $a = -0.262639 - 0.307841I$ $b = -1.169710 - 0.144965I$	$-4.93848 - 3.64554I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.486377 + 0.050195I$ $a = -0.227084 - 0.673388I$ $b = 1.17421 + 1.25375I$	$0.846297 + 0.024641I$	$-15.5429 - 7.8844I$
$u = -0.486377 - 0.050195I$ $a = -0.227084 + 0.673388I$ $b = 1.17421 - 1.25375I$	$0.846297 - 0.024641I$	$-15.5429 + 7.8844I$
$u = -1.51038 + 0.06800I$ $a = 0.625551 + 0.338750I$ $b = 0.451371 + 0.245792I$	$1.11652 + 7.36017I$	0
$u = -1.51038 - 0.06800I$ $a = 0.625551 - 0.338750I$ $b = 0.451371 - 0.245792I$	$1.11652 - 7.36017I$	0
$u = -0.89607 + 1.25161I$ $a = 0.387843 - 0.628970I$ $b = -1.045510 + 0.201901I$	$-2.23111 + 4.47872I$	0
$u = -0.89607 - 1.25161I$ $a = 0.387843 + 0.628970I$ $b = -1.045510 - 0.201901I$	$-2.23111 - 4.47872I$	0
$u = 0.238742 + 0.378933I$ $a = 0.49991 - 2.67289I$ $b = -0.633279 + 0.424355I$	$2.16239 - 0.31280I$	$3.87060 + 0.I$
$u = 0.238742 - 0.378933I$ $a = 0.49991 + 2.67289I$ $b = -0.633279 - 0.424355I$	$2.16239 + 0.31280I$	$3.87060 + 0.I$
$u = -1.02413 + 1.19332I$ $a = -0.156612 + 1.088080I$ $b = 1.30906 - 0.55402I$	$2.37368 + 13.37220I$	0
$u = -1.02413 - 1.19332I$ $a = -0.156612 - 1.088080I$ $b = 1.30906 + 0.55402I$	$2.37368 - 13.37220I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00813 + 1.23712I$ $a = 0.201878 - 0.979411I$ $b = -1.273390 + 0.502557I$	$7.71222I$	0
$u = -1.00813 - 1.23712I$ $a = 0.201878 + 0.979411I$ $b = -1.273390 - 0.502557I$	$-7.71222I$	0
$u = 0.277315 + 0.283202I$ $a = 0.104752 - 0.888653I$ $b = -1.22541 + 1.68513I$	$0.31243 + 4.65765I$	$-0.5140 + 24.9918I$
$u = 0.277315 - 0.283202I$ $a = 0.104752 + 0.888653I$ $b = -1.22541 - 1.68513I$	$0.31243 - 4.65765I$	$-0.5140 - 24.9918I$
$u = 0.354011 + 0.027102I$ $a = -0.44159 + 1.40084I$ $b = -1.17718 - 1.21340I$	$0.444360 + 0.758531I$	$-14.6583 + 7.5400I$
$u = 0.354011 - 0.027102I$ $a = -0.44159 - 1.40084I$ $b = -1.17718 + 1.21340I$	$0.444360 - 0.758531I$	$-14.6583 - 7.5400I$
$u = -0.280718 + 0.216771I$ $a = 0.130829 + 1.109880I$ $b = 1.36464 - 1.66574I$	$-0.31243 - 4.65765I$	$0.5140 - 24.9918I$
$u = -0.280718 - 0.216771I$ $a = 0.130829 - 1.109880I$ $b = 1.36464 + 1.66574I$	$-0.31243 + 4.65765I$	$0.5140 + 24.9918I$
$u = -0.144249 + 0.316122I$ $a = -0.449654 - 1.333390I$ $b = -1.26024 + 1.40027I$	$-0.846297 + 0.024641I$	$15.5429 - 7.8844I$
$u = -0.144249 - 0.316122I$ $a = -0.449654 + 1.333390I$ $b = -1.26024 - 1.40027I$	$-0.846297 - 0.024641I$	$15.5429 + 7.8844I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.249069 + 0.221274I$ $a = -1.43089 + 5.48760I$ $b = 0.666087 - 0.201597I$	$5.28142 - 3.87461I$	$7.78917 + 1.22770I$
$u = 0.249069 - 0.221274I$ $a = -1.43089 - 5.48760I$ $b = 0.666087 + 0.201597I$	$5.28142 + 3.87461I$	$7.78917 - 1.22770I$
$u = 1.13993 + 1.22922I$ $a = 0.075276 + 0.997163I$ $b = -1.40521 - 0.60727I$	$-19.6086I$	0
$u = 1.13993 - 1.22922I$ $a = 0.075276 - 0.997163I$ $b = -1.40521 + 0.60727I$	$19.6086I$	0
$u = 0.275876 + 0.159611I$ $a = -0.27727 - 2.30432I$ $b = -0.102535 + 0.537992I$	$0.05605 - 1.78094I$	$-0.01856 + 2.95154I$
$u = 0.275876 - 0.159611I$ $a = -0.27727 + 2.30432I$ $b = -0.102535 - 0.537992I$	$0.05605 + 1.78094I$	$-0.01856 - 2.95154I$
$u = 0.231485 + 0.209058I$ $a = 1.41039 - 1.77858I$ $b = 1.36778 + 0.62876I$	$-1.11025 - 3.10329I$	$2.30522 + 6.70707I$
$u = 0.231485 - 0.209058I$ $a = 1.41039 + 1.77858I$ $b = 1.36778 - 0.62876I$	$-1.11025 + 3.10329I$	$2.30522 - 6.70707I$
$u = 0.099745 + 0.272426I$ $a = 4.23217 - 4.46581I$ $b = 1.053940 + 0.392703I$	$-0.95266 - 4.76806I$	$0.06588 + 5.12711I$
$u = 0.099745 - 0.272426I$ $a = 4.23217 + 4.46581I$ $b = 1.053940 - 0.392703I$	$-0.95266 + 4.76806I$	$0.06588 - 5.12711I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.66367 + 1.58003I$ $a = -0.143463 + 0.008026I$ $b = 1.299960 - 0.196269I$	$-3.43891 + 2.81616I$	0
$u = 0.66367 - 1.58003I$ $a = -0.143463 - 0.008026I$ $b = 1.299960 + 0.196269I$	$-3.43891 - 2.81616I$	0
$u = 0.59614 + 1.62012I$ $a = 0.566338 + 0.160746I$ $b = -1.042740 + 0.230532I$	$-2.01182 + 6.13132I$	0
$u = 0.59614 - 1.62012I$ $a = 0.566338 - 0.160746I$ $b = -1.042740 - 0.230532I$	$-2.01182 - 6.13132I$	0
$u = 1.13804 + 1.30123I$ $a = -0.129597 - 0.900394I$ $b = 1.40922 + 0.52861I$	$-2.37368 - 13.37220I$	0
$u = 1.13804 - 1.30123I$ $a = -0.129597 + 0.900394I$ $b = 1.40922 - 0.52861I$	$-2.37368 + 13.37220I$	0
$u = 0.066659 + 0.257288I$ $a = -6.18103 + 6.58510I$ $b = -0.947872 - 0.366307I$	$0.93987 - 9.73689I$	$3.92710 + 12.05743I$
$u = 0.066659 - 0.257288I$ $a = -6.18103 - 6.58510I$ $b = -0.947872 + 0.366307I$	$0.93987 + 9.73689I$	$3.92710 - 12.05743I$
$u = 0.107893 + 0.221349I$ $a = -6.94870 - 0.38873I$ $b = -1.021830 - 0.121107I$	$3.43891 - 2.81616I$	$2.08219 + 3.38759I$
$u = 0.107893 - 0.221349I$ $a = -6.94870 + 0.38873I$ $b = -1.021830 + 0.121107I$	$3.43891 + 2.81616I$	$2.08219 - 3.38759I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.15781 + 1.33260I$		
$a = -0.017420 + 0.783594I$	$5.93710 + 4.34590I$	0
$b = 1.164610 - 0.513507I$		
$u = -1.15781 - 1.33260I$		
$a = -0.017420 - 0.783594I$	$5.93710 - 4.34590I$	0
$b = 1.164610 + 0.513507I$		
$u = -1.63874 + 0.70751I$		
$a = 0.111800 - 0.117972I$	$0.95266 - 4.76806I$	0
$b = -1.083230 - 0.124303I$		
$u = -1.63874 - 0.70751I$		
$a = 0.111800 + 0.117972I$	$0.95266 + 4.76806I$	0
$b = -1.083230 + 0.124303I$		
$u = 1.67580 + 0.78640I$		
$a = -0.302776 + 0.547884I$	$2.08901 - 4.73737I$	0
$b = -0.939973 - 0.058035I$		
$u = 1.67580 - 0.78640I$		
$a = -0.302776 - 0.547884I$	$2.08901 + 4.73737I$	0
$b = -0.939973 + 0.058035I$		
$u = 1.57066 + 1.05017I$		
$a = -0.044491 + 0.170628I$	$-5.28142 - 3.87461I$	0
$b = -1.289670 - 0.115617I$		
$u = 1.57066 - 1.05017I$		
$a = -0.044491 - 0.170628I$	$-5.28142 + 3.87461I$	0
$b = -1.289670 + 0.115617I$		
$u = 1.39276 + 1.40193I$		
$a = -0.022664 + 0.655944I$	$4.75617 - 9.62715I$	0
$b = -1.246490 - 0.418023I$		
$u = 1.39276 - 1.40193I$		
$a = -0.022664 - 0.655944I$	$4.75617 + 9.62715I$	0
$b = -1.246490 + 0.418023I$		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.21853 + 1.59967I$ $a = -0.259489 - 0.431401I$ $b = 1.076910 - 0.077439I$	$-3.88225 - 0.20824I$	0
$u = 1.21853 - 1.59967I$ $a = -0.259489 + 0.431401I$ $b = 1.076910 + 0.077439I$	$-3.88225 + 0.20824I$	0
$u = -0.30756 + 2.23753I$ $a = 0.420183 - 0.164709I$ $b = -1.354690 + 0.214286I$	$-3.99322 + 2.29700I$	0
$u = -0.30756 - 2.23753I$ $a = 0.420183 + 0.164709I$ $b = -1.354690 - 0.214286I$	$-3.99322 - 2.29700I$	0
$u = 0.73739 + 2.23432I$ $a = -0.356171 - 0.239331I$ $b = 1.380890 + 0.066703I$	$-4.46651 - 5.76707I$	0
$u = 0.73739 - 2.23432I$ $a = -0.356171 + 0.239331I$ $b = 1.380890 - 0.066703I$	$-4.46651 + 5.76707I$	0
$u = 2.10629 + 1.15135I$ $a = -0.0757770 - 0.0807308I$ $b = 1.103700 - 0.252363I$	$-0.93987 + 9.73689I$	0
$u = 2.10629 - 1.15135I$ $a = -0.0757770 + 0.0807308I$ $b = 1.103700 + 0.252363I$	$-0.93987 - 9.73689I$	0

II.

$$I_2^u = \langle 3.24 \times 10^{24} u^{23} + 6.25 \times 10^{24} u^{22} + \dots + 1.92 \times 10^{23} b + 4.40 \times 10^{24}, -2.24 \times 10^{23} u^{23} - 5.98 \times 10^{23} u^{22} + \dots + 3.83 \times 10^{22} a - 1.45 \times 10^{24}, u^{24} + 2u^{23} + \dots + 8u + 1 \rangle$$

(i) Arc colorings

$$\begin{aligned} a_1 &= \begin{pmatrix} 0 \\ u \end{pmatrix} \\ a_4 &= \begin{pmatrix} 1 \\ 0 \end{pmatrix} \\ a_5 &= \begin{pmatrix} 1 \\ u^2 \end{pmatrix} \\ a_9 &= \begin{pmatrix} 5.83803u^{23} + 15.6048u^{22} + \dots + 244.212u + 37.8079 \\ -16.9069u^{23} - 32.6103u^{22} + \dots - 206.366u - 22.9455 \end{pmatrix} \\ a_{10} &= \begin{pmatrix} -8.68561u^{23} - 12.6882u^{22} + \dots + 75.1136u + 18.7911 \\ -12.7367u^{23} - 26.7320u^{22} + \dots - 197.877u - 23.6998 \end{pmatrix} \\ a_6 &= \begin{pmatrix} -6.10819u^{23} - 10.3658u^{22} + \dots - 64.4159u - 1.35938 \\ -0.00224655u^{23} + 0.0591609u^{22} + \dots - 0.0184137u + 1.02291 \end{pmatrix} \\ a_8 &= \begin{pmatrix} -11.0689u^{23} - 17.0056u^{22} + \dots + 37.8459u + 14.8624 \\ -16.9069u^{23} - 32.6103u^{22} + \dots - 206.366u - 22.9455 \end{pmatrix} \\ a_3 &= \begin{pmatrix} -4.32824u^{23} - 7.83526u^{22} + \dots - 73.4315u - 5.56357 \\ -0.0928160u^{23} - 0.287207u^{22} + \dots - 3.14691u + 0.0772088 \end{pmatrix} \\ a_2 &= \begin{pmatrix} -2.20110u^{23} - 6.23746u^{22} + \dots - 154.126u - 25.4095 \\ -0.271600u^{23} - 0.619617u^{22} + \dots - 13.0846u - 2.59455 \end{pmatrix} \\ a_{12} &= \begin{pmatrix} 1.40795u^{23} + 4.89036u^{22} + \dots + 90.7982u + 14.0726 \\ 0.922791u^{23} + 1.75277u^{22} + \dots + 28.2426u + 4.23542 \end{pmatrix} \\ a_{11} &= \begin{pmatrix} -9.30288u^{23} - 14.0345u^{22} + \dots + 54.7475u + 15.3134 \\ -0.845550u^{23} - 2.77361u^{22} + \dots + 13.5947u + 1.91142 \end{pmatrix} \\ a_7 &= \begin{pmatrix} 4.20419u^{23} + 10.1883u^{22} + \dots + 163.287u + 24.6179 \\ 0.945701u^{23} + 1.80083u^{22} + \dots + 25.9827u + 4.43712 \end{pmatrix} \end{aligned}$$

(ii) Obstruction class = 1

$$\text{(iii) Cusp Shapes} = \frac{343669279555800031796537}{63875034598573877706315} u^{23} + \frac{312636858516916960760692}{21291678199524625902105} u^{22} + \dots - \frac{18768889108163220108121}{21291678199524625902105} u - \frac{1147962291378844473121517}{63875034598573877706315}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{24} - 12u^{23} + \dots - 18u + 1$
c_2, c_{11}	$u^{24} - 4u^{23} + \dots - 2u + 1$
c_3, c_9	$u^{24} - 3u^{22} + \dots - 3u^2 + 1$
c_4	$u^{24} + 2u^{23} + \dots + 8u + 1$
c_5, c_8	$u^{24} - 3u^{22} + \dots - 3u^2 + 1$
c_6, c_7	$u^{24} + 4u^{23} + \dots + 2u + 1$
c_{10}	$u^{24} + 12u^{23} + \dots + 18u + 1$
c_{12}	$u^{24} - 2u^{23} + \dots - 8u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$y^{24} + 12y^{23} + \dots - 6y + 1$
c_2, c_6, c_7 c_{11}	$y^{24} + 12y^{23} + \dots + 18y + 1$
c_3, c_5, c_8 c_9	$y^{24} - 6y^{23} + \dots - 6y + 1$
c_4, c_{12}	$y^{24} + 10y^{23} + \dots + 16y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.508468 + 0.833859I$ $a = 1.04067 - 1.90305I$ $b = -0.755169 + 0.069369I$	$5.18257 + 4.98692I$	$7.16194 - 5.64832I$
$u = -0.508468 - 0.833859I$ $a = 1.04067 + 1.90305I$ $b = -0.755169 - 0.069369I$	$5.18257 - 4.98692I$	$7.16194 + 5.64832I$
$u = 0.949260 + 0.551436I$ $a = -0.86340 + 1.29887I$ $b = -1.093510 - 0.450585I$	$-2.84621 - 5.32520I$	$-6.09553 + 7.11128I$
$u = 0.949260 - 0.551436I$ $a = -0.86340 - 1.29887I$ $b = -1.093510 + 0.450585I$	$-2.84621 + 5.32520I$	$-6.09553 - 7.11128I$
$u = -0.127138 + 0.863795I$ $a = -2.59747 + 0.67163I$ $b = 0.762168 - 0.117774I$	$4.61036 + 2.70656I$	$11.40887 - 5.24728I$
$u = -0.127138 - 0.863795I$ $a = -2.59747 - 0.67163I$ $b = 0.762168 + 0.117774I$	$4.61036 - 2.70656I$	$11.40887 + 5.24728I$
$u = -0.875010 + 0.862159I$ $a = 0.014795 + 0.999891I$ $b = 0.754481 - 0.656322I$	$3.68608I$	$0. - 7.10821I$
$u = -0.875010 - 0.862159I$ $a = 0.014795 - 0.999891I$ $b = 0.754481 + 0.656322I$	$- 3.68608I$	$0. + 7.10821I$
$u = -0.394249 + 0.499202I$ $a = -0.231741 + 0.972777I$ $b = 0.202318 - 0.979320I$	$2.82928I$	$0. - 13.06624I$
$u = -0.394249 - 0.499202I$ $a = -0.231741 - 0.972777I$ $b = 0.202318 + 0.979320I$	$- 2.82928I$	$0. + 13.06624I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.372400 + 0.203320I$ $a = 0.957046 - 0.289936I$ $b = 0.962404 - 0.271622I$	$8.95397I$	$0. - 7.24311I$
$u = 1.372400 - 0.203320I$ $a = 0.957046 + 0.289936I$ $b = 0.962404 + 0.271622I$	$- 8.95397I$	$0. + 7.24311I$
$u = -0.183026 + 0.497500I$ $a = 0.853414 + 0.345332I$ $b = -0.066707 - 1.119450I$	$-0.882626 + 0.492848I$	$0.123533 + 1.402754I$
$u = -0.183026 - 0.497500I$ $a = 0.853414 - 0.345332I$ $b = -0.066707 + 1.119450I$	$-0.882626 - 0.492848I$	$0.123533 - 1.402754I$
$u = -0.328000 + 0.361368I$ $a = 1.006900 - 0.407438I$ $b = -0.053042 + 0.890133I$	$0.882626 - 0.492848I$	$-0.123533 - 1.402754I$
$u = -0.328000 - 0.361368I$ $a = 1.006900 + 0.407438I$ $b = -0.053042 - 0.890133I$	$0.882626 + 0.492848I$	$-0.123533 + 1.402754I$
$u = -0.177744 + 0.411566I$ $a = -0.685612 + 0.727968I$ $b = 0.100490 + 0.994938I$	$4.94984I$	$0. - 4.75242I$
$u = -0.177744 - 0.411566I$ $a = -0.685612 - 0.727968I$ $b = 0.100490 - 0.994938I$	$- 4.94984I$	$0. + 4.75242I$
$u = -1.53583 + 0.75686I$ $a = -0.354939 - 0.533960I$ $b = -0.781753 + 0.322124I$	$2.84621 + 5.32520I$	$6.09553 - 7.11128I$
$u = -1.53583 - 0.75686I$ $a = -0.354939 + 0.533960I$ $b = -0.781753 - 0.322124I$	$2.84621 - 5.32520I$	$6.09553 + 7.11128I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.05773 + 1.83541I$	$-5.18257 - 4.98692I$	0
$a = 0.221203 + 0.404508I$		
$b = -1.313130 - 0.120623I$		
$u = 1.05773 - 1.83541I$	$-5.18257 + 4.98692I$	0
$a = 0.221203 - 0.404508I$		
$b = -1.313130 + 0.120623I$		
$u = -0.24991 + 2.32907I$	$-4.61036 + 2.70656I$	0
$a = -0.360863 + 0.093308I$		
$b = 1.281450 - 0.198016I$		
$u = -0.24991 - 2.32907I$	$-4.61036 - 2.70656I$	0
$a = -0.360863 - 0.093308I$		
$b = 1.281450 + 0.198016I$		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{24} - 12u^{23} + \dots - 18u + 1)(u^{138} + 61u^{137} + \dots + 607299u + 14641)$
c_2	$(u^{24} - 4u^{23} + \dots - 2u + 1)(u^{138} - u^{137} + \dots + 1529u + 121)$
c_3	$(u^{24} - 3u^{22} + \dots - 3u^2 + 1)(u^{138} - u^{137} + \dots - 77095u + 4463)$
c_4	$(u^{24} + 2u^{23} + \dots + 8u + 1)(u^{138} - 9u^{137} + \dots - 21u + 1)$
c_5	$(u^{24} - 3u^{22} + \dots - 3u^2 + 1)(u^{138} + u^{137} + \dots + 77095u + 4463)$
c_6	$(u^{24} + 4u^{23} + \dots + 2u + 1)(u^{138} - u^{137} + \dots + 1529u + 121)$
c_7	$(u^{24} + 4u^{23} + \dots + 2u + 1)(u^{138} + u^{137} + \dots - 1529u + 121)$
c_8	$(u^{24} - 3u^{22} + \dots - 3u^2 + 1)(u^{138} - u^{137} + \dots - 77095u + 4463)$
c_9	$(u^{24} - 3u^{22} + \dots - 3u^2 + 1)(u^{138} + u^{137} + \dots + 77095u + 4463)$
c_{10}	$(u^{24} + 12u^{23} + \dots + 18u + 1)(u^{138} - 61u^{137} + \dots - 607299u + 14641)$
c_{11}	$(u^{24} - 4u^{23} + \dots - 2u + 1)(u^{138} + u^{137} + \dots - 1529u + 121)$
c_{12}	$(u^{24} - 2u^{23} + \dots - 8u + 1)(u^{138} + 9u^{137} + \dots + 21u + 1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$(y^{24} + 12y^{23} + \dots - 6y + 1)$ $\cdot (y^{138} + 45y^{137} + \dots + 6338026514699y + 214358881)$
c_2, c_6, c_7 c_{11}	$(y^{24} + 12y^{23} + \dots + 18y + 1)(y^{138} + 61y^{137} + \dots + 607299y + 14641)$
c_3, c_5, c_8 c_9	$(y^{24} - 6y^{23} + \dots - 6y + 1)$ $\cdot (y^{138} - 81y^{137} + \dots - 4595134649y + 19918369)$
c_4, c_{12}	$(y^{24} + 10y^{23} + \dots + 16y + 1)(y^{138} + 15y^{137} + \dots + 45y + 1)$