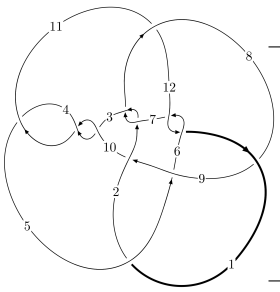
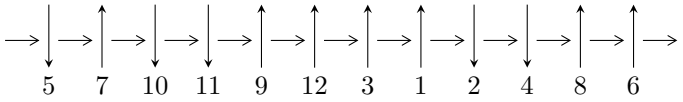
$12a_{1268}$ $(K12a_{1268})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 9.11346 \times 10^{461} u^{147} + 3.95273 \times 10^{461} u^{146} + \cdots + 3.62863 \times 10^{462} b - 1.72199 \times 10^{463}, \\ & 4.51564 \times 10^{464} u^{147} + 9.26536 \times 10^{463} u^{146} + \cdots + 1.34259 \times 10^{464} a - 2.14693 \times 10^{466}, \\ & u^{148} - u^{147} + \cdots - 565u + 37 \rangle \\ I_2^u = \langle & -21787693 u^{37} - 17833328 u^{36} + \cdots + 4484003 b + 11235058, \\ & 4256822446 u^{37} + 1213250697 u^{36} + \cdots + 587404393 a - 4089312198,\ u^{38} - 20 u^{36} + \cdots - 2u + 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 186 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. $\boldsymbol{I_1^u = \langle 9.11 \times 10^{461} u^{147} + 3.95 \times 10^{461} u^{146} + \cdots + 3.63 \times 10^{462} b - 1.72 \times 10^{463},\ 4.52 \times 10^{464} u^{147} + 9.27 \times 10^{463} u^{146} + \cdots + 1.34 \times 10^{464} a - 2.15 \times 10^{466},\ u^{148} - u^{147} + \cdots - 565u + 37 \rangle}$

(i) Arc colorings

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

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

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

$$a_7 = \begin{pmatrix} -3.36337u^{147} - 0.690109u^{146} + \cdots - 1732.60u + 159.909 \\ -0.251154u^{147} - 0.108932u^{146} + \cdots - 88.7224u + 4.74555 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -3.61452u^{147} - 0.799040u^{146} + \cdots - 1821.32u + 164.655 \\ -0.251154u^{147} - 0.108932u^{146} + \cdots - 88.7224u + 4.74555 \end{pmatrix}$$

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

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

$$a_{12} = \begin{pmatrix} -0.585914u^{147} + 0.232383u^{146} + \cdots - 797.840u + 110.149 \\ 1.37060u^{147} + 0.380173u^{146} + \cdots + 566.237u - 37.5510 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -1.84258u^{147} - 0.465549u^{146} + \cdots - 904.057u + 86.1561 \\ -0.299998u^{147} - 0.0844511u^{146} + \cdots - 89.1876u + 3.14636 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -2.61434u^{147} - 0.697404u^{146} + \cdots - 1189.37u + 102.524 \\ 0.372888u^{147} + 0.126054u^{146} + \cdots + 198.348u - 16.7759 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 4.65490u^{147} + 1.63243u^{146} + \cdots + 1539.37u - 78.1800 \\ -0.150348u^{147} - 0.0242958u^{146} + \cdots - 118.307u + 13.7502 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -1.51255u^{147} - 0.235174u^{146} + \cdots - 911.852u + 102.320 \\ -0.818133u^{147} - 0.239079u^{146} + \cdots - 290.745u + 17.0314 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.568977u^{147} + 0.0557856u^{146} + \cdots - 394.985u + 37.7750$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{148}+5u^{147}+\cdots-47u+1$
c_2, c_7	$u^{148}+u^{147}+\cdots+28032u+9472$
c_3, c_4, c_{10}	$u^{148}+u^{147}+\cdots+565u+37$
c_5	$u^{148}-5u^{147}+\cdots+207817u+10777$
c_6, c_{12}	$u^{148}+u^{147}+\cdots-4721u+6513$
c_8	$u^{148}+15u^{146}+\cdots+608u+64$
c_9	$u^{148}-3u^{147}+\cdots+733241455u+110567423$
c_{11}	$u^{148}+u^{147}+\cdots-13110u+65501$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{148} + 7y^{147} + \cdots - 253y + 1$
c_2, c_7	$y^{148} - 71y^{147} + \cdots - 3723476992y + 89718784$
c_3, c_4, c_{10}	$y^{148} - 143y^{147} + \cdots - 187357y + 1369$
c_5	$y^{148} + 35y^{147} + \cdots - 9055314399y + 116143729$
c_6, c_{12}	$y^{148} + 111y^{147} + \cdots + 1135280675y + 42419169$
c_8	$y^{148} + 30y^{147} + \cdots + 113664y + 4096$
c_9	$y^{148} - 27y^{147} + \cdots - 884023777418158187y + 12225155028860929$
c_{11}	$y^{148} + 21y^{147} + \cdots + 171350880528y + 4290381001$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.231974 + 0.965550I$ $a = 1.61605 + 0.24726I$ $b = -0.942533 + 0.407635I$	$2.28070 - 2.18616I$	0
$u = 0.231974 - 0.965550I$ $a = 1.61605 - 0.24726I$ $b = -0.942533 - 0.407635I$	$2.28070 + 2.18616I$	0
$u = 0.357273 + 0.925002I$ $a = -1.82625 - 0.10771I$ $b = 1.147880 - 0.497498I$	$3.40517 - 8.71558I$	0
$u = 0.357273 - 0.925002I$ $a = -1.82625 + 0.10771I$ $b = 1.147880 + 0.497498I$	$3.40517 + 8.71558I$	0
$u = 0.498173 + 0.850756I$ $a = 0.924558 + 0.879436I$ $b = -0.899190 - 0.367524I$	$-1.79766 + 2.02965I$	0
$u = 0.498173 - 0.850756I$ $a = 0.924558 - 0.879436I$ $b = -0.899190 + 0.367524I$	$-1.79766 - 2.02965I$	0
$u = -0.403377 + 0.895392I$ $a = 1.87705 - 0.26722I$ $b = -1.203460 - 0.645179I$	$-1.2856 + 14.9681I$	0
$u = -0.403377 - 0.895392I$ $a = 1.87705 + 0.26722I$ $b = -1.203460 + 0.645179I$	$-1.2856 - 14.9681I$	0
$u = -0.581403 + 0.840266I$ $a = -1.58415 + 0.76045I$ $b = 1.077340 + 0.458818I$	$1.49467 + 5.83890I$	0
$u = -0.581403 - 0.840266I$ $a = -1.58415 - 0.76045I$ $b = 1.077340 - 0.458818I$	$1.49467 - 5.83890I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.919473+0.484488I$ $a=\ \ 0.0697847-0.0236496I$ $b=-0.961453+0.453445I$	$-1.63528+2.03359I$	0
$u=-0.919473-0.484488I$ $a=\ \ 0.0697847+0.0236496I$ $b=-0.961453-0.453445I$	$-1.63528-2.03359I$	0
$u=-0.439196+0.782732I$ $a=\ \ 1.55816-0.07528I$ $b=-0.865042-0.251362I$	$1.171650-0.269264I$	0
$u=-0.439196-0.782732I$ $a=\ \ 1.55816+0.07528I$ $b=-0.865042+0.251362I$	$1.171650+0.269264I$	0
$u=-0.826059+0.740595I$ $a=-0.814168+0.620310I$ $b=\ \ 1.072910-0.550619I$	$-2.53181-9.42226I$	0
$u=-0.826059-0.740595I$ $a=-0.814168-0.620310I$ $b=\ \ 1.072910+0.550619I$	$-2.53181+9.42226I$	0
$u=-0.034444+0.878485I$ $a=\ \ 1.89031+0.70285I$ $b=-0.860373-0.345168I$	$-1.96259+1.02583I$	0
$u=-0.034444-0.878485I$ $a=\ \ 1.89031-0.70285I$ $b=-0.860373+0.345168I$	$-1.96259-1.02583I$	0
$u=\ \ 0.534463+0.676615I$ $a=-1.50415-0.26281I$ $b=\ \ 1.141460-0.585695I$	$-2.15552-6.96261I$	0
$u=\ \ 0.534463-0.676615I$ $a=-1.50415+0.26281I$ $b=\ \ 1.141460+0.585695I$	$-2.15552+6.96261I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.134210+0.178307I$ $a=\ \ 0.377680-1.136420I$ $b=-1.174710-0.194516I$	$-0.73408-2.34311I$	0
$u=-1.134210-0.178307I$ $a=\ \ 0.377680+1.136420I$ $b=-1.174710+0.194516I$	$-0.73408+2.34311I$	0
$u=-0.085848+0.829903I$ $a=-1.269460+0.287223I$ $b=\ \ 0.925969+0.640871I$	$1.02925+2.54980I$	0
$u=-0.085848-0.829903I$ $a=-1.269460-0.287223I$ $b=\ \ 0.925969-0.640871I$	$1.02925-2.54980I$	0
$u=-0.559642+0.607958I$ $a=\ \ 1.235330-0.392564I$ $b=-0.883726+0.285594I$	$1.61185-0.79071I$	0
$u=-0.559642-0.607958I$ $a=\ \ 1.235330+0.392564I$ $b=-0.883726-0.285594I$	$1.61185+0.79071I$	0
$u=-1.18648$ $a=\ \ 1.47562$ $b=-1.37704$	2.50742	0
$u=\ \ 0.406779+0.689175I$ $a=\ \ 0.313889+0.646488I$ $b=-0.341716-1.020640I$	$-3.95306-9.00700I$	0
$u=\ \ 0.406779-0.689175I$ $a=\ \ 0.313889-0.646488I$ $b=-0.341716+1.020640I$	$-3.95306+9.00700I$	0
$u=\ \ 1.170200+0.268964I$ $a=-0.669958-0.078471I$ $b=\ \ 1.139010+0.011760I$	$-1.83354-2.63838I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.170200 - 0.268964I$ $a = -0.669958 + 0.078471I$ $b = 1.139010 - 0.011760I$	$-1.83354 + 2.63838I$	0
$u = -1.202940 + 0.056948I$ $a = 0.49506 - 1.40003I$ $b = -0.916918 - 0.221604I$	$-0.57689 - 2.41463I$	0
$u = -1.202940 - 0.056948I$ $a = 0.49506 + 1.40003I$ $b = -0.916918 + 0.221604I$	$-0.57689 + 2.41463I$	0
$u = 0.518061 + 0.599429I$ $a = -1.84450 - 0.23958I$ $b = 0.447686 - 0.624149I$	$-4.39188 + 4.76426I$	0
$u = 0.518061 - 0.599429I$ $a = -1.84450 + 0.23958I$ $b = 0.447686 + 0.624149I$	$-4.39188 - 4.76426I$	0
$u = 0.969698 + 0.723097I$ $a = 0.840280 + 0.610020I$ $b = -0.939321 - 0.364404I$	$1.65398 + 3.04001I$	0
$u = 0.969698 - 0.723097I$ $a = 0.840280 - 0.610020I$ $b = -0.939321 + 0.364404I$	$1.65398 - 3.04001I$	0
$u = -1.027600 + 0.643845I$ $a = -0.936026 + 0.521892I$ $b = 0.770178 + 0.128613I$	$-0.53222 + 5.38699I$	0
$u = -1.027600 - 0.643845I$ $a = -0.936026 - 0.521892I$ $b = 0.770178 - 0.128613I$	$-0.53222 - 5.38699I$	0
$u = 1.217800 + 0.064206I$ $a = -1.45530 - 0.44097I$ $b = 1.40696 + 0.26755I$	$-1.48726 + 4.40757I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.217800 - 0.064206I$ $a = -1.45530 + 0.44097I$ $b = 1.40696 - 0.26755I$	$-1.48726 - 4.40757I$	0
$u = -1.235750 + 0.091204I$ $a = -0.43938 + 1.34729I$ $b = 0.920254 + 0.739833I$	$-0.73290 + 3.63524I$	0
$u = -1.235750 - 0.091204I$ $a = -0.43938 - 1.34729I$ $b = 0.920254 - 0.739833I$	$-0.73290 - 3.63524I$	0
$u = 1.219060 + 0.291929I$ $a = 0.50325 + 1.35547I$ $b = -0.725811 + 0.783881I$	$-2.92076 - 6.62114I$	0
$u = 1.219060 - 0.291929I$ $a = 0.50325 - 1.35547I$ $b = -0.725811 - 0.783881I$	$-2.92076 + 6.62114I$	0
$u = 0.287982 + 0.688219I$ $a = 2.31177 + 0.21530I$ $b = -1.28082 + 0.69341I$	$-1.24927 - 6.03078I$	0
$u = 0.287982 - 0.688219I$ $a = 2.31177 - 0.21530I$ $b = -1.28082 - 0.69341I$	$-1.24927 + 6.03078I$	0
$u = 0.458218 + 0.576877I$ $a = 0.170233 + 0.210030I$ $b = 0.140250 + 0.589316I$	$-1.03752 - 1.89033I$	0
$u = 0.458218 - 0.576877I$ $a = 0.170233 - 0.210030I$ $b = 0.140250 - 0.589316I$	$-1.03752 + 1.89033I$	0
$u = -0.140642 + 0.720016I$ $a = 1.70726 - 0.00510I$ $b = -1.034190 + 0.373297I$	$2.10224 - 1.09113I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.140642-0.720016I$ $a=\ 1.70726+0.00510I$ $b=-1.034190-0.373297I$	$2.10224+1.09113I$	0
$u=-0.730255$ $a=\ 1.11996$ $b=-1.32462$	3.06001	-8.56100
$u=\ 0.649683+0.314154I$ $a=-0.244478-1.052680I$ $b=\ 1.025140+0.506575I$	$-2.61593+2.34139I$	0
$u=\ 0.649683-0.314154I$ $a=-0.244478+1.052680I$ $b=\ 1.025140-0.506575I$	$-2.61593-2.34139I$	0
$u=\ 1.112220+0.642467I$ $a=-1.019790-0.109869I$ $b=\ 0.845030+0.254151I$	$-0.35240-3.50987I$	0
$u=\ 1.112220-0.642467I$ $a=-1.019790+0.109869I$ $b=\ 0.845030-0.254151I$	$-0.35240+3.50987I$	0
$u=\ 1.290390+0.000987I$ $a=-0.19706-2.58477I$ $b=\ 0.603591-0.237569I$	$-6.04126+4.91083I$	0
$u=\ 1.290390-0.000987I$ $a=-0.19706+2.58477I$ $b=\ 0.603591+0.237569I$	$-6.04126-4.91083I$	0
$u=-0.436057+0.546770I$ $a=-0.428162+0.469987I$ $b=\ 0.059678-0.716117I$	$0.42984+4.27755I$	$0.-7.44048I$
$u=-0.436057-0.546770I$ $a=-0.428162-0.469987I$ $b=\ 0.059678+0.716117I$	$0.42984-4.27755I$	$0.+7.44048I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.312390+0.075260I$ $a=-0.879452-0.081211I$ $b=\ 1.63590-0.28141I$	$0.59044+1.54011I$	0
$u=-1.312390-0.075260I$ $a=-0.879452+0.081211I$ $b=\ 1.63590+0.28141I$	$0.59044-1.54011I$	0
$u=\ 1.306620+0.153364I$ $a=\ 0.929239+0.431892I$ $b=-1.62061+0.09033I$	$-1.46158-7.64296I$	0
$u=\ 1.306620-0.153364I$ $a=\ 0.929239-0.431892I$ $b=-1.62061-0.09033I$	$-1.46158+7.64296I$	0
$u=-1.311090+0.267331I$ $a=-0.69685+1.26432I$ $b=\ 0.524955-0.035818I$	$-6.00022+2.90444I$	0
$u=-1.311090-0.267331I$ $a=-0.69685-1.26432I$ $b=\ 0.524955+0.035818I$	$-6.00022-2.90444I$	0
$u=-0.310054+0.579111I$ $a=-2.67185+0.52775I$ $b=\ 1.132180+0.385562I$	$1.60699+4.39494I$	$3.80477-6.29138I$
$u=-0.310054-0.579111I$ $a=-2.67185-0.52775I$ $b=\ 1.132180-0.385562I$	$1.60699-4.39494I$	$3.80477+6.29138I$
$u=\ 0.574132+0.313958I$ $a=\ 0.391302-0.115976I$ $b=\ 0.159559+0.454310I$	$-1.01872-1.03669I$	$-3.23722+2.14537I$
$u=\ 0.574132-0.313958I$ $a=\ 0.391302+0.115976I$ $b=\ 0.159559-0.454310I$	$-1.01872+1.03669I$	$-3.23722-2.14537I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.347740+0.050519I$ $a=-0.319306+0.481732I$ $b=-0.108122+1.409470I$	$-8.17730+1.59186I$	0
$u=-1.347740-0.050519I$ $a=-0.319306-0.481732I$ $b=-0.108122-1.409470I$	$-8.17730-1.59186I$	0
$u=1.325700+0.259766I$ $a=1.46677+0.82776I$ $b=-0.770450+0.838843I$	$-8.34614-5.53646I$	0
$u=1.325700-0.259766I$ $a=1.46677-0.82776I$ $b=-0.770450-0.838843I$	$-8.34614+5.53646I$	0
$u=1.342900+0.151224I$ $a=-0.095382-1.008510I$ $b=1.007090-0.685964I$	$-0.38120-2.04979I$	0
$u=1.342900-0.151224I$ $a=-0.095382+1.008510I$ $b=1.007090+0.685964I$	$-0.38120+2.04979I$	0
$u=1.359610+0.005401I$ $a=1.18867-1.17358I$ $b=-1.091510-0.559910I$	$-7.51476+2.09734I$	0
$u=1.359610-0.005401I$ $a=1.18867+1.17358I$ $b=-1.091510+0.559910I$	$-7.51476-2.09734I$	0
$u=1.380180+0.167017I$ $a=0.579275+0.342435I$ $b=0.50037+1.43440I$	$-9.61734-1.54022I$	0
$u=1.380180-0.167017I$ $a=0.579275-0.342435I$ $b=0.50037-1.43440I$	$-9.61734+1.54022I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.230279+0.545245I$ $a=\ \ 0.950294+0.175173I$ $b=-0.271315+0.208505I$	$1.132270-0.814488I$	$5.26248+1.58736I$
$u=-0.230279-0.545245I$ $a=\ \ 0.950294-0.175173I$ $b=-0.271315-0.208505I$	$1.132270+0.814488I$	$5.26248-1.58736I$
$u=-1.399940+0.152619I$ $a=-0.265555-0.235941I$ $b=-0.731550+0.950615I$	$-8.44367-0.90685I$	0
$u=-1.399940-0.152619I$ $a=-0.265555+0.235941I$ $b=-0.731550-0.950615I$	$-8.44367+0.90685I$	0
$u=\ \ 1.393500+0.203394I$ $a=\ \ 0.22592+1.40527I$ $b=-0.947788+0.304142I$	$-0.34472-4.74783I$	0
$u=\ \ 1.393500-0.203394I$ $a=\ \ 0.22592-1.40527I$ $b=-0.947788-0.304142I$	$-0.34472+4.74783I$	0
$u=-0.223272+0.544621I$ $a=-1.77385+1.82010I$ $b=\ \ 1.135460+0.115630I$	$4.83779+2.01072I$	$12.25456-3.74989I$
$u=-0.223272-0.544621I$ $a=-1.77385-1.82010I$ $b=\ \ 1.135460-0.115630I$	$4.83779-2.01072I$	$12.25456+3.74989I$
$u=-1.42046+0.14849I$ $a=-0.15829+1.69585I$ $b=\ \ 1.149430+0.449259I$	$-3.78499+8.03533I$	0
$u=-1.42046-0.14849I$ $a=-0.15829-1.69585I$ $b=\ \ 1.149430-0.449259I$	$-3.78499-8.03533I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.029302+0.562569I$ $a=-2.46302-0.66526I$ $b=\ \ 1.389300-0.041819I$	$2.65855+5.14896I$	$6.64503-6.03362I$
$u=-0.029302-0.562569I$ $a=-2.46302+0.66526I$ $b=\ \ 1.389300+0.041819I$	$2.65855-5.14896I$	$6.64503+6.03362I$
$u=\ \ 1.43464+0.12245I$ $a=\ \ 0.042930-0.354425I$ $b=-0.70296-1.28233I$	$-10.52140-2.89327I$	0
$u=\ \ 1.43464-0.12245I$ $a=\ \ 0.042930+0.354425I$ $b=-0.70296+1.28233I$	$-10.52140+2.89327I$	0
$u=-1.41589+0.26694I$ $a=-1.11354+1.18359I$ $b=\ \ 1.36123+0.84739I$	$-6.69510+9.50656I$	0
$u=-1.41589-0.26694I$ $a=-1.11354-1.18359I$ $b=\ \ 1.36123-0.84739I$	$-6.69510-9.50656I$	0
$u=\ \ 1.42467+0.23536I$ $a=\ \ 1.16887+1.06243I$ $b=-1.280100+0.566385I$	$-3.96712-7.44185I$	0
$u=\ \ 1.42467-0.23536I$ $a=\ \ 1.16887-1.06243I$ $b=-1.280100-0.566385I$	$-3.96712+7.44185I$	0
$u=\ \ 1.43341+0.20250I$ $a=-0.017891+0.161314I$ $b=\ \ 0.558005+0.771819I$	$-4.43305-1.75009I$	0
$u=\ \ 1.43341-0.20250I$ $a=-0.017891-0.161314I$ $b=\ \ 0.558005-0.771819I$	$-4.43305+1.75009I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.47020+0.15176I$ $a=-1.59839+1.30186I$ $b=\ \ 1.022140+0.369358I$	$-8.99633+7.05209I$	0
$u=-1.47020-0.15176I$ $a=-1.59839-1.30186I$ $b=\ \ 1.022140-0.369358I$	$-8.99633-7.05209I$	0
$u=\ \ 1.46270+0.21310I$ $a=-0.142736-0.173221I$ $b=-0.227870-1.122090I$	$-5.68487-7.13165I$	0
$u=\ \ 1.46270-0.21310I$ $a=-0.142736+0.173221I$ $b=-0.227870+1.122090I$	$-5.68487+7.13165I$	0
$u=\ \ 1.42546+0.39274I$ $a=-1.36128-0.55307I$ $b=\ \ 1.142140-0.479132I$	$-6.72741-5.79831I$	0
$u=\ \ 1.42546-0.39274I$ $a=-1.36128+0.55307I$ $b=\ \ 1.142140+0.479132I$	$-6.72741+5.79831I$	0
$u=-0.101290+0.511238I$ $a=-2.14533-1.04906I$ $b=\ \ 0.509521+0.806501I$	$-3.90419+2.55982I$	$-2.62906-7.29419I$
$u=-0.101290-0.511238I$ $a=-2.14533+1.04906I$ $b=\ \ 0.509521-0.806501I$	$-3.90419-2.55982I$	$-2.62906+7.29419I$
$u=-1.43430+0.37339I$ $a=-1.058510+0.905972I$ $b=\ \ 1.023020+0.604829I$	$-3.03968+6.93540I$	0
$u=-1.43430-0.37339I$ $a=-1.058510-0.905972I$ $b=\ \ 1.023020-0.604829I$	$-3.03968-6.93540I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.46650+0.25755I$ $a=\ \ 0.296956-0.125687I$ $b=\ \ 0.464819-1.231230I$	$-9.9905+12.4697I$	0
$u=-1.46650-0.25755I$ $a=\ \ 0.296956+0.125687I$ $b=\ \ 0.464819+1.231230I$	$-9.9905-12.4697I$	0
$u=-1.49351+0.01902I$ $a=-0.215924+0.277483I$ $b=\ \ 0.136381+0.909194I$	$-7.96267+2.08453I$	0
$u=-1.49351-0.01902I$ $a=-0.215924-0.277483I$ $b=\ \ 0.136381-0.909194I$	$-7.96267-2.08453I$	0
$u=-1.49385+0.19179I$ $a=\ \ 1.144530-0.769768I$ $b=-0.882187-0.601831I$	$-10.96370-1.88768I$	0
$u=-1.49385-0.19179I$ $a=\ \ 1.144530+0.769768I$ $b=-0.882187+0.601831I$	$-10.96370+1.88768I$	0
$u=\ \ 1.48782+0.23942I$ $a=-0.907046-0.656945I$ $b=\ \ 1.149940-0.604968I$	$-5.17711-3.29052I$	0
$u=\ \ 1.48782-0.23942I$ $a=-0.907046+0.656945I$ $b=\ \ 1.149940+0.604968I$	$-5.17711+3.29052I$	0
$u=-1.49627+0.22205I$ $a=-0.166815+0.452830I$ $b=-0.423367+0.821156I$	$-7.45351+4.85219I$	0
$u=-1.49627-0.22205I$ $a=-0.166815-0.452830I$ $b=-0.423367-0.821156I$	$-7.45351-4.85219I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.50052+0.24103I$ $a=\ \ 0.738671-0.816667I$ $b=-1.19425-0.83194I$	$-8.72033+10.31820I$	0
$u=-1.50052-0.24103I$ $a=\ \ 0.738671+0.816667I$ $b=-1.19425+0.83194I$	$-8.72033-10.31820I$	0
$u=-1.47983+0.35404I$ $a=\ \ 1.12539-0.87052I$ $b=-1.26217-0.64271I$	$-2.48744+13.31390I$	0
$u=-1.47983-0.35404I$ $a=\ \ 1.12539+0.87052I$ $b=-1.26217+0.64271I$	$-2.48744-13.31390I$	0
$u=-1.52104+0.08000I$ $a=-0.380554-0.125846I$ $b=-0.443776-0.501170I$	$-9.49093+2.40825I$	0
$u=-1.52104-0.08000I$ $a=-0.380554+0.125846I$ $b=-0.443776+0.501170I$	$-9.49093-2.40825I$	0
$u=\ \ 1.49631+0.34247I$ $a=-1.10832-1.03411I$ $b=\ \ 1.26318-0.75191I$	$-7.3907-19.4532I$	0
$u=\ \ 1.49631-0.34247I$ $a=-1.10832+1.03411I$ $b=\ \ 1.26318+0.75191I$	$-7.3907+19.4532I$	0
$u=\ \ 0.198827+0.400882I$ $a=\ \ 2.71094+2.85249I$ $b=-1.287750+0.321247I$	$1.55006-6.01113I$	$10.85844+7.29417I$
$u=\ \ 0.198827-0.400882I$ $a=\ \ 2.71094-2.85249I$ $b=-1.287750-0.321247I$	$1.55006+6.01113I$	$10.85844-7.29417I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.211986+0.388735I$ $a=-0.241725-1.269730I$ $b=-0.254453+1.253030I$	$-4.51951-0.62712I$	$-3.68881-5.60669I$
$u=-0.211986-0.388735I$ $a=-0.241725+1.269730I$ $b=-0.254453-1.253030I$	$-4.51951+0.62712I$	$-3.68881+5.60669I$
$u=-0.131845+0.409309I$ $a=\ \ 1.56478-1.40321I$ $b=-1.267540-0.366593I$	$4.31325-0.09049I$	$10.59814+2.57116I$
$u=-0.131845-0.409309I$ $a=\ \ 1.56478+1.40321I$ $b=-1.267540+0.366593I$	$4.31325+0.09049I$	$10.59814-2.57116I$
$u=\ \ 1.55242+0.32483I$ $a=\ \ 0.882185+1.092690I$ $b=-1.109860+0.615948I$	$-5.40215-10.20940I$	0
$u=\ \ 1.55242-0.32483I$ $a=\ \ 0.882185-1.092690I$ $b=-1.109860-0.615948I$	$-5.40215+10.20940I$	0
$u=\ \ 0.345174+0.219410I$ $a=\ \ 4.97865+3.99088I$ $b=-0.729915+0.244689I$	$-2.85893-5.32704I$	$1.7544+14.6717I$
$u=\ \ 0.345174-0.219410I$ $a=\ \ 4.97865-3.99088I$ $b=-0.729915-0.244689I$	$-2.85893+5.32704I$	$1.7544-14.6717I$
$u=-0.329448+0.225873I$ $a=-0.918001+0.200629I$ $b=\ \ 0.349362-1.064470I$	$-4.75595+1.37248I$	$-8.78992-8.55346I$
$u=-0.329448-0.225873I$ $a=-0.918001-0.200629I$ $b=\ \ 0.349362+1.064470I$	$-4.75595-1.37248I$	$-8.78992+8.55346I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.60484 + 0.10691I$ $a = 0.468225 + 0.210671I$ $b = 0.721145 + 0.333609I$	$-10.09430 - 4.00612I$	0
$u = 1.60484 - 0.10691I$ $a = 0.468225 - 0.210671I$ $b = 0.721145 - 0.333609I$	$-10.09430 + 4.00612I$	0
$u = -1.61017 + 0.19252I$ $a = -0.170100 + 0.160853I$ $b = 0.405342 - 0.296802I$	$-9.18901 + 2.02315I$	0
$u = -1.61017 - 0.19252I$ $a = -0.170100 - 0.160853I$ $b = 0.405342 + 0.296802I$	$-9.18901 - 2.02315I$	0
$u = 1.64023 + 0.08816I$ $a = 0.107633 - 0.118889I$ $b = -0.775130 - 0.567616I$	$-11.30980 + 6.51473I$	0
$u = 1.64023 - 0.08816I$ $a = 0.107633 + 0.118889I$ $b = -0.775130 + 0.567616I$	$-11.30980 - 6.51473I$	0
$u = 0.1150890 + 0.0113492I$ $a = 6.46636 - 8.23535I$ $b = 0.798969 + 0.513988I$	$-3.22422 + 2.14561I$	$-5.03973 - 3.74291I$
$u = 0.1150890 - 0.0113492I$ $a = 6.46636 + 8.23535I$ $b = 0.798969 - 0.513988I$	$-3.22422 - 2.14561I$	$-5.03973 + 3.74291I$

II.

$\boldsymbol{I_2^u = \langle -2.18\times 10^7 u^{37} - 1.78\times 10^7 u^{36} + \cdots + 4.48\times 10^6 b + 1.12\times 10^7,\ 4.26\times 10^9 u^{37} + 1.21\times 10^9 u^{36} + \cdots + 5.87\times 10^8 a - 4.09\times 10^9,\ u^{38} - 20u^{36} + \cdots - 2u + 1\rangle}$

(i) Arc colorings

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

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

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

$$a_7 = \begin{pmatrix} -7.24683u^{37} - 2.06544u^{36} + \cdots + 0.0910287u + 6.96166 \\ 4.85898u^{37} + 3.97710u^{36} + \cdots + 4.12861u - 2.50559 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -2.38785u^{37} + 1.91166u^{36} + \cdots + 4.21963u + 4.45608 \\ 4.85898u^{37} + 3.97710u^{36} + \cdots + 4.12861u - 2.50559 \end{pmatrix}$$

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

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

$$a_{12} = \begin{pmatrix} -6.38265u^{37} - 5.01518u^{36} + \cdots - 8.26376u + 0.998020 \\ 3.14211u^{37} + 0.0643919u^{36} + \cdots - 1.37747u + 1.42376 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 4.01381u^{37} - 0.618644u^{36} + \cdots + 1.81924u + 4.06511 \\ 3.54241u^{37} + 7.35746u^{36} + \cdots + 7.06166u - 4.66694 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 7.29480u^{37} + 2.27644u^{36} + \cdots + 4.43642u + 0.855798 \\ -1.43554u^{37} + 2.73952u^{36} + \cdots + 3.24977u - 1.30639 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 2.66041u^{37} + 1.15232u^{36} + \cdots - 4.76282u - 8.07943 \\ -4.83578u^{37} + 0.462250u^{36} + \cdots + 2.98577u + 0.864912 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 2.29440u^{37} - 0.754655u^{36} + \cdots - 2.61969u + 2.26480 \\ -2.50399u^{37} + 10.6731u^{36} + \cdots + 14.5809u - 6.45742 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{8002109886}{587404393}u^{37} - \frac{7511164177}{587404393}u^{36} + \cdots - \frac{15820511680}{587404393}u + \frac{8864632311}{587404393}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{38}+2u^{37}+\cdots+2u^2+1$
c_2	$u^{38}-10u^{36}+\cdots+u+1$
c_3, c_4	$u^{38}-20u^{36}+\cdots-2u+1$
c_5	$u^{38}+5u^{36}+\cdots-4u+1$
c_6	$u^{38}+17u^{36}+\cdots+76u^2+1$
c_7	$u^{38}-10u^{36}+\cdots-u+1$
c_8	$u^{38}+u^{37}+\cdots-6u^2+1$
c_9	$u^{38}+4u^{36}+\cdots-98u+43$
c_{10}	$u^{38}-20u^{36}+\cdots+2u+1$
c_{11}	$u^{38}+4u^{37}+\cdots-5u+1$
c_{12}	$u^{38}+17u^{36}+\cdots+76u^2+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{38} + 6y^{37} + \cdots + 4y + 1$
c_2, c_7	$y^{38} - 20y^{37} + \cdots - 35y + 1$
c_3, c_4, c_{10}	$y^{38} - 40y^{37} + \cdots + 8y + 1$
c_5	$y^{38} + 10y^{37} + \cdots + 14y + 1$
c_6, c_{12}	$y^{38} + 34y^{37} + \cdots + 152y + 1$
c_8	$y^{38} + 17y^{37} + \cdots - 12y + 1$
c_9	$y^{38} + 8y^{37} + \cdots + 24366y + 1849$
c_{11}	$y^{38} + 12y^{37} + \cdots + 101y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.724754+0.466721I$ $a=\ \ 1.28706-1.06845I$ $b=-0.808877+0.208230I$	$1.43893-1.80066I$	$5.39717+3.18059I$
$u=-0.724754-0.466721I$ $a=\ \ 1.28706+1.06845I$ $b=-0.808877-0.208230I$	$1.43893+1.80066I$	$5.39717-3.18059I$
$u=\ \ 0.038624+0.856037I$ $a=\ \ 1.54407+0.33359I$ $b=-0.940689+0.374426I$	$2.61089-1.54488I$	$12.92325+1.16108I$
$u=\ \ 0.038624-0.856037I$ $a=\ \ 1.54407-0.33359I$ $b=-0.940689-0.374426I$	$2.61089+1.54488I$	$12.92325-1.16108I$
$u=-0.221875+0.790952I$ $a=\ \ 1.47435-1.19835I$ $b=-0.860378+0.342829I$	$-2.06383-1.55637I$	$-5.18101+2.32111I$
$u=-0.221875-0.790952I$ $a=\ \ 1.47435+1.19835I$ $b=-0.860378-0.342829I$	$-2.06383+1.55637I$	$-5.18101-2.32111I$
$u=-0.664256+0.459387I$ $a=-1.43109+1.22763I$ $b=\ \ 1.175520+0.313920I$	$0.69682+5.95632I$	$0.91457-8.64129I$
$u=-0.664256-0.459387I$ $a=-1.43109-1.22763I$ $b=\ \ 1.175520-0.313920I$	$0.69682-5.95632I$	$0.91457+8.64129I$
$u=-0.693540+0.397168I$ $a=-1.29504+1.27098I$ $b=\ \ 1.187210+0.286839I$	$0.69724+5.95571I$	$1.26355-8.07193I$
$u=-0.693540-0.397168I$ $a=-1.29504-1.27098I$ $b=\ \ 1.187210-0.286839I$	$0.69724-5.95571I$	$1.26355+8.07193I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.227810+0.039060I$ $a=\ \ 1.098400-0.856168I$ $b=-1.45751+0.19388I$	$-1.65265-5.06370I$	$0.+9.62078I$
$u=-1.227810-0.039060I$ $a=\ \ 1.098400+0.856168I$ $b=-1.45751-0.19388I$	$-1.65265+5.06370I$	$0.-9.62078I$
$u=\ \ 1.230970+0.049626I$ $a=-0.748202+0.487136I$ $b=\ \ 1.44390+0.24716I$	$1.18377-0.94005I$	$4.33430+0.I$
$u=\ \ 1.230970-0.049626I$ $a=-0.748202-0.487136I$ $b=\ \ 1.44390-0.24716I$	$1.18377+0.94005I$	$4.33430+0.I$
$u=\ \ 1.274220+0.096196I$ $a=\ \ 0.86870+2.57943I$ $b=-0.620577+0.272731I$	$-5.94975-5.80302I$	$0.+8.64052I$
$u=\ \ 1.274220-0.096196I$ $a=\ \ 0.86870-2.57943I$ $b=-0.620577-0.272731I$	$-5.94975+5.80302I$	$0.-8.64052I$
$u=\ \ 1.124380+0.648756I$ $a=-0.823612-0.002003I$ $b=\ \ 0.833040+0.229721I$	$-0.45359-3.86378I$	$0.+13.77418I$
$u=\ \ 1.124380-0.648756I$ $a=-0.823612+0.002003I$ $b=\ \ 0.833040-0.229721I$	$-0.45359+3.86378I$	$0.-13.77418I$
$u=\ \ 0.681966+0.108872I$ $a=\ \ 0.915571-0.315211I$ $b=-1.277390+0.105664I$	$3.37958+0.31409I$	$5.07982-8.68577I$
$u=\ \ 0.681966-0.108872I$ $a=\ \ 0.915571+0.315211I$ $b=-1.277390-0.105664I$	$3.37958-0.31409I$	$5.07982+8.68577I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.330470+0.194404I$ $a=-0.346350+1.364350I$ $b=\ \ 0.815625+0.569407I$	$-1.41232+4.80713I$	0
$u=-1.330470-0.194404I$ $a=-0.346350-1.364350I$ $b=\ \ 0.815625-0.569407I$	$-1.41232-4.80713I$	0
$u=-1.377820+0.116121I$ $a=-0.363180+0.687232I$ $b=-0.379983+1.273240I$	$-8.97301+2.54427I$	0
$u=-1.377820-0.116121I$ $a=-0.363180-0.687232I$ $b=-0.379983-1.273240I$	$-8.97301-2.54427I$	0
$u=\ \ 1.381520+0.115723I$ $a=\ \ 0.309327+0.082842I$ $b=\ \ 0.271911+1.294690I$	$-9.00458-0.22425I$	0
$u=\ \ 1.381520-0.115723I$ $a=\ \ 0.309327-0.082842I$ $b=\ \ 0.271911-1.294690I$	$-9.00458+0.22425I$	0
$u=-1.38108+0.32679I$ $a=-1.43795+0.68681I$ $b=\ \ 1.103380+0.505490I$	$-6.15200+5.66713I$	0
$u=-1.38108-0.32679I$ $a=-1.43795-0.68681I$ $b=\ \ 1.103380-0.505490I$	$-6.15200-5.66713I$	0
$u=\ \ 1.46827+0.25645I$ $a=\ \ 0.91817+1.20189I$ $b=-1.240190+0.663386I$	$-5.72684-9.08504I$	0
$u=\ \ 1.46827-0.25645I$ $a=\ \ 0.91817-1.20189I$ $b=-1.240190-0.663386I$	$-5.72684+9.08504I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.57831+0.04794I$ $a=-0.310175+0.692536I$ $b=-0.435749+0.068585I$	$-10.17910+4.89622I$	0
$u=-1.57831-0.04794I$ $a=-0.310175-0.692536I$ $b=-0.435749-0.068585I$	$-10.17910-4.89622I$	0
$u=\ 0.397426+0.124415I$ $a=-1.32013-5.43287I$ $b=\ 0.593080+0.105928I$	$-2.87625+4.88335I$	$1.85351+2.68366I$
$u=\ 0.397426-0.124415I$ $a=-1.32013+5.43287I$ $b=\ 0.593080-0.105928I$	$-2.87625-4.88335I$	$1.85351-2.68366I$
$u=\ 1.60462+0.16501I$ $a=\ 0.066932-0.251467I$ $b=\ 0.542537+0.167224I$	$-8.85350-1.99548I$	0
$u=\ 1.60462-0.16501I$ $a=\ 0.066932+0.251467I$ $b=\ 0.542537-0.167224I$	$-8.85350+1.99548I$	0
$u=-0.002074+0.254628I$ $a=\ 1.59315-1.32913I$ $b=\ 0.055133+1.178490I$	$-4.28248-1.15744I$	$5.04389+4.34187I$
$u=-0.002074-0.254628I$ $a=\ 1.59315+1.32913I$ $b=\ 0.055133-1.178490I$	$-4.28248+1.15744I$	$5.04389-4.34187I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{38}+2u^{37}+\cdots+2u^2+1)(u^{148}+5u^{147}+\cdots-47u+1)$
c_2	$(u^{38}-10u^{36}+\cdots+u+1)(u^{148}+u^{147}+\cdots+28032u+9472)$
c_3, c_4	$(u^{38}-20u^{36}+\cdots-2u+1)(u^{148}+u^{147}+\cdots+565u+37)$
c_5	$(u^{38}+5u^{36}+\cdots-4u+1)(u^{148}-5u^{147}+\cdots+207817u+10777)$
c_6	$(u^{38}+17u^{36}+\cdots+76u^2+1)(u^{148}+u^{147}+\cdots-4721u+6513)$
c_7	$(u^{38}-10u^{36}+\cdots-u+1)(u^{148}+u^{147}+\cdots+28032u+9472)$
c_8	$(u^{38}+u^{37}+\cdots-6u^2+1)(u^{148}+15u^{146}+\cdots+608u+64)$
c_9	$(u^{38}+4u^{36}+\cdots-98u+43)$ $\cdot(u^{148}-3u^{147}+\cdots+733241455u+110567423)$
c_{10}	$(u^{38}-20u^{36}+\cdots+2u+1)(u^{148}+u^{147}+\cdots+565u+37)$
c_{11}	$(u^{38}+4u^{37}+\cdots-5u+1)(u^{148}+u^{147}+\cdots-13110u+65501)$
c_{12}	$(u^{38}+17u^{36}+\cdots+76u^2+1)(u^{148}+u^{147}+\cdots-4721u+6513)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{38}+6y^{37}+\cdots+4y+1)(y^{148}+7y^{147}+\cdots-253y+1)$
c_2, c_7	$(y^{38}-20y^{37}+\cdots-35y+1)$ $\cdot(y^{148}-71y^{147}+\cdots-3723476992y+89718784)$
c_3, c_4, c_{10}	$(y^{38}-40y^{37}+\cdots+8y+1)(y^{148}-143y^{147}+\cdots-187357y+1369)$
c_5	$(y^{38}+10y^{37}+\cdots+14y+1)$ $\cdot(y^{148}+35y^{147}+\cdots-9055314399y+116143729)$
c_6, c_{12}	$(y^{38}+34y^{37}+\cdots+152y+1)$ $\cdot(y^{148}+111y^{147}+\cdots+1135280675y+42419169)$
c_8	$(y^{38}+17y^{37}+\cdots-12y+1)(y^{148}+30y^{147}+\cdots+113664y+4096)$
c_9	$(y^{38}+8y^{37}+\cdots+24366y+1849)$ $\cdot(y^{148}-27y^{147}+\cdots-884023777418158187y+12225155028860929)$
c_{11}	$(y^{38}+12y^{37}+\cdots+101y+1)$ $\cdot(y^{148}+21y^{147}+\cdots+171350880528y+4290381001)$