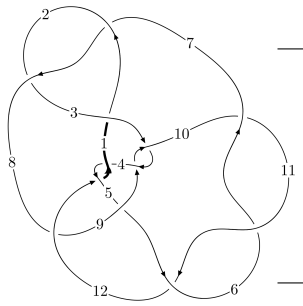
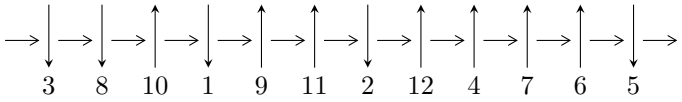
$12a_{0779}$ $(K12a_{0779})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 6.88485 \times 10^{431} u^{115} - 3.87633 \times 10^{432} u^{114} + \cdots + 3.06291 \times 10^{431} b - 2.47087 \times 10^{434}, \\ & - 5.92767 \times 10^{433} u^{115} + 3.93224 \times 10^{434} u^{114} + \cdots + 1.05058 \times 10^{434} a + 5.42461 \times 10^{436}, \\ & u^{116} - 5u^{115} + \cdots - 2832u + 343 \rangle \\ I_2^u = \langle & 1855003u^{23} + 3850943u^{22} + \cdots + 580499b - 34096, \\ & - 1681819u^{23} - 3462778u^{22} + \cdots + 580499a + 2264843,\ u^{24} + 2u^{23} + \cdots + 4u + 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 140 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. $\boldsymbol{I_1^u = \langle 6.88 \times 10^{431} u^{115} - 3.88 \times 10^{432} u^{114} + \cdots + 3.06 \times 10^{431} b - 2.47 \times 10^{434},\ -5.93 \times 10^{433} u^{115} + 3.93 \times 10^{434} u^{114} + \cdots + 1.05 \times 10^{434} a + 5.42 \times 10^{436},\ u^{116} - 5u^{115} + \cdots - 2832u + 343 \rangle}$

(i) Arc colorings

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

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

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

$$a_9 = \begin{pmatrix} 0.564229u^{115} - 3.74292u^{114} + \cdots + 4152.46u - 516.344 \\ -2.24781u^{115} + 12.6557u^{114} + \cdots - 7375.62u + 806.706 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.769698u^{115} - 2.99157u^{114} + \cdots - 1884.33u + 296.976 \\ 0.0652857u^{115} - 1.03586u^{114} + \cdots + 2918.89u - 366.646 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -1.68358u^{115} + 8.91278u^{114} + \cdots - 3223.16u + 290.361 \\ -2.24781u^{115} + 12.6557u^{114} + \cdots - 7375.62u + 806.706 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.420919u^{115} + 2.52270u^{114} + \cdots - 2342.59u + 278.230 \\ -0.0475151u^{115} + 2.30589u^{114} + \cdots - 7464.20u + 932.666 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.924423u^{115} + 5.60598u^{114} + \cdots - 5327.66u + 619.644 \\ 1.79779u^{115} - 6.60342u^{114} + \cdots - 5888.60u + 840.649 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -1.62730u^{115} + 8.21029u^{114} + \cdots - 1807.94u + 123.073 \\ -2.34870u^{115} + 13.8153u^{114} + \cdots - 9764.88u + 1104.64 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.497517u^{115} - 2.20985u^{114} + \cdots - 645.413u + 126.490 \\ 1.53087u^{115} - 5.93445u^{114} + \cdots - 3764.95u + 555.806 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1.05201u^{115} - 5.46374u^{114} + \cdots + 1301.89u - 98.8604 \\ -1.21080u^{115} + 6.38599u^{114} + \cdots - 2257.71u + 215.936 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2.52986u^{115} + 14.3363u^{114} + \cdots - 6750.80u + 710.217$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{116} + 55u^{115} + \cdots + 2421167u + 130321$
c_2, c_7	$u^{116} + u^{115} + \cdots + 547u + 361$
c_3, c_9	$u^{116} + u^{115} + \cdots + 22041u + 2011$
c_4, c_{12}	$u^{116} - 5u^{115} + \cdots - 2832u + 343$
c_5	$u^{116} - 5u^{115} + \cdots - 1107u + 187$
c_6, c_{10}, c_{11}	$u^{116} - u^{115} + \cdots + 38u + 1$
c_8	$u^{116} - 7u^{115} + \cdots + 138u + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{116} + 25y^{115} + \cdots + 210895665369y + 16983563041$
c_2, c_7	$y^{116} - 55y^{115} + \cdots - 2421167y + 130321$
c_3, c_9	$y^{116} + 81y^{115} + \cdots - 27615419y + 4044121$
c_4, c_{12}	$y^{116} + 79y^{115} + \cdots + 1741556y + 117649$
c_5	$y^{116} + 25y^{115} + \cdots + 2122599y + 34969$
c_6, c_{10}, c_{11}	$y^{116} + 125y^{115} + \cdots - 102y + 1$
c_8	$y^{116} - y^{115} + \cdots - 6044y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.409569 + 0.907123I$ $a = -2.01997 + 0.05088I$ $b = 0.83294 - 1.17825I$	$-1.86572 - 6.39095I$	0
$u = 0.409569 - 0.907123I$ $a = -2.01997 - 0.05088I$ $b = 0.83294 + 1.17825I$	$-1.86572 + 6.39095I$	0
$u = -0.051479 + 1.007640I$ $a = -1.72227 + 0.05733I$ $b = 0.465110 + 0.900827I$	$2.87707 + 0.09899I$	0
$u = -0.051479 - 1.007640I$ $a = -1.72227 - 0.05733I$ $b = 0.465110 - 0.900827I$	$2.87707 - 0.09899I$	0
$u = 0.260354 + 0.979427I$ $a = 1.36571 - 1.49292I$ $b = -0.53216 + 1.67404I$	$-10.02800 - 0.07016I$	0
$u = 0.260354 - 0.979427I$ $a = 1.36571 + 1.49292I$ $b = -0.53216 - 1.67404I$	$-10.02800 + 0.07016I$	0
$u = 0.041554 + 0.981441I$ $a = 1.25681 - 0.65079I$ $b = -0.292649 - 1.018640I$	$-1.23558 - 2.86667I$	0
$u = 0.041554 - 0.981441I$ $a = 1.25681 + 0.65079I$ $b = -0.292649 + 1.018640I$	$-1.23558 + 2.86667I$	0
$u = 0.202903 + 1.010420I$ $a = 1.49197 + 0.54865I$ $b = -0.382921 + 1.237600I$	$0.05167 - 5.67442I$	0
$u = 0.202903 - 1.010420I$ $a = 1.49197 - 0.54865I$ $b = -0.382921 - 1.237600I$	$0.05167 + 5.67442I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.503544+0.920372I$ $a=-1.52903-0.29454I$ $b=\ 0.78301+1.19145I$	$-5.53049+2.90009I$	0
$u=-0.503544-0.920372I$ $a=-1.52903+0.29454I$ $b=\ 0.78301-1.19145I$	$-5.53049-2.90009I$	0
$u=\ 0.140919+0.937698I$ $a=-0.474152+0.068793I$ $b=\ 0.09114-1.51726I$	$-2.14817-2.46300I$	0
$u=\ 0.140919-0.937698I$ $a=-0.474152-0.068793I$ $b=\ 0.09114+1.51726I$	$-2.14817+2.46300I$	0
$u=\ 0.445329+0.807114I$ $a=\ 2.21366-0.14921I$ $b=-1.07064+1.30578I$	$-7.94577-7.95169I$	0
$u=\ 0.445329-0.807114I$ $a=\ 2.21366+0.14921I$ $b=-1.07064-1.30578I$	$-7.94577+7.95169I$	0
$u=\ 0.561423+0.719102I$ $a=\ 0.229909-1.017460I$ $b=\ 0.57464+1.51053I$	$-8.16272+3.81368I$	0
$u=\ 0.561423-0.719102I$ $a=\ 0.229909+1.017460I$ $b=\ 0.57464-1.51053I$	$-8.16272-3.81368I$	0
$u=\ 0.101956+0.894464I$ $a=\ 0.03995-1.44616I$ $b=\ 0.20096+2.25294I$	$-10.68630-1.41268I$	0
$u=\ 0.101956-0.894464I$ $a=\ 0.03995+1.44616I$ $b=\ 0.20096-2.25294I$	$-10.68630+1.41268I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.285737+1.062360I$ $a=\ \ 1.43340+0.26394I$ $b=-0.652105-0.911764I$	$0.73280+2.58634I$	0
$u=-0.285737-1.062360I$ $a=\ \ 1.43340-0.26394I$ $b=-0.652105+0.911764I$	$0.73280-2.58634I$	0
$u=\ \ 0.885471+0.145082I$ $a=\ \ 0.412793-0.412013I$ $b=-0.14526-1.48710I$	$-14.2902+2.7834I$	0
$u=\ \ 0.885471-0.145082I$ $a=\ \ 0.412793+0.412013I$ $b=-0.14526+1.48710I$	$-14.2902-2.7834I$	0
$u=\ \ 0.221965+1.092140I$ $a=-2.23578-0.60255I$ $b=\ \ 0.496538-1.125820I$	$-4.78348-8.22862I$	0
$u=\ \ 0.221965-1.092140I$ $a=-2.23578+0.60255I$ $b=\ \ 0.496538+1.125820I$	$-4.78348+8.22862I$	0
$u=-1.132100+0.013682I$ $a=-0.174521+0.095539I$ $b=\ \ 0.314944+1.253880I$	$-8.47530+6.05820I$	0
$u=-1.132100-0.013682I$ $a=-0.174521-0.095539I$ $b=\ \ 0.314944-1.253880I$	$-8.47530-6.05820I$	0
$u=\ \ 0.538184+0.997971I$ $a=\ \ 1.76839+0.25438I$ $b=-0.456531+0.808670I$	$-3.66759-5.62941I$	0
$u=\ \ 0.538184-0.997971I$ $a=\ \ 1.76839-0.25438I$ $b=-0.456531-0.808670I$	$-3.66759+5.62941I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.706435+0.487816I$ $a=-0.465256-0.660091I$ $b=-0.294228+1.318680I$	$-6.78700+1.73848I$	0
$u=-0.706435-0.487816I$ $a=-0.465256+0.660091I$ $b=-0.294228-1.318680I$	$-6.78700-1.73848I$	0
$u=-1.153810+0.064473I$ $a=\ \ 0.074046-0.187720I$ $b=-0.211589-1.026870I$	$-1.90789+2.23662I$	0
$u=-1.153810-0.064473I$ $a=\ \ 0.074046+0.187720I$ $b=-0.211589+1.026870I$	$-1.90789-2.23662I$	0
$u=\ \ 0.188287+0.815622I$ $a=-1.57804+1.11916I$ $b=\ \ 0.282496-1.065040I$	$-2.35580+0.79081I$	0
$u=\ \ 0.188287-0.815622I$ $a=-1.57804-1.11916I$ $b=\ \ 0.282496+1.065040I$	$-2.35580-0.79081I$	0
$u=-0.495692+1.058710I$ $a=\ \ 1.345320-0.286453I$ $b=-0.838048-0.586095I$	$0.42195+3.22532I$	0
$u=-0.495692-1.058710I$ $a=\ \ 1.345320+0.286453I$ $b=-0.838048+0.586095I$	$0.42195-3.22532I$	0
$u=\ \ 0.493021+0.646908I$ $a=-0.366529+0.481797I$ $b=-0.443349-1.272600I$	$-2.59580+2.59905I$	0
$u=\ \ 0.493021-0.646908I$ $a=-0.366529-0.481797I$ $b=-0.443349+1.272600I$	$-2.59580-2.59905I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.314569 + 1.146580I$ $a = 1.56422 + 0.28417I$ $b = -1.205640 - 0.322496I$	$-0.96145 - 5.61573I$	0
$u = 0.314569 - 1.146580I$ $a = 1.56422 - 0.28417I$ $b = -1.205640 + 0.322496I$	$-0.96145 + 5.61573I$	0
$u = -0.675845 + 0.446626I$ $a = 0.583608 - 0.738152I$ $b = 0.334483 - 0.044965I$	$-0.61665 + 3.85155I$	0
$u = -0.675845 - 0.446626I$ $a = 0.583608 + 0.738152I$ $b = 0.334483 + 0.044965I$	$-0.61665 - 3.85155I$	0
$u = 0.612990 + 0.521527I$ $a = 0.000191 + 0.455866I$ $b = 0.320842 + 1.098120I$	$-5.12119 + 1.08110I$	0
$u = 0.612990 - 0.521527I$ $a = 0.000191 - 0.455866I$ $b = 0.320842 - 1.098120I$	$-5.12119 - 1.08110I$	0
$u = -0.758533 + 0.929461I$ $a = -0.062803 + 0.661059I$ $b = 0.395803 + 0.749331I$	$-5.22337 - 2.23877I$	0
$u = -0.758533 - 0.929461I$ $a = -0.062803 - 0.661059I$ $b = 0.395803 - 0.749331I$	$-5.22337 + 2.23877I$	0
$u = -0.095059 + 1.200970I$ $a = 1.72251 + 0.77105I$ $b = -0.560830 - 0.776543I$	$0.06022 + 2.23512I$	0
$u = -0.095059 - 1.200970I$ $a = 1.72251 - 0.77105I$ $b = -0.560830 + 0.776543I$	$0.06022 - 2.23512I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.501587+1.105030I$ $a=-1.73328+0.42631I$ $b=\ \ 1.226670+0.557369I$	$-4.60873+3.80362I$	0
$u=-0.501587-1.105030I$ $a=-1.73328-0.42631I$ $b=\ \ 1.226670-0.557369I$	$-4.60873-3.80362I$	0
$u=\ \ 1.222050+0.072327I$ $a=\ \ 0.058543-0.153524I$ $b=-0.478842-1.315220I$	$-10.9380+11.7611I$	0
$u=\ \ 1.222050-0.072327I$ $a=\ \ 0.058543+0.153524I$ $b=-0.478842+1.315220I$	$-10.9380-11.7611I$	0
$u=\ \ 0.521319+1.119070I$ $a=\ \ 1.65174-0.10532I$ $b=-0.351627+1.058020I$	$-3.47981-5.73763I$	0
$u=\ \ 0.521319-1.119070I$ $a=\ \ 1.65174+0.10532I$ $b=-0.351627-1.058020I$	$-3.47981+5.73763I$	0
$u=-0.641313+0.400176I$ $a=\ \ 0.252509+0.225583I$ $b=\ \ 0.144502-0.896459I$	$-1.46462+1.24511I$	0
$u=-0.641313-0.400176I$ $a=\ \ 0.252509-0.225583I$ $b=\ \ 0.144502+0.896459I$	$-1.46462-1.24511I$	0
$u=-0.717476+0.236422I$ $a=\ \ 0.081001-0.458228I$ $b=-0.927579+0.615146I$	$-7.09985+0.73424I$	0
$u=-0.717476-0.236422I$ $a=\ \ 0.081001+0.458228I$ $b=-0.927579-0.615146I$	$-7.09985-0.73424I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.136630 + 0.523014I$ $a = -0.013512 + 0.399591I$ $b = -0.049976 + 1.187310I$	$-5.46387 + 0.13664I$	0
$u = 1.136630 - 0.523014I$ $a = -0.013512 - 0.399591I$ $b = -0.049976 - 1.187310I$	$-5.46387 - 0.13664I$	0
$u = 0.248042 + 1.229530I$ $a = -1.274570 - 0.185424I$ $b = 1.068330 + 0.335610I$	$5.08162 - 2.28235I$	0
$u = 0.248042 - 1.229530I$ $a = -1.274570 + 0.185424I$ $b = 1.068330 - 0.335610I$	$5.08162 + 2.28235I$	0
$u = -0.375666 + 1.218700I$ $a = -1.54401 + 0.39540I$ $b = 1.58327 - 0.17065I$	$-2.81317 + 10.43530I$	0
$u = -0.375666 - 1.218700I$ $a = -1.54401 - 0.39540I$ $b = 1.58327 + 0.17065I$	$-2.81317 - 10.43530I$	0
$u = -0.147596 + 1.286130I$ $a = -0.766636 + 0.994869I$ $b = 0.706994 - 0.306823I$	$-2.35177 + 3.66786I$	0
$u = -0.147596 - 1.286130I$ $a = -0.766636 - 0.994869I$ $b = 0.706994 + 0.306823I$	$-2.35177 - 3.66786I$	0
$u = -0.356958 + 1.280670I$ $a = 1.195400 - 0.209196I$ $b = -1.186940 + 0.106717I$	$4.16443 + 7.44120I$	0
$u = -0.356958 - 1.280670I$ $a = 1.195400 + 0.209196I$ $b = -1.186940 - 0.106717I$	$4.16443 - 7.44120I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.089065 + 0.662991I$ $a = 2.41144 - 0.76844I$ $b = 0.120157 + 0.745016I$	$-1.13026 + 3.89133I$	$2.00000 - 4.56275I$
$u = 0.089065 - 0.662991I$ $a = 2.41144 + 0.76844I$ $b = 0.120157 - 0.745016I$	$-1.13026 - 3.89133I$	$2.00000 + 4.56275I$
$u = -0.540902 + 0.380250I$ $a = -0.053357 + 0.528328I$ $b = 0.369496 - 0.410130I$	$-1.36642 + 0.97967I$	$-2.29708 + 0.I$
$u = -0.540902 - 0.380250I$ $a = -0.053357 - 0.528328I$ $b = 0.369496 + 0.410130I$	$-1.36642 - 0.97967I$	$-2.29708 + 0.I$
$u = 0.474923 + 1.253100I$ $a = -1.71051 + 0.60974I$ $b = 0.308562 - 1.299050I$	$-10.82760 - 7.71594I$	0
$u = 0.474923 - 1.253100I$ $a = -1.71051 - 0.60974I$ $b = 0.308562 + 1.299050I$	$-10.82760 + 7.71594I$	0
$u = 0.130933 + 1.335010I$ $a = 0.869481 - 0.047104I$ $b = -0.790075 - 0.270338I$	$4.40472 + 1.93956I$	0
$u = 0.130933 - 1.335010I$ $a = 0.869481 + 0.047104I$ $b = -0.790075 + 0.270338I$	$4.40472 - 1.93956I$	0
$u = -0.052598 + 0.637492I$ $a = -3.18846 + 0.30115I$ $b = -0.300239 - 0.586084I$	$-6.71984 + 6.68964I$	$-5.17656 - 3.95444I$
$u = -0.052598 - 0.637492I$ $a = -3.18846 - 0.30115I$ $b = -0.300239 + 0.586084I$	$-6.71984 - 6.68964I$	$-5.17656 + 3.95444I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.162785+1.352920I$ $a=-0.709797-1.040140I$ $b=\ \ 0.232685+0.602892I$	$4.08783+3.55610I$	0
$u=-0.162785-1.352920I$ $a=-0.709797+1.040140I$ $b=\ \ 0.232685-0.602892I$	$4.08783-3.55610I$	0
$u=\ \ 0.831498+1.098950I$ $a=-0.862766-0.163702I$ $b=-0.015215-0.898719I$	$-0.79635-1.31956I$	0
$u=\ \ 0.831498-1.098950I$ $a=-0.862766+0.163702I$ $b=-0.015215+0.898719I$	$-0.79635+1.31956I$	0
$u=-0.134503+1.385360I$ $a=\ \ 0.64960+1.64190I$ $b=-0.094758-0.927333I$	$-0.61050+4.18250I$	0
$u=-0.134503-1.385360I$ $a=\ \ 0.64960-1.64190I$ $b=-0.094758+0.927333I$	$-0.61050-4.18250I$	0
$u=-0.281612+1.377010I$ $a=-0.676347-0.175569I$ $b=\ \ 0.542832+0.009289I$	$4.41115+3.58195I$	0
$u=-0.281612-1.377010I$ $a=-0.676347+0.175569I$ $b=\ \ 0.542832-0.009289I$	$4.41115-3.58195I$	0
$u=\ \ 1.42237+0.05110I$ $a=\ \ 0.008761+0.230808I$ $b=\ \ 0.317159+1.184510I$	$-3.86253+6.81154I$	0
$u=\ \ 1.42237-0.05110I$ $a=\ \ 0.008761-0.230808I$ $b=\ \ 0.317159-1.184510I$	$-3.86253-6.81154I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.075067 + 0.568175I$ $a = -0.58564 + 2.12480I$ $b = 0.275906 - 0.153836I$	$-2.06664 + 2.10664I$	$5.02490 - 3.34646I$
$u = 0.075067 - 0.568175I$ $a = -0.58564 - 2.12480I$ $b = 0.275906 + 0.153836I$	$-2.06664 - 2.10664I$	$5.02490 + 3.34646I$
$u = -0.518479 + 0.205658I$ $a = -0.78785 + 1.75883I$ $b = -0.791242 - 0.164937I$	$-6.66227 + 6.93678I$	$-4.20157 - 5.61597I$
$u = -0.518479 - 0.205658I$ $a = -0.78785 - 1.75883I$ $b = -0.791242 + 0.164937I$	$-6.66227 - 6.93678I$	$-4.20157 + 5.61597I$
$u = -0.55937 + 1.35022I$ $a = -1.279380 - 0.188520I$ $b = 0.611151 + 1.191490I$	$2.36846 + 8.19603I$	0
$u = -0.55937 - 1.35022I$ $a = -1.279380 + 0.188520I$ $b = 0.611151 - 1.191490I$	$2.36846 - 8.19603I$	0
$u = -0.55803 + 1.36321I$ $a = 1.42052 + 0.34970I$ $b = -0.62721 - 1.29439I$	$-4.20168 + 11.99250I$	0
$u = -0.55803 - 1.36321I$ $a = 1.42052 - 0.34970I$ $b = -0.62721 + 1.29439I$	$-4.20168 - 11.99250I$	0
$u = -0.55819 + 1.37220I$ $a = 0.989305 + 0.097133I$ $b = -0.572337 - 1.106000I$	$1.94779 + 3.09975I$	0
$u = -0.55819 - 1.37220I$ $a = 0.989305 - 0.097133I$ $b = -0.572337 + 1.106000I$	$1.94779 - 3.09975I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.61256 + 1.35950I$ $a = -1.45970 + 0.22647I$ $b = 0.71654 - 1.44131I$	$-6.9259 - 18.1428I$	0
$u = 0.61256 - 1.35950I$ $a = -1.45970 - 0.22647I$ $b = 0.71654 + 1.44131I$	$-6.9259 + 18.1428I$	0
$u = 0.64402 + 1.36852I$ $a = 1.249830 - 0.107751I$ $b = -0.59786 + 1.36105I$	$0.18188 - 13.69850I$	0
$u = 0.64402 - 1.36852I$ $a = 1.249830 + 0.107751I$ $b = -0.59786 - 1.36105I$	$0.18188 + 13.69850I$	0
$u = 0.392668 + 0.163972I$ $a = -1.49837 - 1.08992I$ $b = 0.721043 + 0.333801I$	$-3.79779 + 2.66741I$	$0.79178 - 2.69043I$
$u = 0.392668 - 0.163972I$ $a = -1.49837 + 1.08992I$ $b = 0.721043 - 0.333801I$	$-3.79779 - 2.66741I$	$0.79178 + 2.69043I$
$u = -0.74973 + 1.39240I$ $a = -0.486709 - 0.310219I$ $b = 0.064725 + 0.949769I$	$-4.32130 + 0.40236I$	0
$u = -0.74973 - 1.39240I$ $a = -0.486709 + 0.310219I$ $b = 0.064725 - 0.949769I$	$-4.32130 - 0.40236I$	0
$u = 0.72972 + 1.42530I$ $a = -0.879443 + 0.051024I$ $b = 0.397202 - 1.309390I$	$0.35012 - 7.49098I$	0
$u = 0.72972 - 1.42530I$ $a = -0.879443 - 0.051024I$ $b = 0.397202 + 1.309390I$	$0.35012 + 7.49098I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.182486 + 0.127577I$ $a = 1.08969 - 2.67495I$ $b = -0.430323 + 0.131089I$	$1.065150 - 0.314626I$	$9.21410 + 1.10091I$
$u = 0.182486 - 0.127577I$ $a = 1.08969 + 2.67495I$ $b = -0.430323 - 0.131089I$	$1.065150 + 0.314626I$	$9.21410 - 1.10091I$
$u = 0.83659 + 1.64281I$ $a = 0.318457 - 0.307128I$ $b = 0.210469 + 0.999293I$	$-5.88487 + 4.65483I$	0
$u = 0.83659 - 1.64281I$ $a = 0.318457 + 0.307128I$ $b = 0.210469 - 0.999293I$	$-5.88487 - 4.65483I$	0
$u = 0.24660 + 1.94256I$ $a = 0.099833 - 0.478156I$ $b = 0.08957 + 1.43375I$	$-8.07747 - 1.26069I$	0
$u = 0.24660 - 1.94256I$ $a = 0.099833 + 0.478156I$ $b = 0.08957 - 1.43375I$	$-8.07747 + 1.26069I$	0

II.

$\boldsymbol{I_2^u = \langle 1.86\times 10^6 u^{23} + 3.85\times 10^6 u^{22} + \cdots + 5.80\times 10^5 b - 3.41\times 10^4,\ -1.68\times 10^6 u^{23} - 3.46\times 10^6 u^{22} + \cdots + 5.80\times 10^5 a + 2.26\times 10^6,\ u^{24} + 2u^{23} + \cdots + 4u + 1\rangle}$

(i) Arc colorings

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

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

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

$$a_9 = \begin{pmatrix} 2.89720u^{23} + 5.96517u^{22} + \cdots - 7.12292u - 3.90155 \\ -3.19553u^{23} - 6.63385u^{22} + \cdots - 5.91528u + 0.0587357 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1.09718u^{23} + 2.85785u^{22} + \cdots + 0.0368338u + 0.467575 \\ u^{22} + 2u^{21} + \cdots + 4u + 2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.298336u^{23} - 0.668675u^{22} + \cdots - 13.0382u - 3.84281 \\ -3.19553u^{23} - 6.63385u^{22} + \cdots - 5.91528u + 0.0587357 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.375902u^{23} + 1.24762u^{22} + \cdots + 8.99326u + 2.57929 \\ 0.170457u^{23} - 2.94487u^{22} + \cdots - 19.3318u - 5.78160 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.157499u^{23} + 1.98127u^{22} + \cdots + 2.53236u + 0.373847 \\ 1.66627u^{23} + 0.0991199u^{22} + \cdots - 15.2561u - 5.15750 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.211192u^{23} + 0.278955u^{22} + \cdots - 12.0156u - 3.98457 \\ -4.80397u^{23} - 9.94371u^{22} + \cdots - 6.86514u + 0.289923 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.199263u^{23} - 0.233156u^{22} + \cdots + 5.29156u + 0.376562 \\ 0.596878u^{23} - 1.21652u^{22} + \cdots - 19.1492u - 4.93941 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -1.17909u^{23} - 2.57707u^{22} + \cdots - 13.1205u - 3.43340 \\ 2.15769u^{23} + 4.63645u^{22} + \cdots + 7.84946u + 0.726757 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{1594471}{580499}u^{23} - \frac{169294}{580499}u^{22} + \cdots - \frac{6694565}{580499}u - \frac{5053298}{580499}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{24} - 12u^{23} + \cdots - 17u + 1$
c_2	$u^{24} - 6u^{22} + \cdots + u + 1$
c_3	$u^{24} + 12u^{22} + \cdots + u + 1$
c_4	$u^{24} + 2u^{23} + \cdots + 4u + 1$
c_5	$u^{24} + 6u^{22} + \cdots + 3u + 1$
c_6	$u^{24} + 16u^{22} + \cdots + 6u^2 + 1$
c_7	$u^{24} - 6u^{22} + \cdots - u + 1$
c_8	$u^{24} - 3u^{22} + \cdots + 4u + 1$
c_9	$u^{24} + 12u^{22} + \cdots - u + 1$
c_{10}, c_{11}	$u^{24} + 16u^{22} + \cdots + 6u^2 + 1$
c_{12}	$u^{24} - 2u^{23} + \cdots - 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{24} + 12y^{23} + \cdots - 5y + 1$
c_2, c_7	$y^{24} - 12y^{23} + \cdots - 17y + 1$
c_3, c_9	$y^{24} + 24y^{23} + \cdots + 19y + 1$
c_4, c_{12}	$y^{24} + 22y^{23} + \cdots + 10y + 1$
c_5	$y^{24} + 12y^{23} + \cdots + 17y + 1$
c_6, c_{10}, c_{11}	$y^{24} + 32y^{23} + \cdots + 12y + 1$
c_8	$y^{24} - 6y^{23} + \cdots - 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.433597 + 0.907395I$ $a = 1.77366 + 0.44519I$ $b = -0.531095 + 1.096690I$	$-1.32018 - 5.65753I$	$1.33295 + 5.95486I$
$u = 0.433597 - 0.907395I$ $a = 1.77366 - 0.44519I$ $b = -0.531095 - 1.096690I$	$-1.32018 + 5.65753I$	$1.33295 - 5.95486I$
$u = 0.261836 + 0.903073I$ $a = -2.97112 - 0.28296I$ $b = 0.712705 - 0.854952I$	$-6.15347 - 7.72000I$	$-1.95647 + 8.24582I$
$u = 0.261836 - 0.903073I$ $a = -2.97112 + 0.28296I$ $b = 0.712705 + 0.854952I$	$-6.15347 + 7.72000I$	$-1.95647 - 8.24582I$
$u = -0.499306 + 0.943118I$ $a = 1.69149 - 0.58503I$ $b = -0.690190 - 0.337371I$	$-2.93839 + 5.04933I$	$2.47105 - 2.99193I$
$u = -0.499306 - 0.943118I$ $a = 1.69149 + 0.58503I$ $b = -0.690190 + 0.337371I$	$-2.93839 - 5.04933I$	$2.47105 + 2.99193I$
$u = -0.814232 + 0.801984I$ $a = -0.007661 - 0.225182I$ $b = 0.200228 - 0.683113I$	$-3.42124 - 0.35061I$	$-0.172036 + 1.200900I$
$u = -0.814232 - 0.801984I$ $a = -0.007661 + 0.225182I$ $b = 0.200228 + 0.683113I$	$-3.42124 + 0.35061I$	$-0.172036 - 1.200900I$
$u = -0.599290 + 1.081750I$ $a = -1.099670 + 0.317756I$ $b = 0.671158 + 0.746962I$	$0.65484 + 2.66887I$	$2.88282 + 1.54107I$
$u = -0.599290 - 1.081750I$ $a = -1.099670 - 0.317756I$ $b = 0.671158 - 0.746962I$	$0.65484 - 2.66887I$	$2.88282 - 1.54107I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.022564 + 0.743139I$ $a = -0.73988 + 1.97353I$ $b = 0.17876 - 2.13779I$	$-11.09690 + 0.93611I$	$-9.79182 + 1.48612I$
$u = 0.022564 - 0.743139I$ $a = -0.73988 - 1.97353I$ $b = 0.17876 + 2.13779I$	$-11.09690 - 0.93611I$	$-9.79182 - 1.48612I$
$u = -0.146598 + 1.265960I$ $a = 0.97596 + 1.65199I$ $b = -0.143282 - 0.550800I$	$0.37323 + 3.99230I$	$7.53226 - 4.96445I$
$u = -0.146598 - 1.265960I$ $a = 0.97596 - 1.65199I$ $b = -0.143282 + 0.550800I$	$0.37323 - 3.99230I$	$7.53226 + 4.96445I$
$u = 0.637787 + 1.178700I$ $a = -0.394437 + 0.087108I$ $b = -0.362252 - 0.928405I$	$-5.19307 + 4.75565I$	$0.05342 - 4.75175I$
$u = 0.637787 - 1.178700I$ $a = -0.394437 - 0.087108I$ $b = -0.362252 + 0.928405I$	$-5.19307 - 4.75565I$	$0.05342 + 4.75175I$
$u = -0.18159 + 1.40564I$ $a = -0.518560 - 0.909074I$ $b = 0.135248 + 0.620778I$	$3.86167 + 3.48429I$	$-13.33273 - 0.38958I$
$u = -0.18159 - 1.40564I$ $a = -0.518560 + 0.909074I$ $b = 0.135248 - 0.620778I$	$3.86167 - 3.48429I$	$-13.33273 + 0.38958I$
$u = 0.162130 + 0.482527I$ $a = 1.30100 - 1.18468I$ $b = 0.056124 + 1.351600I$	$-3.27431 + 1.55285I$	$-6.19234 - 0.27854I$
$u = 0.162130 - 0.482527I$ $a = 1.30100 + 1.18468I$ $b = 0.056124 - 1.351600I$	$-3.27431 - 1.55285I$	$-6.19234 + 0.27854I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.407301+0.152240I$ $a=-1.93217-0.65930I$ $b=-0.113456-0.845128I$	$-3.08494-2.15563I$	$-4.35890+3.65341I$
$u=-0.407301-0.152240I$ $a=-1.93217+0.65930I$ $b=-0.113456+0.845128I$	$-3.08494+2.15563I$	$-4.35890-3.65341I$
$u=\ \ 0.13040+1.75531I$ $a=-0.078629+0.576340I$ $b=-0.11395-1.50132I$	$-7.88566-1.33521I$	$10.5318+10.1223I$
$u=\ \ 0.13040-1.75531I$ $a=-0.078629-0.576340I$ $b=-0.11395+1.50132I$	$-7.88566+1.33521I$	$10.5318-10.1223I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{24}-12u^{23}+\cdots-17u+1)$ $\cdot(u^{116}+55u^{115}+\cdots+2421167u+130321)$
c_2	$(u^{24}-6u^{22}+\cdots+u+1)(u^{116}+u^{115}+\cdots+547u+361)$
c_3	$(u^{24}+12u^{22}+\cdots+u+1)(u^{116}+u^{115}+\cdots+22041u+2011)$
c_4	$(u^{24}+2u^{23}+\cdots+4u+1)(u^{116}-5u^{115}+\cdots-2832u+343)$
c_5	$(u^{24}+6u^{22}+\cdots+3u+1)(u^{116}-5u^{115}+\cdots-1107u+187)$
c_6	$(u^{24}+16u^{22}+\cdots+6u^2+1)(u^{116}-u^{115}+\cdots+38u+1)$
c_7	$(u^{24}-6u^{22}+\cdots-u+1)(u^{116}+u^{115}+\cdots+547u+361)$
c_8	$(u^{24}-3u^{22}+\cdots+4u+1)(u^{116}-7u^{115}+\cdots+138u+4)$
c_9	$(u^{24}+12u^{22}+\cdots-u+1)(u^{116}+u^{115}+\cdots+22041u+2011)$
c_{10}, c_{11}	$(u^{24}+16u^{22}+\cdots+6u^2+1)(u^{116}-u^{115}+\cdots+38u+1)$
c_{12}	$(u^{24}-2u^{23}+\cdots-4u+1)(u^{116}-5u^{115}+\cdots-2832u+343)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{24}+12y^{23}+\cdots-5y+1)$ $\cdot(y^{116}+25y^{115}+\cdots+210895665369y+16983563041)$
c_2, c_7	$(y^{24}-12y^{23}+\cdots-17y+1)$ $\cdot(y^{116}-55y^{115}+\cdots-2421167y+130321)$
c_3, c_9	$(y^{24}+24y^{23}+\cdots+19y+1)$ $\cdot(y^{116}+81y^{115}+\cdots-27615419y+4044121)$
c_4, c_{12}	$(y^{24}+22y^{23}+\cdots+10y+1)$ $\cdot(y^{116}+79y^{115}+\cdots+1741556y+117649)$
c_5	$(y^{24}+12y^{23}+\cdots+17y+1)$ $\cdot(y^{116}+25y^{115}+\cdots+2122599y+34969)$
c_6, c_{10}, c_{11}	$(y^{24}+32y^{23}+\cdots+12y+1)(y^{116}+125y^{115}+\cdots-102y+1)$
c_8	$(y^{24}-6y^{23}+\cdots-4y+1)(y^{116}-y^{115}+\cdots-6044y+16)$