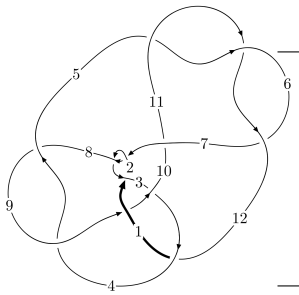
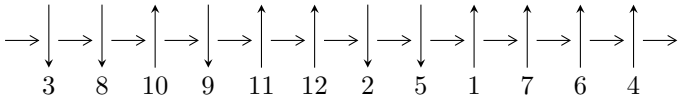
$12a_{0747}$ $(K12a_{0747})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 2.65000 \times 10^{193} u^{128} + 2.34665 \times 10^{193} u^{127} + \cdots + 7.02232 \times 10^{193} b + 2.48355 \times 10^{193},$$
$$9.06725 \times 10^{193} u^{128} - 2.07720 \times 10^{193} u^{127} + \cdots + 7.02232 \times 10^{193} a - 8.70594 \times 10^{193},\ u^{129} + u^{128} + \cdots -$$
$$I_2^u = \langle -u^{23} + 11u^{21} + \cdots + b - 1,\ -3u^{23} + 32u^{21} + \cdots + a - 1,\ u^{24} - 12u^{22} + \cdots + 2u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 153 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. $\boldsymbol{I_1^u = \langle 2.65 \times 10^{193} u^{128} + 2.35 \times 10^{193} u^{127} + \cdots + 7.02 \times 10^{193} b + 2.48 \times 10^{193},\ 9.07 \times 10^{193} u^{128} - 2.08 \times 10^{193} u^{127} + \cdots + 7.02 \times 10^{193} a - 8.71 \times 10^{193},\ u^{129} + u^{128} + \cdots - 7u - 1 \rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -1.29120u^{128} + 0.295799u^{127} + \cdots - 1.43860u + 1.23975 \\ -0.377368u^{128} - 0.334169u^{127} + \cdots + 6.73997u - 0.353666 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.871040u^{128} + 0.866622u^{127} + \cdots - 3.40452u + 4.53826 \\ -0.636934u^{128} - 0.772674u^{127} + \cdots + 13.3430u + 3.37451 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -1.41319u^{128} - 1.35974u^{127} + \cdots + 33.0349u + 4.89525 \\ -0.339303u^{128} - 0.689419u^{127} + \cdots + 12.1122u + 0.840007 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -1.66857u^{128} - 0.0383699u^{127} + \cdots + 5.30137u + 0.886086 \\ -0.377368u^{128} - 0.334169u^{127} + \cdots + 6.73997u - 0.353666 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^5 + 2u^3 - u \\ u^7 - 3u^5 + 2u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1.45033u^{128} + 0.399931u^{127} + \cdots - 5.09571u + 4.28260 \\ -1.10470u^{128} - 0.557067u^{127} + \cdots + 15.0987u + 3.65637 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.478498u^{128} + 0.430788u^{127} + \cdots + 3.50990u + 2.48438 \\ 0.0216946u^{128} - 0.0576587u^{127} + \cdots + 1.10851u + 1.82083 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -3.51289u^{128} - 1.95504u^{127} + \cdots + 86.3712u + 22.6515$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{129} + 53u^{128} + \cdots + 241100u + 10201$
c_2, c_7	$u^{129} + u^{128} + \cdots - 268u - 101$
c_3	$u^{129} - 6u^{127} + \cdots - 141u - 9$
c_4, c_8	$u^{129} + 2u^{128} + \cdots - 21685u - 15853$
c_5, c_6, c_{11}	$u^{129} + u^{128} + \cdots - 7u - 1$
c_9	$u^{129} - 7u^{128} + \cdots + 31027u + 4567$
c_{10}	$u^{129} - 3u^{128} + \cdots + 22569u + 1491$
c_{12}	$u^{129} + 11u^{128} + \cdots - 170u + 29$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{129} + 59y^{128} + \cdots + 6188411064y - 104060401$
c_2, c_7	$y^{129} - 53y^{128} + \cdots + 241100y - 10201$
c_3	$y^{129} - 12y^{128} + \cdots + 369y - 81$
c_4, c_8	$y^{129} + 92y^{128} + \cdots - 5214202691y - 251317609$
c_5, c_6, c_{11}	$y^{129} - 117y^{128} + \cdots - 19y - 1$
c_9	$y^{129} - 37y^{128} + \cdots + 3096724221y - 20857489$
c_{10}	$y^{129} + 15y^{128} + \cdots + 34052817y - 2223081$
c_{12}	$y^{129} - 17y^{128} + \cdots + 61496y - 841$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.051970 + 0.993015I$ $a = 0.0380113 - 0.0039953I$ $b = 0.098904 + 0.986419I$	$-1.64979 - 2.02859I$	0
$u = 0.051970 - 0.993015I$ $a = 0.0380113 + 0.0039953I$ $b = 0.098904 - 0.986419I$	$-1.64979 + 2.02859I$	0
$u = 0.837971 + 0.567834I$ $a = 0.477899 + 0.591226I$ $b = -0.496140 - 1.298570I$	$3.24310 - 9.68057I$	0
$u = 0.837971 - 0.567834I$ $a = 0.477899 - 0.591226I$ $b = -0.496140 + 1.298570I$	$3.24310 + 9.68057I$	0
$u = 1.025480 + 0.237033I$ $a = -0.162210 + 1.010220I$ $b = -0.520771 - 1.046700I$	$-0.73696 - 2.43278I$	0
$u = 1.025480 - 0.237033I$ $a = -0.162210 - 1.010220I$ $b = -0.520771 + 1.046700I$	$-0.73696 + 2.43278I$	0
$u = -0.509412 + 0.784048I$ $a = 0.783191 - 0.998753I$ $b = 0.321116 + 0.820314I$	$-1.33885 - 5.56038I$	0
$u = -0.509412 - 0.784048I$ $a = 0.783191 + 0.998753I$ $b = 0.321116 - 0.820314I$	$-1.33885 + 5.56038I$	0
$u = 1.053430 + 0.175522I$ $a = -0.353167 - 0.153552I$ $b = 0.059796 - 1.051140I$	$3.69303 - 2.14193I$	0
$u = 1.053430 - 0.175522I$ $a = -0.353167 + 0.153552I$ $b = 0.059796 + 1.051140I$	$3.69303 + 2.14193I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.732149 + 0.526761I$ $a = -0.772088 - 1.096370I$ $b = -0.420090 + 0.967338I$	$0.11355 + 2.39050I$	0
$u = 0.732149 - 0.526761I$ $a = -0.772088 + 1.096370I$ $b = -0.420090 - 0.967338I$	$0.11355 - 2.39050I$	0
$u = -0.732811 + 0.525422I$ $a = -0.659964 + 0.737980I$ $b = 0.398953 - 1.261590I$	$4.91057 + 4.11692I$	0
$u = -0.732811 - 0.525422I$ $a = -0.659964 - 0.737980I$ $b = 0.398953 + 1.261590I$	$4.91057 - 4.11692I$	0
$u = 0.309866 + 0.831253I$ $a = 1.243500 + 0.568619I$ $b = 0.58944 - 1.35556I$	$1.5905 + 14.5341I$	0
$u = 0.309866 - 0.831253I$ $a = 1.243500 - 0.568619I$ $b = 0.58944 + 1.35556I$	$1.5905 - 14.5341I$	0
$u = 1.113440 + 0.093009I$ $a = -0.227047 + 0.880009I$ $b = 0.804580 - 0.313020I$	$1.64515 - 0.14115I$	0
$u = 1.113440 - 0.093009I$ $a = -0.227047 - 0.880009I$ $b = 0.804580 + 0.313020I$	$1.64515 + 0.14115I$	0
$u = -1.124460 + 0.151681I$ $a = 0.682863 + 0.052497I$ $b = -0.586833 + 1.072260I$	$4.88050 + 2.27576I$	0
$u = -1.124460 - 0.151681I$ $a = 0.682863 - 0.052497I$ $b = -0.586833 - 1.072260I$	$4.88050 - 2.27576I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.321690+0.772157I$ $a=-1.206270+0.699130I$ $b=-0.50767-1.34684I$	$3.55448-8.60382I$	0
$u=-0.321690-0.772157I$ $a=-1.206270-0.699130I$ $b=-0.50767+1.34684I$	$3.55448+8.60382I$	0
$u=-0.242794+0.796642I$ $a=0.428709-0.858731I$ $b=0.107481+0.811941I$	$-2.10827+0.88291I$	0
$u=-0.242794-0.796642I$ $a=0.428709+0.858731I$ $b=0.107481-0.811941I$	$-2.10827-0.88291I$	0
$u=0.228527+0.798986I$ $a=0.188913-0.123671I$ $b=0.409325+0.670158I$	$-1.67570+2.20914I$	0
$u=0.228527-0.798986I$ $a=0.188913+0.123671I$ $b=0.409325-0.670158I$	$-1.67570-2.20914I$	0
$u=-0.826691+0.041202I$ $a=-0.06131+1.44905I$ $b=-0.712028-0.154552I$	$-0.54483+4.69995I$	0
$u=-0.826691-0.041202I$ $a=-0.06131-1.44905I$ $b=-0.712028+0.154552I$	$-0.54483-4.69995I$	0
$u=-1.143590+0.286522I$ $a=-0.365462+0.654972I$ $b=-0.781152-0.421442I$	$-2.66439-2.38185I$	0
$u=-1.143590-0.286522I$ $a=-0.365462-0.654972I$ $b=-0.781152+0.421442I$	$-2.66439+2.38185I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.209850+0.231073I$ $a=-0.006204-1.069620I$ $b=\ \ 0.580455+0.696591I$	$2.68604-4.47896I$	0
$u=-1.209850-0.231073I$ $a=-0.006204+1.069620I$ $b=\ \ 0.580455-0.696591I$	$2.68604+4.47896I$	0
$u=-0.093034+0.753912I$ $a=\ \ 0.692986-0.562528I$ $b=\ \ 0.787377-0.323100I$	$-5.84209-1.43644I$	$-6.45657+1.49198I$
$u=-0.093034-0.753912I$ $a=\ \ 0.692986+0.562528I$ $b=\ \ 0.787377+0.323100I$	$-5.84209+1.43644I$	$-6.45657-1.49198I$
$u=-0.241534+0.709885I$ $a=\ \ 0.876196-0.390382I$ $b=\ \ 1.218590-0.100809I$	$-2.40215-8.26114I$	$-0.87236+9.14716I$
$u=-0.241534-0.709885I$ $a=\ \ 0.876196+0.390382I$ $b=\ \ 1.218590+0.100809I$	$-2.40215+8.26114I$	$-0.87236-9.14716I$
$u=\ \ 0.399018+0.623768I$ $a=-0.874191-0.740196I$ $b=-0.243009+0.990794I$	$0.71421+1.90496I$	$2.00000-4.65501I$
$u=\ \ 0.399018-0.623768I$ $a=-0.874191+0.740196I$ $b=-0.243009-0.990794I$	$0.71421-1.90496I$	$2.00000+4.65501I$
$u=\ \ 0.181659+0.706610I$ $a=\ \ 1.65849+0.89371I$ $b=\ \ 0.450536-1.148240I$	$-3.24329+6.01733I$	$-2.16925-7.40566I$
$u=\ \ 0.181659-0.706610I$ $a=\ \ 1.65849-0.89371I$ $b=\ \ 0.450536+1.148240I$	$-3.24329-6.01733I$	$-2.16925+7.40566I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.185623 + 0.701396I$ $a = 1.86550 - 0.58997I$ $b = 0.165893 - 1.071950I$	$1.21465 + 5.56964I$	$5.61858 - 8.19173I$
$u = 0.185623 - 0.701396I$ $a = 1.86550 + 0.58997I$ $b = 0.165893 + 1.071950I$	$1.21465 - 5.56964I$	$5.61858 + 8.19173I$
$u = 1.144770 + 0.562586I$ $a = -0.505538 - 0.793395I$ $b = -0.235197 + 1.068220I$	$1.70104 + 7.45697I$	0
$u = 1.144770 - 0.562586I$ $a = -0.505538 + 0.793395I$ $b = -0.235197 - 1.068220I$	$1.70104 - 7.45697I$	0
$u = 0.295679 + 0.651657I$ $a = -1.48088 - 0.06488I$ $b = -0.57041 + 1.38485I$	$2.72621 + 0.81441I$	$6.95955 - 1.10717I$
$u = 0.295679 - 0.651657I$ $a = -1.48088 + 0.06488I$ $b = -0.57041 - 1.38485I$	$2.72621 - 0.81441I$	$6.95955 + 1.10717I$
$u = -0.706698 + 0.009775I$ $a = -0.04253 + 1.54520I$ $b = -0.661366 - 0.064571I$	$-0.54610 + 4.70193I$	$0.76536 - 4.65762I$
$u = -0.706698 - 0.009775I$ $a = -0.04253 - 1.54520I$ $b = -0.661366 + 0.064571I$	$-0.54610 - 4.70193I$	$0.76536 + 4.65762I$
$u = -0.188008 + 0.672153I$ $a = 1.66160 + 0.13653I$ $b = 0.76344 + 1.31899I$	$2.30526 - 5.39595I$	$4.61743 + 7.91302I$
$u = -0.188008 - 0.672153I$ $a = 1.66160 - 0.13653I$ $b = 0.76344 - 1.31899I$	$2.30526 + 5.39595I$	$4.61743 - 7.91302I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ 1.31835$ $a = -0.682453$ $b = \ 0.815064$	3.05905	0
$u = \ 0.191951 + 0.647839I$ $a = -0.794070 - 0.291142I$ $b = -1.083280 + 0.054850I$	$-0.79396 + 3.05732I$	$0.59352 - 5.00231I$
$u = \ 0.191951 - 0.647839I$ $a = -0.794070 + 0.291142I$ $b = -1.083280 - 0.054850I$	$-0.79396 - 3.05732I$	$0.59352 + 5.00231I$
$u = \ 1.331690 + 0.153637I$ $a = -0.90494 - 2.57744I$ $b = -0.657321 + 1.119200I$	$5.10259 + 3.32211I$	0
$u = \ 1.331690 - 0.153637I$ $a = -0.90494 + 2.57744I$ $b = -0.657321 - 1.119200I$	$5.10259 - 3.32211I$	0
$u = -1.249700 + 0.492475I$ $a = \ 0.398034 - 0.700256I$ $b = \ 0.049981 + 0.968730I$	$2.35727 - 3.21528I$	0
$u = -1.249700 - 0.492475I$ $a = \ 0.398034 + 0.700256I$ $b = \ 0.049981 - 0.968730I$	$2.35727 + 3.21528I$	0
$u = -1.343850 + 0.142360I$ $a = -1.45232 + 3.03674I$ $b = \ 0.028054 - 1.023450I$	$3.74547 + 2.60657I$	0
$u = -1.343850 - 0.142360I$ $a = -1.45232 - 3.03674I$ $b = \ 0.028054 + 1.023450I$	$3.74547 - 2.60657I$	0
$u = \ 1.314300 + 0.320206I$ $a = \ 0.404246 - 0.664630I$ $b = -0.758072 - 0.266299I$	$-1.43950 + 5.31733I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.314300 - 0.320206I$ $a = 0.404246 + 0.664630I$ $b = -0.758072 + 0.266299I$	$-1.43950 - 5.31733I$	0
$u = -1.347630 + 0.125395I$ $a = 0.42870 + 2.55795I$ $b = 0.229918 - 1.343880I$	$8.43775 + 2.00284I$	0
$u = -1.347630 - 0.125395I$ $a = 0.42870 - 2.55795I$ $b = 0.229918 + 1.343880I$	$8.43775 - 2.00284I$	0
$u = -1.360310 + 0.084915I$ $a = 0.819748 - 0.021975I$ $b = 0.145792 - 0.333836I$	$6.59527 - 1.16256I$	0
$u = -1.360310 - 0.084915I$ $a = 0.819748 + 0.021975I$ $b = 0.145792 + 0.333836I$	$6.59527 + 1.16256I$	0
$u = -1.354540 + 0.171932I$ $a = 0.673046 + 0.107343I$ $b = -1.081530 + 0.769859I$	$5.44556 - 0.86088I$	0
$u = -1.354540 - 0.171932I$ $a = 0.673046 - 0.107343I$ $b = -1.081530 - 0.769859I$	$5.44556 + 0.86088I$	0
$u = 1.368210 + 0.143378I$ $a = -1.18519 - 2.16747I$ $b = 0.50495 + 1.76954I$	$9.08592 - 1.40627I$	0
$u = 1.368210 - 0.143378I$ $a = -1.18519 + 2.16747I$ $b = 0.50495 - 1.76954I$	$9.08592 + 1.40627I$	0
$u = -0.274204 + 0.559986I$ $a = -2.20159 + 0.37589I$ $b = 0.023992 - 1.078520I$	$3.75901 + 0.50385I$	$8.87364 + 0.38982I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.274204-0.559986I$ $a=-2.20159-0.37589I$ $b=0.023992+1.078520I$	$3.75901-0.50385I$	$8.87364-0.38982I$
$u=1.372760+0.178307I$ $a=-0.835735+0.072782I$ $b=-0.376647-0.507264I$	$4.34556+6.41095I$	0
$u=1.372760-0.178307I$ $a=-0.835735-0.072782I$ $b=-0.376647+0.507264I$	$4.34556-6.41095I$	0
$u=-0.396188+0.471004I$ $a=-0.203653-0.409084I$ $b=-0.485022+0.338354I$	$-1.47214+1.29483I$	$-2.21582-0.22695I$
$u=-0.396188-0.471004I$ $a=-0.203653+0.409084I$ $b=-0.485022-0.338354I$	$-1.47214-1.29483I$	$-2.21582+0.22695I$
$u=1.370430+0.219938I$ $a=-0.244267-0.140422I$ $b=0.697716+0.149710I$	$3.72148+1.22839I$	0
$u=1.370430-0.219938I$ $a=-0.244267+0.140422I$ $b=0.697716-0.149710I$	$3.72148-1.22839I$	0
$u=-1.373840+0.254943I$ $a=-0.586959-0.911580I$ $b=1.272080+0.161262I$	$4.18347-6.34498I$	0
$u=-1.373840-0.254943I$ $a=-0.586959+0.911580I$ $b=1.272080-0.161262I$	$4.18347+6.34498I$	0
$u=1.384740+0.189290I$ $a=0.36841+3.00144I$ $b=0.064495-1.369760I$	$9.53240+5.59842I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.384740 - 0.189290I$ $a = 0.36841 - 3.00144I$ $b = 0.064495 + 1.369760I$	$9.53240 - 5.59842I$	0
$u = -1.370920 + 0.280112I$ $a = -1.31613 + 2.52051I$ $b = -0.398798 - 1.227510I$	$1.68222 - 9.58894I$	0
$u = -1.370920 - 0.280112I$ $a = -1.31613 - 2.52051I$ $b = -0.398798 + 1.227510I$	$1.68222 + 9.58894I$	0
$u = -1.372400 + 0.281414I$ $a = -1.85494 + 1.11740I$ $b = -0.264635 - 1.089620I$	$6.15824 - 9.13709I$	0
$u = -1.372400 - 0.281414I$ $a = -1.85494 - 1.11740I$ $b = -0.264635 + 1.089620I$	$6.15824 + 9.13709I$	0
$u = 1.375060 + 0.269737I$ $a = -0.95851 - 2.06127I$ $b = -0.88247 + 1.43103I$	$7.27555 + 8.82792I$	0
$u = 1.375060 - 0.269737I$ $a = -0.95851 + 2.06127I$ $b = -0.88247 - 1.43103I$	$7.27555 - 8.82792I$	0
$u = 1.369120 + 0.306078I$ $a = -0.87240 - 1.81546I$ $b = -0.034331 + 1.052870I$	$2.89929 + 3.08195I$	0
$u = 1.369120 - 0.306078I$ $a = -0.87240 + 1.81546I$ $b = -0.034331 - 1.052870I$	$2.89929 - 3.08195I$	0
$u = 1.399630 + 0.109020I$ $a = -0.645838 + 0.105964I$ $b = 1.127990 + 0.538753I$	$5.29099 - 3.66734I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.399630 - 0.109020I$ $a = -0.645838 - 0.105964I$ $b = 1.127990 - 0.538753I$	$5.29099 + 3.66734I$	0
$u = -1.397650 + 0.160671I$ $a = 0.97905 - 2.19902I$ $b = -0.19402 + 1.81909I$	$9.45925 - 4.38662I$	0
$u = -1.397650 - 0.160671I$ $a = 0.97905 + 2.19902I$ $b = -0.19402 - 1.81909I$	$9.45925 + 4.38662I$	0
$u = 1.394040 + 0.220696I$ $a = 1.77494 + 1.98003I$ $b = 0.118955 - 1.147790I$	$9.06095 + 2.37625I$	0
$u = 1.394040 - 0.220696I$ $a = 1.77494 - 1.98003I$ $b = 0.118955 + 1.147790I$	$9.06095 - 2.37625I$	0
$u = -0.024671 + 0.584980I$ $a = -0.276759 - 0.145754I$ $b = -0.529039 + 0.431451I$	$-0.91305 + 1.41710I$	$-0.90431 - 4.43635I$
$u = -0.024671 - 0.584980I$ $a = -0.276759 + 0.145754I$ $b = -0.529039 - 0.431451I$	$-0.91305 - 1.41710I$	$-0.90431 + 4.43635I$
$u = -1.38738 + 0.31055I$ $a = 0.249142 - 0.351466I$ $b = -0.510340 + 0.450923I$	$3.42434 - 6.17735I$	0
$u = -1.38738 - 0.31055I$ $a = 0.249142 + 0.351466I$ $b = -0.510340 - 0.450923I$	$3.42434 + 6.17735I$	0
$u = 1.39776 + 0.28297I$ $a = 0.654260 - 0.804738I$ $b = -1.384640 - 0.052450I$	$2.81876 + 11.87040I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.39776 - 0.28297I$ $a = 0.654260 + 0.804738I$ $b = -1.384640 + 0.052450I$	$2.81876 - 11.87040I$	0
$u = 0.502006 + 0.272910I$ $a = -0.988686 - 0.156094I$ $b = 0.176092 + 1.388870I$	$3.85596 + 2.58784I$	$8.74880 - 3.93172I$
$u = 0.502006 - 0.272910I$ $a = -0.988686 + 0.156094I$ $b = 0.176092 - 1.388870I$	$3.85596 - 2.58784I$	$8.74880 + 3.93172I$
$u = -1.41460 + 0.24844I$ $a = 0.83312 - 2.06498I$ $b = 0.73018 + 1.54072I$	$8.19657 - 4.09308I$	0
$u = -1.41460 - 0.24844I$ $a = 0.83312 + 2.06498I$ $b = 0.73018 - 1.54072I$	$8.19657 + 4.09308I$	0
$u = 1.43711 + 0.30413I$ $a = 0.97716 + 2.18387I$ $b = 0.53286 - 1.43243I$	$9.1753 + 12.5096I$	0
$u = 1.43711 - 0.30413I$ $a = 0.97716 - 2.18387I$ $b = 0.53286 + 1.43243I$	$9.1753 - 12.5096I$	0
$u = -1.46242 + 0.19439I$ $a = 0.57417 - 2.04808I$ $b = 0.441988 + 1.294660I$	$6.91451 - 4.98429I$	0
$u = -1.46242 - 0.19439I$ $a = 0.57417 + 2.04808I$ $b = 0.441988 - 1.294660I$	$6.91451 + 4.98429I$	0
$u = -1.44158 + 0.33198I$ $a = -1.01719 + 2.05262I$ $b = -0.62682 - 1.42123I$	$7.1819 - 18.7415I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.44158-0.33198I$ $a=-1.01719-2.05262I$ $b=-0.62682+1.42123I$	$7.1819+18.7415I$	0
$u=-1.48260+0.25763I$ $a=\ \ 0.64483-1.84971I$ $b=\ \ 0.355801+1.189960I$	$6.82951-5.17040I$	0
$u=-1.48260-0.25763I$ $a=\ \ 0.64483+1.84971I$ $b=\ \ 0.355801-1.189960I$	$6.82951+5.17040I$	0
$u=\ \ 1.52291+0.07834I$ $a=\ \ 0.51728+2.06654I$ $b=-0.212942-1.357070I$	$12.45090-2.25628I$	0
$u=\ \ 1.52291-0.07834I$ $a=\ \ 0.51728-2.06654I$ $b=-0.212942+1.357070I$	$12.45090+2.25628I$	0
$u=\ \ 0.460833+0.061428I$ $a=-1.099430-0.859371I$ $b=\ \ 0.379491-0.017585I$	$1.243970+0.474324I$	$7.78614-0.28988I$
$u=\ \ 0.460833-0.061428I$ $a=-1.099430+0.859371I$ $b=\ \ 0.379491+0.017585I$	$1.243970-0.474324I$	$7.78614+0.28988I$
$u=\ \ 1.50496+0.32943I$ $a=-0.70081-1.70277I$ $b=-0.365558+1.032550I$	$5.10642+9.75274I$	0
$u=\ \ 1.50496-0.32943I$ $a=-0.70081+1.70277I$ $b=-0.365558-1.032550I$	$5.10642-9.75274I$	0
$u=-0.259325+0.376841I$ $a=-0.21027+2.06481I$ $b=-0.165139-1.301050I$	$4.32902-3.26983I$	$12.5880+9.3339I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.259325-0.376841I$ $a=-0.21027-2.06481I$ $b=-0.165139+1.301050I$	$4.32902+3.26983I$	$12.5880-9.3339I$
$u=-1.55854+0.03206I$ $a=-0.31241+1.97733I$ $b=0.31007-1.39056I$	$11.56080+8.01928I$	0
$u=-1.55854-0.03206I$ $a=-0.31241-1.97733I$ $b=0.31007+1.39056I$	$11.56080-8.01928I$	0
$u=0.037155+0.408356I$ $a=2.89093+0.93424I$ $b=0.767376+0.840542I$	$0.85376-1.30121I$	$-0.66690-1.86791I$
$u=0.037155-0.408356I$ $a=2.89093-0.93424I$ $b=0.767376-0.840542I$	$0.85376+1.30121I$	$-0.66690+1.86791I$
$u=-0.090369+0.319235I$ $a=4.67887-0.60447I$ $b=-0.081944-0.627555I$	$-0.58032-4.31606I$	$1.05693+2.05653I$
$u=-0.090369-0.319235I$ $a=4.67887+0.60447I$ $b=-0.081944+0.627555I$	$-0.58032+4.31606I$	$1.05693-2.05653I$
$u=-0.150162+0.156312I$ $a=1.75639+1.01392I$ $b=-0.29398+1.47752I$	$4.15787+3.00573I$	$12.46090+3.53493I$
$u=-0.150162-0.156312I$ $a=1.75639-1.01392I$ $b=-0.29398-1.47752I$	$4.15787-3.00573I$	$12.46090-3.53493I$

II. $I_2^u =$
$\langle -u^{23}+11u^{21}+\cdots+b-1,\ -3u^{23}+32u^{21}+\cdots+a-1,\ u^{24}-12u^{22}+\cdots+2u+1\rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ -u^3+u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^2+1 \\ u^4-2u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 3u^{23}-32u^{21}+\cdots-4u+1 \\ u^{23}-11u^{21}+\cdots+4u+1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^{23}+3u^{22}+\cdots-5u-2 \\ -3u^{22}+u^{21}+\cdots+12u^2+3 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 3u^{23}-32u^{21}+\cdots-u-1 \\ -u^{23}+11u^{21}+\cdots-5u-1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 4u^{23}-43u^{21}+\cdots-u^2+2 \\ u^{23}-11u^{21}+\cdots+4u+1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^5+2u^3-u \\ u^7-3u^5+2u^3+u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^{23}+2u^{22}+\cdots-4u-1 \\ -3u^{22}+u^{21}+\cdots+u+3 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^{23}+2u^{22}+\cdots-4u-1 \\ 3u^{23}-3u^{22}+\cdots+3u+3 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u^{23}+8u^{22}-51u^{21}-84u^{20}+276u^{19}+360u^{18}-821u^{17}-759u^{16}+1423u^{15}+629u^{14}-1314u^{13}+463u^{12}+231u^{11}-1393u^{10}+809u^9+881u^8-820u^7+85u^6+274u^5-159u^4-22u^3-39u^2+12u-7$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{24} - 12u^{23} + \cdots - 15u + 1$
c_2	$u^{24} - 6u^{22} + \cdots + u + 1$
c_3	$u^{24} + u^{23} + \cdots - 2u^3 + 1$
c_4	$u^{24} + u^{23} + \cdots + 10u^2 + 1$
c_5, c_6	$u^{24} - 12u^{22} + \cdots + 2u + 1$
c_7	$u^{24} - 6u^{22} + \cdots - u + 1$
c_8	$u^{24} - u^{23} + \cdots + 10u^2 + 1$
c_9	$u^{24} - 6u^{22} + \cdots - 4u + 1$
c_{10}	$u^{24} + 4u^{22} + \cdots - 2u + 1$
c_{11}	$u^{24} - 12u^{22} + \cdots - 2u + 1$
c_{12}	$u^{24} - 2u^{22} + \cdots + 3u + 1$

(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	$y^{24} - 12y^{23} + \cdots - 15y + 1$
c_3	$y^{24} - 7y^{23} + \cdots - 4y^2 + 1$
c_4, c_8	$y^{24} + 21y^{23} + \cdots + 20y + 1$
c_5, c_6, c_{11}	$y^{24} - 24y^{23} + \cdots + 12y + 1$
c_9	$y^{24} - 12y^{23} + \cdots - 12y + 1$
c_{10}	$y^{24} + 8y^{23} + \cdots + 8y + 1$
c_{12}	$y^{24} - 4y^{23} + \cdots - 3y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.068651 + 0.929424I$ $a = -0.295075 - 0.486660I$ $b = -0.034779 + 0.697797I$	$-2.61709 - 1.40699I$	$-9.58923 + 2.02213I$
$u = 0.068651 - 0.929424I$ $a = -0.295075 + 0.486660I$ $b = -0.034779 - 0.697797I$	$-2.61709 + 1.40699I$	$-9.58923 - 2.02213I$
$u = 1.169690 + 0.336481I$ $a = 0.488164 - 0.921824I$ $b = -0.136599 + 0.612169I$	$0.56997 + 5.96107I$	$2.69042 - 6.99804I$
$u = 1.169690 - 0.336481I$ $a = 0.488164 + 0.921824I$ $b = -0.136599 - 0.612169I$	$0.56997 - 5.96107I$	$2.69042 + 6.99804I$
$u = 1.216630 + 0.130232I$ $a = 0.387646 + 1.077390I$ $b = 0.380957 + 0.629569I$	$2.19974 - 3.04838I$	$1.76668 + 4.68501I$
$u = 1.216630 - 0.130232I$ $a = 0.387646 - 1.077390I$ $b = 0.380957 - 0.629569I$	$2.19974 + 3.04838I$	$1.76668 - 4.68501I$
$u = -1.249520 + 0.073520I$ $a = 1.114900 + 0.294345I$ $b = -0.773198 + 0.591099I$	$4.35814 + 0.56071I$	$6.19041 - 1.68050I$
$u = -1.249520 - 0.073520I$ $a = 1.114900 - 0.294345I$ $b = -0.773198 - 0.591099I$	$4.35814 - 0.56071I$	$6.19041 + 1.68050I$
$u = -1.231740 + 0.410206I$ $a = 0.312702 - 1.101620I$ $b = 0.231352 + 0.644772I$	$1.31532 - 3.43328I$	$-1.16883 + 5.13510I$
$u = -1.231740 - 0.410206I$ $a = 0.312702 + 1.101620I$ $b = 0.231352 - 0.644772I$	$1.31532 + 3.43328I$	$-1.16883 - 5.13510I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.324470 + 0.572839I$ $a = -2.10332 - 1.03381I$ $b = -0.324272 + 0.798048I$	$-0.48935 + 5.20044I$	$2.82779 - 9.17180I$
$u = 0.324470 - 0.572839I$ $a = -2.10332 + 1.03381I$ $b = -0.324272 - 0.798048I$	$-0.48935 - 5.20044I$	$2.82779 + 9.17180I$
$u = -1.335640 + 0.131798I$ $a = 0.21492 - 2.09510I$ $b = -0.37287 + 1.44038I$	$8.05506 + 1.46228I$	$5.22915 + 2.07758I$
$u = -1.335640 - 0.131798I$ $a = 0.21492 + 2.09510I$ $b = -0.37287 - 1.44038I$	$8.05506 - 1.46228I$	$5.22915 - 2.07758I$
$u = 1.382630 + 0.158548I$ $a = -0.51531 - 2.59501I$ $b = -0.14394 + 1.56262I$	$8.68692 + 5.11184I$	$6.98030 - 6.38269I$
$u = 1.382630 - 0.158548I$ $a = -0.51531 + 2.59501I$ $b = -0.14394 - 1.56262I$	$8.68692 - 5.11184I$	$6.98030 + 6.38269I$
$u = -1.41196 + 0.28189I$ $a = 1.16270 - 1.50449I$ $b = 0.421050 + 0.963530I$	$5.07360 - 8.57178I$	$5.14320 + 5.72643I$
$u = -1.41196 - 0.28189I$ $a = 1.16270 + 1.50449I$ $b = 0.421050 - 0.963530I$	$5.07360 + 8.57178I$	$5.14320 - 5.72643I$
$u = 1.44505 + 0.20614I$ $a = -0.66536 - 1.94894I$ $b = -0.603560 + 1.240880I$	$7.17636 + 4.27371I$	$6.99693 + 0.13663I$
$u = 1.44505 - 0.20614I$ $a = -0.66536 + 1.94894I$ $b = -0.603560 - 1.240880I$	$7.17636 - 4.27371I$	$6.99693 - 0.13663I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.312652+0.364008I$ $a=\ 2.47000-0.97405I$ $b=\ 0.612935+0.887283I$	$1.31476-1.86915I$	$7.03000+5.67897I$
$u=-0.312652-0.364008I$ $a=\ 2.47000+0.97405I$ $b=\ 0.612935-0.887283I$	$1.31476+1.86915I$	$7.03000-5.67897I$
$u=-0.065601+0.351466I$ $a=\ 0.928024-1.028750I$ $b=\ 0.24292+1.45794I$	$3.83500-3.18351I$	$-7.59682+6.37689I$
$u=-0.065601-0.351466I$ $a=\ 0.928024+1.028750I$ $b=\ 0.24292-1.45794I$	$3.83500+3.18351I$	$-7.59682-6.37689I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{24}-12u^{23}+\cdots-15u+1)(u^{129}+53u^{128}+\cdots+241100u+10201)$
c_2	$(u^{24}-6u^{22}+\cdots+u+1)(u^{129}+u^{128}+\cdots-268u-101)$
c_3	$(u^{24}+u^{23}+\cdots-2u^3+1)(u^{129}-6u^{127}+\cdots-141u-9)$
c_4	$(u^{24}+u^{23}+\cdots+10u^2+1)(u^{129}+2u^{128}+\cdots-21685u-15853)$
c_5, c_6	$(u^{24}-12u^{22}+\cdots+2u+1)(u^{129}+u^{128}+\cdots-7u-1)$
c_7	$(u^{24}-6u^{22}+\cdots-u+1)(u^{129}+u^{128}+\cdots-268u-101)$
c_8	$(u^{24}-u^{23}+\cdots+10u^2+1)(u^{129}+2u^{128}+\cdots-21685u-15853)$
c_9	$(u^{24}-6u^{22}+\cdots-4u+1)(u^{129}-7u^{128}+\cdots+31027u+4567)$
c_{10}	$(u^{24}+4u^{22}+\cdots-2u+1)(u^{129}-3u^{128}+\cdots+22569u+1491)$
c_{11}	$(u^{24}-12u^{22}+\cdots-2u+1)(u^{129}+u^{128}+\cdots-7u-1)$
c_{12}	$(u^{24}-2u^{22}+\cdots+3u+1)(u^{129}+11u^{128}+\cdots-170u+29)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{24}+12y^{23}+\cdots+5y+1)$ $\cdot(y^{129}+59y^{128}+\cdots+6188411064y-104060401)$
c_2, c_7	$(y^{24}-12y^{23}+\cdots-15y+1)(y^{129}-53y^{128}+\cdots+241100y-10201)$
c_3	$(y^{24}-7y^{23}+\cdots-4y^2+1)(y^{129}-12y^{128}+\cdots+369y-81)$
c_4, c_8	$(y^{24}+21y^{23}+\cdots+20y+1)$ $\cdot(y^{129}+92y^{128}+\cdots-5214202691y-251317609)$
c_5, c_6, c_{11}	$(y^{24}-24y^{23}+\cdots+12y+1)(y^{129}-117y^{128}+\cdots-19y-1)$
c_9	$(y^{24}-12y^{23}+\cdots-12y+1)$ $\cdot(y^{129}-37y^{128}+\cdots+3096724221y-20857489)$
c_{10}	$(y^{24}+8y^{23}+\cdots+8y+1)$ $\cdot(y^{129}+15y^{128}+\cdots+34052817y-2223081)$
c_{12}	$(y^{24}-4y^{23}+\cdots-3y+1)(y^{129}-17y^{128}+\cdots+61496y-841)$