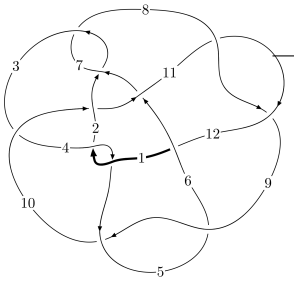
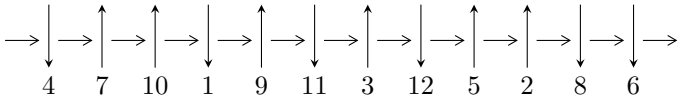
$12a_{1087}$ $(K12a_{1087})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 1.91910 \times 10^{765} u^{138} + 3.12076 \times 10^{766} u^{137} + \cdots + 2.08048 \times 10^{766} b - 1.92264 \times 10^{769},$$
$$- 2.36640 \times 10^{768} u^{138} - 3.49494 \times 10^{769} u^{137} + \cdots + 2.56107 \times 10^{769} a + 1.97863 \times 10^{772},$$
$$u^{139} + 7u^{138} + \cdots + 11682u - 1231 \rangle$$
$$I_2^u = \langle -1.20250 \times 10^{21} u^{26} - 3.96564 \times 10^{20} u^{25} + \cdots + 3.82872 \times 10^{21} b - 2.56885 \times 10^{21},$$
$$1.83911 \times 10^{22} u^{26} + 3.24467 \times 10^{22} u^{25} + \cdots + 3.82872 \times 10^{21} a + 2.71471 \times 10^{22},\ u^{27} + 2u^{26} + \cdots + 2u - 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 166 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. $\boldsymbol{I_1^u = \langle 1.92 \times 10^{765} u^{138} + 3.12 \times 10^{766} u^{137} + \cdots + 2.08 \times 10^{766} b - 1.92 \times 10^{769},\ -2.37 \times 10^{768} u^{138} - 3.49 \times 10^{769} u^{137} + \cdots + 2.56 \times 10^{769} a + 1.98 \times 10^{772},\ u^{139} + 7u^{138} + \cdots + 11682u - 1231 \rangle}$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} 0.0923992u^{138} + 1.36464u^{137} + \cdots + 7209.45u - 772.579 \\ -0.0922435u^{138} - 1.50002u^{137} + \cdots - 8590.71u + 924.136 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.549881u^{138} - 3.93080u^{137} + \cdots - 52.9648u + 59.9517 \\ 0.399436u^{138} + 2.81424u^{137} + \cdots - 390.909u - 0.625575 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.225887u^{138} + 1.40797u^{137} + \cdots - 2060.40u + 193.283 \\ -0.0274120u^{138} - 0.225529u^{137} + \cdots - 219.675u + 30.6034 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.189124u^{138} - 1.42316u^{137} + \cdots - 713.671u + 93.3319 \\ 0.310659u^{138} + 2.17704u^{137} + \cdots - 401.163u + 11.0094 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.000155686u^{138} - 0.135379u^{137} + \cdots - 1381.27u + 151.556 \\ -0.0922435u^{138} - 1.50002u^{137} + \cdots - 8590.71u + 924.136 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.0441154u^{138} + 0.262529u^{137} + \cdots - 450.945u + 42.2162 \\ -0.0738248u^{138} - 0.0284938u^{137} + \cdots + 4575.07u - 472.844 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.0177352u^{138} - 0.0819765u^{137} + \cdots - 2406.75u + 251.185 \\ 0.355643u^{138} + 2.56097u^{137} + \cdots + 163.686u - 59.8001 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.0205174u^{138} - 0.0898126u^{137} + \cdots + 597.154u - 56.9696 \\ -0.0652540u^{138} - 0.245445u^{137} + \cdots + 2278.61u - 233.997 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 1.43120u^{138} + 9.34049u^{137} + \cdots - 9490.61u + 842.501$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{139} - 8u^{138} + \cdots + 16402u - 877$
c_2, c_7	$u^{139} + u^{138} + \cdots - 2696u + 400$
c_3	$u^{139} + u^{138} + \cdots + 8317u - 739$
c_5, c_9	$u^{139} - 7u^{138} + \cdots + 11682u + 1231$
c_6	$u^{139} - 5u^{138} + \cdots + 3449844u + 1329092$
c_8, c_{11}	$u^{139} - 53u^{137} + \cdots + 347585u + 14407$
c_{10}	$u^{139} + u^{138} + \cdots - 2613392u + 228149$
c_{12}	$u^{139} + 2u^{138} + \cdots - 1050507u - 108932$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{139} + 92y^{138} + \cdots - 1895482y - 769129$
c_2, c_7	$y^{139} - 75y^{138} + \cdots + 7284416y - 160000$
c_3	$y^{139} - 7y^{138} + \cdots + 158245637y - 546121$
c_5, c_9	$y^{139} + 111y^{138} + \cdots - 54973534y - 1515361$
c_6	$y^{139} + 33y^{138} + \cdots - 63550645426176y - 1766485544464$
c_8, c_{11}	$y^{139} - 106y^{138} + \cdots + 5626584101y - 207561649$
c_{10}	$y^{139} - 61y^{138} + \cdots + 6848256291546y - 52051966201$
c_{12}	$y^{139} - 34y^{138} + \cdots + 547581039921y - 11866180624$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.039989+1.017880I$ $a=\ 0.0196678-0.0235319I$ $b=\ 0.03432-1.63507I$	$1.36706-0.77225I$	0
$u=-0.039989-1.017880I$ $a=\ 0.0196678+0.0235319I$ $b=\ 0.03432+1.63507I$	$1.36706+0.77225I$	0
$u=\ 0.481191+0.937078I$ $a=\ 1.67515+0.27171I$ $b=-0.519513+0.402886I$	$0.23466+4.83606I$	0
$u=\ 0.481191-0.937078I$ $a=\ 1.67515-0.27171I$ $b=-0.519513-0.402886I$	$0.23466-4.83606I$	0
$u=-0.942337+0.076060I$ $a=-0.331531-0.494964I$ $b=-0.686624+0.904248I$	$7.02740+3.30222I$	0
$u=-0.942337-0.076060I$ $a=-0.331531+0.494964I$ $b=-0.686624-0.904248I$	$7.02740-3.30222I$	0
$u=-0.939126+0.062489I$ $a=-0.180705+0.241630I$ $b=\ 0.143026-1.053040I$	$4.84217+3.09296I$	0
$u=-0.939126-0.062489I$ $a=-0.180705-0.241630I$ $b=\ 0.143026+1.053040I$	$4.84217-3.09296I$	0
$u=\ 0.182420+1.045360I$ $a=-1.82996-0.34133I$ $b=\ 0.438713-0.455038I$	$0.96021+6.14982I$	0
$u=\ 0.182420-1.045360I$ $a=-1.82996+0.34133I$ $b=\ 0.438713+0.455038I$	$0.96021-6.14982I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.031760 + 0.257231I$ $a = 0.146884 + 0.150541I$ $b = -0.308572 - 1.066430I$	$8.12766 - 7.82410I$	0
$u = 1.031760 - 0.257231I$ $a = 0.146884 - 0.150541I$ $b = -0.308572 + 1.066430I$	$8.12766 + 7.82410I$	0
$u = 0.087117 + 1.060770I$ $a = -1.66253 + 0.22246I$ $b = 1.63686 - 1.46324I$	$-4.75228 + 2.50216I$	0
$u = 0.087117 - 1.060770I$ $a = -1.66253 - 0.22246I$ $b = 1.63686 + 1.46324I$	$-4.75228 - 2.50216I$	0
$u = 0.590045 + 0.721712I$ $a = -0.134505 + 0.309103I$ $b = 0.150663 + 0.635932I$	$0.992305 - 0.435783I$	0
$u = 0.590045 - 0.721712I$ $a = -0.134505 - 0.309103I$ $b = 0.150663 - 0.635932I$	$0.992305 + 0.435783I$	0
$u = 0.031384 + 1.076740I$ $a = -2.33667 - 0.43733I$ $b = 2.35961 + 1.54533I$	$-0.42394 + 8.03187I$	0
$u = 0.031384 - 1.076740I$ $a = -2.33667 + 0.43733I$ $b = 2.35961 - 1.54533I$	$-0.42394 - 8.03187I$	0
$u = -0.791917 + 0.453106I$ $a = 0.277654 + 1.369740I$ $b = 1.066170 - 0.918445I$	$3.95818 + 3.42854I$	0
$u = -0.791917 - 0.453106I$ $a = 0.277654 - 1.369740I$ $b = 1.066170 + 0.918445I$	$3.95818 - 3.42854I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.054450 + 1.088940I$ $a = 2.11968 + 0.67772I$ $b = -1.99435 + 0.39427I$	$-4.99290 - 1.46818I$	0
$u = 0.054450 - 1.088940I$ $a = 2.11968 - 0.67772I$ $b = -1.99435 - 0.39427I$	$-4.99290 + 1.46818I$	0
$u = -0.447675 + 0.789562I$ $a = 0.114568 + 0.948194I$ $b = 0.123171 + 0.921072I$	$3.21263 + 2.15083I$	0
$u = -0.447675 - 0.789562I$ $a = 0.114568 - 0.948194I$ $b = 0.123171 - 0.921072I$	$3.21263 - 2.15083I$	0
$u = 0.083801 + 1.099070I$ $a = 0.798809 + 0.207338I$ $b = -0.67844 - 1.34155I$	$-3.06633 + 3.30259I$	0
$u = 0.083801 - 1.099070I$ $a = 0.798809 - 0.207338I$ $b = -0.67844 + 1.34155I$	$-3.06633 - 3.30259I$	0
$u = -0.068937 + 0.892914I$ $a = 2.51879 - 1.17012I$ $b = -2.21428 - 0.26115I$	$0.44041 - 8.05097I$	0
$u = -0.068937 - 0.892914I$ $a = 2.51879 + 1.17012I$ $b = -2.21428 + 0.26115I$	$0.44041 + 8.05097I$	0
$u = -0.077678 + 0.890499I$ $a = 0.71200 + 1.71379I$ $b = -0.174279 - 0.279106I$	$1.70213 + 0.28632I$	0
$u = -0.077678 - 0.890499I$ $a = 0.71200 - 1.71379I$ $b = -0.174279 + 0.279106I$	$1.70213 - 0.28632I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.088786+1.106150I$ $a=-1.40345+1.03827I$ $b=\ \ 0.773931+0.572411I$	$-1.09142-5.55350I$	0
$u=-0.088786-1.106150I$ $a=-1.40345-1.03827I$ $b=\ \ 0.773931-0.572411I$	$-1.09142+5.55350I$	0
$u=\ \ 0.834045+0.273977I$ $a=-0.876904-0.079081I$ $b=-0.396614+0.757911I$	$0.655785+0.412691I$	0
$u=\ \ 0.834045-0.273977I$ $a=-0.876904+0.079081I$ $b=-0.396614-0.757911I$	$0.655785-0.412691I$	0
$u=-0.220109+0.849026I$ $a=-2.21359-0.53451I$ $b=\ \ 0.212927-0.037209I$	$3.30502-5.19427I$	0
$u=-0.220109-0.849026I$ $a=-2.21359+0.53451I$ $b=\ \ 0.212927+0.037209I$	$3.30502+5.19427I$	0
$u=\ \ 0.367380+1.077480I$ $a=\ \ 1.68645-0.77728I$ $b=-1.01153+1.01694I$	$5.73298+3.93821I$	0
$u=\ \ 0.367380-1.077480I$ $a=\ \ 1.68645+0.77728I$ $b=-1.01153-1.01694I$	$5.73298-3.93821I$	0
$u=-0.327601+1.090830I$ $a=-1.42439+0.51690I$ $b=\ \ 1.087470+0.507462I$	$-0.46130-3.27866I$	0
$u=-0.327601-1.090830I$ $a=-1.42439-0.51690I$ $b=\ \ 1.087470-0.507462I$	$-0.46130+3.27866I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.017265+1.139470I$ $a=\ \ 1.74565+0.84719I$ $b=-0.936575-0.095849I$	$-4.15278-1.25480I$	0
$u=-0.017265-1.139470I$ $a=\ \ 1.74565-0.84719I$ $b=-0.936575+0.095849I$	$-4.15278+1.25480I$	0
$u=\ \ 0.373192+1.084140I$ $a=\ \ 1.45213+0.00338I$ $b=-0.945126-0.056043I$	$-1.03935+4.42291I$	0
$u=\ \ 0.373192-1.084140I$ $a=\ \ 1.45213-0.00338I$ $b=-0.945126+0.056043I$	$-1.03935-4.42291I$	0
$u=\ \ 0.302430+0.796360I$ $a=-1.103040-0.042384I$ $b=\ \ 0.598151+0.322825I$	$0.216594-0.842012I$	0
$u=\ \ 0.302430-0.796360I$ $a=-1.103040+0.042384I$ $b=\ \ 0.598151-0.322825I$	$0.216594+0.842012I$	0
$u=\ \ 0.848616$ $a=-0.713224$ $b=-0.787143$	-2.75706	0
$u=-0.773459+0.346387I$ $a=-0.086847-0.663875I$ $b=-1.052270-0.442375I$	$0.02568-9.16776I$	0
$u=-0.773459-0.346387I$ $a=-0.086847+0.663875I$ $b=-1.052270+0.442375I$	$0.02568+9.16776I$	0
$u=-0.028769+1.163310I$ $a=\ \ 1.43970+0.43359I$ $b=-0.810439-0.300982I$	$-3.90999-1.28091I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.028769-1.163310I$ $a=\ \ 1.43970-0.43359I$ $b=-0.810439+0.300982I$	$-3.90999+1.28091I$	0
$u=\ \ 1.157500+0.210012I$ $a=\ \ 0.316075+0.278235I$ $b=\ \ 0.624164-0.774953I$	$1.47807+7.25058I$	0
$u=\ \ 1.157500-0.210012I$ $a=\ \ 0.316075-0.278235I$ $b=\ \ 0.624164+0.774953I$	$1.47807-7.25058I$	0
$u=\ \ 0.146476+1.171690I$ $a=\ \ 0.514628-0.729483I$ $b=-0.136779-0.542334I$	$-2.73877+3.09519I$	0
$u=\ \ 0.146476-1.171690I$ $a=\ \ 0.514628+0.729483I$ $b=-0.136779+0.542334I$	$-2.73877-3.09519I$	0
$u=-0.552991+1.057900I$ $a=-1.203300+0.102426I$ $b=\ \ 0.756700+0.547761I$	$0.16568-2.71588I$	0
$u=-0.552991-1.057900I$ $a=-1.203300-0.102426I$ $b=\ \ 0.756700-0.547761I$	$0.16568+2.71588I$	0
$u=\ \ 0.371996+1.134640I$ $a=-1.59263+0.64548I$ $b=\ \ 0.658365-0.692759I$	$5.74931+2.78021I$	0
$u=\ \ 0.371996-1.134640I$ $a=-1.59263-0.64548I$ $b=\ \ 0.658365+0.692759I$	$5.74931-2.78021I$	0
$u=-0.433851+1.120870I$ $a=-1.60925+0.35628I$ $b=\ \ 1.66952-0.07451I$	$2.24989-7.68736I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.433851-1.120870I$ $a=-1.60925-0.35628I$ $b=\ \ 1.66952+0.07451I$	$2.24989+7.68736I$	0
$u=-0.467532+1.152310I$ $a=\ \ 2.02188+0.01910I$ $b=-2.13876-1.09095I$	$1.67311-8.19393I$	0
$u=-0.467532-1.152310I$ $a=\ \ 2.02188-0.01910I$ $b=-2.13876+1.09095I$	$1.67311+8.19393I$	0
$u=-0.249470+1.220880I$ $a=-0.893230+0.580621I$ $b=\ \ 0.974047-0.221692I$	$-1.39797-3.63551I$	0
$u=-0.249470-1.220880I$ $a=-0.893230-0.580621I$ $b=\ \ 0.974047+0.221692I$	$-1.39797+3.63551I$	0
$u=-1.076950+0.641101I$ $a=\ \ 0.087794+0.405901I$ $b=\ \ 0.773698-0.104577I$	$-0.68271+3.22757I$	0
$u=-1.076950-0.641101I$ $a=\ \ 0.087794-0.405901I$ $b=\ \ 0.773698+0.104577I$	$-0.68271-3.22757I$	0
$u=\ \ 0.725653$ $a=-0.972682$ $b=-0.763288$	-2.76319	0
$u=-0.374091+0.610450I$ $a=\ \ 1.83757-0.94783I$ $b=-1.030650+0.287017I$	$4.07537+3.90489I$	0
$u=-0.374091-0.610450I$ $a=\ \ 1.83757+0.94783I$ $b=-1.030650-0.287017I$	$4.07537-3.90489I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.356277 + 1.243310I$ $a = -0.438624 - 0.135205I$ $b = 0.488644 + 0.586217I$	$0.970784 - 0.919988I$	0
$u = 0.356277 - 1.243310I$ $a = -0.438624 + 0.135205I$ $b = 0.488644 - 0.586217I$	$0.970784 + 0.919988I$	0
$u = -0.906645 + 0.931589I$ $a = 0.314296 - 0.266178I$ $b = -0.319629 + 0.514142I$	$1.25328 - 2.74446I$	0
$u = -0.906645 - 0.931589I$ $a = 0.314296 + 0.266178I$ $b = -0.319629 - 0.514142I$	$1.25328 + 2.74446I$	0
$u = 0.176616 + 1.308750I$ $a = 1.74204 - 1.12027I$ $b = -1.78188 + 1.96773I$	$-5.61781 + 3.39275I$	0
$u = 0.176616 - 1.308750I$ $a = 1.74204 + 1.12027I$ $b = -1.78188 - 1.96773I$	$-5.61781 - 3.39275I$	0
$u = 0.553392 + 1.203660I$ $a = -1.48499 + 0.23229I$ $b = 0.740000 - 0.839226I$	$5.1418 + 13.4141I$	0
$u = 0.553392 - 1.203660I$ $a = -1.48499 - 0.23229I$ $b = 0.740000 + 0.839226I$	$5.1418 - 13.4141I$	0
$u = -0.468809 + 1.244510I$ $a = 1.38809 + 0.40545I$ $b = -0.747492 - 0.753060I$	$1.19760 - 8.08283I$	0
$u = -0.468809 - 1.244510I$ $a = 1.38809 - 0.40545I$ $b = -0.747492 + 0.753060I$	$1.19760 + 8.08283I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.660546+0.073763I$ $a=-0.205708+0.250471I$ $b=-0.740825+0.321041I$	$2.51314-0.35356I$	0
$u=-0.660546-0.073763I$ $a=-0.205708-0.250471I$ $b=-0.740825-0.321041I$	$2.51314+0.35356I$	0
$u=-1.336270+0.115797I$ $a=-0.231488+0.281431I$ $b=-0.687954-0.713203I$	$4.34326-12.97320I$	0
$u=-1.336270-0.115797I$ $a=-0.231488-0.281431I$ $b=-0.687954+0.713203I$	$4.34326+12.97320I$	0
$u=0.299884+1.319070I$ $a=1.52126+0.16495I$ $b=-1.38889+0.91441I$	$-7.92025+6.75634I$	0
$u=0.299884-1.319070I$ $a=1.52126-0.16495I$ $b=-1.38889-0.91441I$	$-7.92025-6.75634I$	0
$u=0.281389+1.331420I$ $a=-1.026050-0.162850I$ $b=1.05624-1.01829I$	$-7.24396+2.40454I$	0
$u=0.281389-1.331420I$ $a=-1.026050+0.162850I$ $b=1.05624+1.01829I$	$-7.24396-2.40454I$	0
$u=-0.463305+1.282990I$ $a=-1.71818-0.26508I$ $b=1.63413+1.14248I$	$3.23935-8.32107I$	0
$u=-0.463305-1.282990I$ $a=-1.71818+0.26508I$ $b=1.63413-1.14248I$	$3.23935+8.32107I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.584136 + 0.247452I$ $a = 0.421661 - 0.754305I$ $b = 1.077540 - 0.353100I$	$-3.14158 + 3.44373I$	0
$u = 0.584136 - 0.247452I$ $a = 0.421661 + 0.754305I$ $b = 1.077540 + 0.353100I$	$-3.14158 - 3.44373I$	0
$u = -0.321427 + 1.342410I$ $a = 1.039880 - 0.197638I$ $b = -0.902832 - 0.970509I$	$-6.50937 - 5.32700I$	0
$u = -0.321427 - 1.342410I$ $a = 1.039880 + 0.197638I$ $b = -0.902832 + 0.970509I$	$-6.50937 + 5.32700I$	0
$u = 0.583304 + 0.207462I$ $a = 0.436201 + 0.085072I$ $b = -0.131680 - 1.321520I$	$8.55860 + 0.99400I$	0
$u = 0.583304 - 0.207462I$ $a = 0.436201 - 0.085072I$ $b = -0.131680 + 1.321520I$	$8.55860 - 0.99400I$	0
$u = -0.066869 + 1.383810I$ $a = -0.926148 - 0.875994I$ $b = 1.01878 + 1.70338I$	$-3.55754 + 4.25566I$	0
$u = -0.066869 - 1.383810I$ $a = -0.926148 + 0.875994I$ $b = 1.01878 - 1.70338I$	$-3.55754 - 4.25566I$	0
$u = -0.358578 + 1.353740I$ $a = -1.385230 + 0.162765I$ $b = 1.27684 + 0.99633I$	$-5.0960 - 13.2130I$	0
$u = -0.358578 - 1.353740I$ $a = -1.385230 - 0.162765I$ $b = 1.27684 - 0.99633I$	$-5.0960 + 13.2130I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.18710 + 1.40351I$ $a = -0.94830 + 1.47018I$ $b = 1.00031 - 2.40983I$	$-5.07603 + 3.65056I$	0
$u = 0.18710 - 1.40351I$ $a = -0.94830 - 1.47018I$ $b = 1.00031 + 2.40983I$	$-5.07603 - 3.65056I$	0
$u = 0.277237 + 0.509115I$ $a = 0.109069 - 1.253980I$ $b = 0.31732 + 1.70562I$	$7.86663 - 0.84356I$	$8.94836 - 8.55332I$
$u = 0.277237 - 0.509115I$ $a = 0.109069 + 1.253980I$ $b = 0.31732 - 1.70562I$	$7.86663 + 0.84356I$	$8.94836 + 8.55332I$
$u = 0.40681 + 1.39341I$ $a = -0.936551 - 0.130409I$ $b = 1.115630 - 0.837332I$	$-7.62184 + 4.84470I$	0
$u = 0.40681 - 1.39341I$ $a = -0.936551 + 0.130409I$ $b = 1.115630 + 0.837332I$	$-7.62184 - 4.84470I$	0
$u = -0.28802 + 1.42929I$ $a = 1.002610 - 0.058464I$ $b = -1.077130 - 0.745099I$	$-7.33857 - 1.25951I$	0
$u = -0.28802 - 1.42929I$ $a = 1.002610 + 0.058464I$ $b = -1.077130 + 0.745099I$	$-7.33857 + 1.25951I$	0
$u = 0.51596 + 1.43038I$ $a = 1.41397 - 0.32237I$ $b = -1.44907 + 1.27931I$	$-3.58825 + 13.11680I$	0
$u = 0.51596 - 1.43038I$ $a = 1.41397 + 0.32237I$ $b = -1.44907 - 1.27931I$	$-3.58825 - 13.11680I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.69612 + 1.38087I$ $a = -1.146870 - 0.114162I$ $b = \quad 1.48592 - 0.73963I$	$-3.55383 + 8.80422I$	0
$u = \quad 0.69612 - 1.38087I$ $a = -1.146870 + 0.114162I$ $b = \quad 1.48592 + 0.73963I$	$-3.55383 - 8.80422I$	0
$u = -0.58179 + 1.43792I$ $a = -1.359140 - 0.214738I$ $b = \quad 1.41403 + 1.23197I$	$-0.4818 - 19.5325I$	0
$u = -0.58179 - 1.43792I$ $a = -1.359140 + 0.214738I$ $b = \quad 1.41403 - 1.23197I$	$-0.4818 + 19.5325I$	0
$u = \quad 0.59805 + 1.43204I$ $a = -1.110790 + 0.099743I$ $b = \quad 1.25964 - 1.03890I$	$-5.64794 + 7.01015I$	0
$u = \quad 0.59805 - 1.43204I$ $a = -1.110790 - 0.099743I$ $b = \quad 1.25964 + 1.03890I$	$-5.64794 - 7.01015I$	0
$u = -0.64500 + 1.42968I$ $a = \quad 1.106970 + 0.024902I$ $b = -1.15963 - 0.96667I$	$-4.23728 - 11.08710I$	0
$u = -0.64500 - 1.42968I$ $a = \quad 1.106970 - 0.024902I$ $b = -1.15963 + 0.96667I$	$-4.23728 + 11.08710I$	0
$u = -0.65541 + 1.43897I$ $a = \quad 1.058700 - 0.018122I$ $b = -1.29787 - 0.66924I$	$-3.40553 - 6.31340I$	0
$u = -0.65541 - 1.43897I$ $a = \quad 1.058700 + 0.018122I$ $b = -1.29787 + 0.66924I$	$-3.40553 + 6.31340I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.113740+0.398757I$ $a=-1.088170+0.091749I$ $b=\ \ 0.329796+0.453350I$	$0.072988-0.990449I$	$1.48529+6.57809I$
$u=-0.113740-0.398757I$ $a=-1.088170-0.091749I$ $b=\ \ 0.329796-0.453350I$	$0.072988+0.990449I$	$1.48529-6.57809I$
$u=-0.094771+0.399545I$ $a=-1.36616+2.88513I$ $b=\ \ 0.663327-0.013899I$	$-1.04019-2.63838I$	$-6.99061+4.42778I$
$u=-0.094771-0.399545I$ $a=-1.36616-2.88513I$ $b=\ \ 0.663327+0.013899I$	$-1.04019+2.63838I$	$-6.99061-4.42778I$
$u=\ \ 0.343265+0.117512I$ $a=\ \ 1.73226+1.78271I$ $b=-0.502238+0.591694I$	$3.59763+4.11065I$	$5.82072-5.61946I$
$u=\ \ 0.343265-0.117512I$ $a=\ \ 1.73226-1.78271I$ $b=-0.502238-0.591694I$	$3.59763-4.11065I$	$5.82072+5.61946I$
$u=-0.63803+1.52425I$ $a=-0.525394-0.274337I$ $b=\ \ 0.438080+0.637990I$	$0.27250-2.21699I$	0
$u=-0.63803-1.52425I$ $a=-0.525394+0.274337I$ $b=\ \ 0.438080-0.637990I$	$0.27250+2.21699I$	0
$u=\ \ 0.298004$ $a=-4.15306$ $b=-0.694282$	-2.52826	-15.0640
$u=\ \ 0.236435+0.097532I$ $a=\ \ 2.81692+0.19777I$ $b=\ \ 0.780124-0.835008I$	$-1.28368+1.58406I$	$11.09382+2.87087I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.236435 - 0.097532I$ $a = 2.81692 - 0.19777I$ $b = 0.780124 + 0.835008I$	$-1.28368 - 1.58406I$	$11.09382 - 2.87087I$
$u = -0.082224 + 0.187056I$ $a = -3.82221 - 3.33295I$ $b = -0.730956 - 0.542297I$	$1.33640 + 4.70171I$	$3.35863 - 4.48242I$
$u = -0.082224 - 0.187056I$ $a = -3.82221 + 3.33295I$ $b = -0.730956 + 0.542297I$	$1.33640 - 4.70171I$	$3.35863 + 4.48242I$
$u = 1.83927 + 0.39454I$ $a = -0.021799 + 0.304765I$ $b = -0.591106 - 0.121142I$	$0.011733 - 1.238270I$	0
$u = 1.83927 - 0.39454I$ $a = -0.021799 - 0.304765I$ $b = -0.591106 + 0.121142I$	$0.011733 + 1.238270I$	0
$u = -2.04211 + 2.29084I$ $a = -0.1264460 + 0.0133185I$ $b = 0.285526 + 0.213519I$	$0.33117 - 2.06479I$	0
$u = -2.04211 - 2.29084I$ $a = -0.1264460 - 0.0133185I$ $b = 0.285526 - 0.213519I$	$0.33117 + 2.06479I$	0
$u = -0.82448 + 3.09905I$ $a = -0.094218 - 0.111486I$ $b = 0.202939 + 0.431479I$	$-0.25317 + 2.32761I$	0
$u = -0.82448 - 3.09905I$ $a = -0.094218 + 0.111486I$ $b = 0.202939 - 0.431479I$	$-0.25317 - 2.32761I$	0

II.

$\boldsymbol{I_2^u = \langle -1.20\times10^{21}u^{26}-3.97\times10^{20}u^{25}+\cdots+3.83\times10^{21}b-2.57\times10^{21},\ 1.84\times10^{22}u^{26}+3.24\times10^{22}u^{25}+\cdots+3.83\times10^{21}a+2.71\times10^{22},\ u^{27}+2u^{26}+\cdots+2u-1\rangle}$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix}0\\u\end{pmatrix}$$

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

$$a_1 = \begin{pmatrix}-4.80347u^{26}-8.47454u^{25}+\cdots+46.2091u-7.09039\\0.314072u^{26}+0.103576u^{25}+\cdots-0.0876697u+0.670942\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$

$$a_4 = \begin{pmatrix}-3.86527u^{26}-10.4114u^{25}+\cdots-6.83438u+19.1686\\0.524610u^{26}+1.51441u^{25}+\cdots+3.35566u-0.213317\end{pmatrix}$$

$$a_2 = \begin{pmatrix}6.10923u^{26}+10.3421u^{25}+\cdots-64.7521u+11.0848\\-0.219972u^{26}-0.103324u^{25}+\cdots-2.75459u+0.954989\end{pmatrix}$$

$$a_3 = \begin{pmatrix}-3.09882u^{26}-8.55038u^{25}+\cdots-5.78651u+16.6389\\1.17447u^{26}+3.10121u^{25}+\cdots+4.51376u-2.41494\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}-4.48940u^{26}-8.37097u^{25}+\cdots+46.1214u-6.41944\\0.314072u^{26}+0.103576u^{25}+\cdots-0.0876697u+0.670942\end{pmatrix}$$

$$a_8 = \begin{pmatrix}7.52362u^{26}+13.8529u^{25}+\cdots-77.2280u+11.8262\\1.31407u^{26}+2.10358u^{25}+\cdots-16.0877u+2.67094\end{pmatrix}$$

$$a_7 = \begin{pmatrix}9.73610u^{26}+20.4226u^{25}+\cdots-66.9831u-3.94315\\-0.205239u^{26}-1.30488u^{25}+\cdots-15.7487u+5.16841\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}7.82255u^{26}+13.0054u^{25}+\cdots-80.4141u+16.6766\\2.88659u^{26}+5.24058u^{25}+\cdots-23.4164u+3.81162\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{4544848421683635079447 5}{3828721739516796557887}u^{26}-\frac{1020387957552437047276 20}{3828721739516796557887}u^{25}+\cdots+\frac{623442853610163922439 61}{3828721739516796557887}u+\frac{1071657393232305586061 79}{3828721739516796557887}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{27} - 3u^{26} + \cdots + 28u - 1$
c_2	$u^{27} - 6u^{25} + \cdots + 3u + 1$
c_3	$u^{27} - 8u^{24} + \cdots + u - 1$
c_4	$u^{27} + 3u^{26} + \cdots + 28u + 1$
c_5	$u^{27} + 2u^{26} + \cdots + 2u - 1$
c_6	$u^{27} + 4u^{26} + \cdots + 2u - 4$
c_7	$u^{27} - 6u^{25} + \cdots + 3u - 1$
c_8	$u^{27} + 5u^{26} + \cdots + 65u - 25$
c_9	$u^{27} - 2u^{26} + \cdots + 2u + 1$
c_{10}	$u^{27} + 8u^{26} + \cdots - 4u - 1$
c_{11}	$u^{27} - 5u^{26} + \cdots + 65u + 25$
c_{12}	$u^{27} + u^{26} + \cdots - 6u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{27} + 19y^{26} + \cdots + 546y - 1$
c_2, c_7	$y^{27} - 12y^{26} + \cdots + 23y - 1$
c_3	$y^{27} + 20y^{25} + \cdots - 31y - 1$
c_5, c_9	$y^{27} + 34y^{26} + \cdots - 30y - 1$
c_6	$y^{27} + 8y^{26} + \cdots + 252y - 16$
c_8, c_{11}	$y^{27} - 23y^{26} + \cdots + 5025y - 625$
c_{10}	$y^{27} - 18y^{26} + \cdots + 14y - 1$
c_{12}	$y^{27} - 7y^{26} + \cdots - 38y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.138240+1.042160I$ $a=\ 1.70968-1.09789I$ $b=-1.095150-0.186222I$	$-0.22983-5.58124I$	$0.06064+6.51484I$
$u=-0.138240-1.042160I$ $a=\ 1.70968+1.09789I$ $b=-1.095150+0.186222I$	$-0.22983+5.58124I$	$0.06064-6.51484I$
$u=\ 0.198761+0.901927I$ $a=\ 2.28587-0.37813I$ $b=-0.787321+0.087852I$	$2.78096+5.11224I$	$-2.31315-5.94919I$
$u=\ 0.198761-0.901927I$ $a=\ 2.28587+0.37813I$ $b=-0.787321-0.087852I$	$2.78096-5.11224I$	$-2.31315+5.94919I$
$u=-0.511847+0.967951I$ $a=-1.42591+0.27088I$ $b=\ 0.603886+0.183106I$	$0.09347-4.33568I$	$0.503085+0.751288I$
$u=-0.511847-0.967951I$ $a=-1.42591-0.27088I$ $b=\ 0.603886-0.183106I$	$0.09347+4.33568I$	$0.503085-0.751288I$
$u=-0.011973+1.126140I$ $a=-1.84739-0.93323I$ $b=\ 1.180230+0.134510I$	$-3.82328-1.33571I$	$7.10935+2.84045I$
$u=-0.011973-1.126140I$ $a=-1.84739+0.93323I$ $b=\ 1.180230-0.134510I$	$-3.82328+1.33571I$	$7.10935-2.84045I$
$u=-0.430646+1.041410I$ $a=\ 2.33822-0.78048I$ $b=-2.48112-0.28631I$	$0.85946-9.60514I$	$0.41397+11.53152I$
$u=-0.430646-1.041410I$ $a=\ 2.33822+0.78048I$ $b=-2.48112+0.28631I$	$0.85946+9.60514I$	$0.41397-11.53152I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.089800+0.374773I$ $a=\ 0.499711-0.151169I$ $b=\ 0.385899+0.197191I$	$0.08704+2.81180I$	$1.96585-2.02367I$
$u=-1.089800-0.374773I$ $a=\ 0.499711+0.151169I$ $b=\ 0.385899-0.197191I$	$0.08704-2.81180I$	$1.96585+2.02367I$
$u=\ 0.158522+1.302250I$ $a=-1.47879+1.42803I$ $b=\ 1.50567-2.38043I$	$-6.28046+3.93755I$	$-10.87147-7.00714I$
$u=\ 0.158522-1.302250I$ $a=-1.47879-1.42803I$ $b=\ 1.50567+2.38043I$	$-6.28046-3.93755I$	$-10.87147+7.00714I$
$u=\ 0.638407$ $a=-1.50885$ $b=-0.657346$	-2.16427	9.49510
$u=\ 0.32602+1.38215I$ $a=-0.905811-0.040053I$ $b=\ 0.958732-0.988591I$	$-7.36877+3.74464I$	$-4.63601-1.89404I$
$u=\ 0.32602-1.38215I$ $a=-0.905811+0.040053I$ $b=\ 0.958732+0.988591I$	$-7.36877-3.74464I$	$-4.63601+1.89404I$
$u=\ 0.354754+0.365472I$ $a=-1.003520+0.632064I$ $b=-0.620997+0.715658I$	$-1.72992+1.75908I$	$-5.11746-3.86134I$
$u=\ 0.354754-0.365472I$ $a=-1.003520-0.632064I$ $b=-0.620997-0.715658I$	$-1.72992-1.75908I$	$-5.11746+3.86134I$
$u=-0.059901+0.457684I$ $a=\ 0.86940-1.21905I$ $b=-0.16846+1.67690I$	$7.70384+1.16350I$	$-2.19116-10.82089I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.059901-0.457684I$ $a=\ \ 0.86940+1.21905I$ $b=-0.16846-1.67690I$	$7.70384-1.16350I$	$-2.19116+10.82089I$
$u=\ \ 0.69506+1.42541I$ $a=-1.051960-0.029718I$ $b=\ \ 1.29881-0.79638I$	$-4.17196+7.87136I$	$0.-4.78656I$
$u=\ \ 0.69506-1.42541I$ $a=-1.051960+0.029718I$ $b=\ \ 1.29881+0.79638I$	$-4.17196-7.87136I$	$0.+4.78656I$
$u=\ \ 0.024581+0.373492I$ $a=-0.77209+3.25067I$ $b=\ \ 0.003859+1.019650I$	$2.96872-0.55564I$	$8.52805-0.35655I$
$u=\ \ 0.024581-0.373492I$ $a=-0.77209-3.25067I$ $b=\ \ 0.003859-1.019650I$	$2.96872+0.55564I$	$8.52805+0.35655I$
$u=-0.83449+2.98133I$ $a=\ \ 0.0370278+0.0712024I$ $b=\ \ 0.044636+0.173884I$	$0.32325-1.95043I$	0
$u=-0.83449-2.98133I$ $a=\ \ 0.0370278-0.0712024I$ $b=\ \ 0.044636-0.173884I$	$0.32325+1.95043I$	0

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{27}-3u^{26}+\cdots+28u-1)(u^{139}-8u^{138}+\cdots+16402u-877)$
c_2	$(u^{27}-6u^{25}+\cdots+3u+1)(u^{139}+u^{138}+\cdots-2696u+400)$
c_3	$(u^{27}-8u^{24}+\cdots+u-1)(u^{139}+u^{138}+\cdots+8317u-739)$
c_4	$(u^{27}+3u^{26}+\cdots+28u+1)(u^{139}-8u^{138}+\cdots+16402u-877)$
c_5	$(u^{27}+2u^{26}+\cdots+2u-1)(u^{139}-7u^{138}+\cdots+11682u+1231)$
c_6	$(u^{27}+4u^{26}+\cdots+2u-4)(u^{139}-5u^{138}+\cdots+3449844u+1329092)$
c_7	$(u^{27}-6u^{25}+\cdots+3u-1)(u^{139}+u^{138}+\cdots-2696u+400)$
c_8	$(u^{27}+5u^{26}+\cdots+65u-25)(u^{139}-53u^{137}+\cdots+347585u+14407)$
c_9	$(u^{27}-2u^{26}+\cdots+2u+1)(u^{139}-7u^{138}+\cdots+11682u+1231)$
c_{10}	$(u^{27}+8u^{26}+\cdots-4u-1)(u^{139}+u^{138}+\cdots-2613392u+228149)$
c_{11}	$(u^{27}-5u^{26}+\cdots+65u+25)(u^{139}-53u^{137}+\cdots+347585u+14407)$
c_{12}	$(u^{27}+u^{26}+\cdots-6u-1)(u^{139}+2u^{138}+\cdots-1050507u-108932)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y^{27} + 19y^{26} + \cdots + 546y - 1)$ $\cdot (y^{139} + 92y^{138} + \cdots - 1895482y - 769129)$
c_2, c_7	$(y^{27} - 12y^{26} + \cdots + 23y - 1)$ $\cdot (y^{139} - 75y^{138} + \cdots + 7284416y - 160000)$
c_3	$(y^{27} + 20y^{25} + \cdots - 31y - 1)$ $\cdot (y^{139} - 7y^{138} + \cdots + 158245637y - 546121)$
c_5, c_9	$(y^{27} + 34y^{26} + \cdots - 30y - 1)$ $\cdot (y^{139} + 111y^{138} + \cdots - 54973534y - 1515361)$
c_6	$(y^{27} + 8y^{26} + \cdots + 252y - 16)$ $\cdot (y^{139} + 33y^{138} + \cdots - 63550645426176y - 1766485544464)$
c_8, c_{11}	$(y^{27} - 23y^{26} + \cdots + 5025y - 625)$ $\cdot (y^{139} - 106y^{138} + \cdots + 5626584101y - 207561649)$
c_{10}	$(y^{27} - 18y^{26} + \cdots + 14y - 1)$ $\cdot (y^{139} - 61y^{138} + \cdots + 6848256291546y - 52051966201)$
c_{12}	$(y^{27} - 7y^{26} + \cdots - 38y - 1)$ $\cdot (y^{139} - 34y^{138} + \cdots + 547581039921y - 11866180624)$