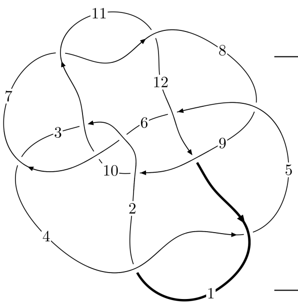
$12n_{0737}$ ($K12n_{0737}$)



A knot diagram[1]

Linearized knot diagam

4	11	7	1	12	2	11	5	2	7	8	9
$\downarrow$	$\downarrow$	$\downarrow$	$\downarrow$	$\uparrow$	$\downarrow$	$\uparrow$	$\downarrow$	$\downarrow$	$\uparrow$	$\uparrow$	$\downarrow$

Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle b+u,\ -5.39993\times 10^{21}u^{20} - 1.73558\times 10^{22}u^{19} + \cdots + 2.47379\times 10^{22}a - 8.83120\times 10^{22},\\
&\qquad u^{21} + 25u^{19} + \cdots + u + 1\rangle\\
I_2^u &= \langle b+u,\ -3035105u^{12} + 837784u^{11} + \cdots + 1269257a - 4665416,\\
&\qquad u^{13} + 4u^{11} - 3u^{10} - 14u^9 + 14u^8 + 30u^7 - 27u^6 - 9u^5 + 24u^4 - u^3 - 6u^2 + 2u + 1\rangle\\
I_3^u &= \langle -4.67268\times 10^{23}u^{17} - 1.17012\times 10^{24}u^{16} + \cdots + 4.11076\times 10^{26}b - 4.67615\times 10^{26},\\
&\qquad 9.23360\times 10^{24}u^{17} + 3.69267\times 10^{25}u^{16} + \cdots + 1.05852\times 10^{28}a + 1.11492\times 10^{28},\\
&\qquad u^{18} + u^{17} + \cdots + 512u + 206\rangle\\
I_4^u &= \langle b-1,\ 2a-u+2,\ u^2-2u+2\rangle\\
I_5^u &= \langle b^2+2b+2,\ a-1,\ u+1\rangle
\end{aligned}$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 56 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. $I^u_1 = \langle b + u,\ -5.40 \times 10^{21} u^{20} - 1.74 \times 10^{22} u^{19} + \cdots + 2.47 \times 10^{22} a - 8.83 \times 10^{22},\ u^{21} + 25u^{19} + \cdots + u + 1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.218285u^{20} + 0.701585u^{19} + \cdots + 4.16608u + 3.56990 \\ -u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.0236086u^{20} - 0.454671u^{19} + \cdots - 3.43605u - 1.12582 \\ -0.0461919u^{20} + 0.0773359u^{19} + \cdots + 1.91987u + 0.701585 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.218285u^{20} + 0.701585u^{19} + \cdots + 4.16608u + 3.56990 \\ 0.0461919u^{20} - 0.0773359u^{19} + \cdots - 1.91987u - 0.701585 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.701585u^{20} - 0.0461919u^{19} + \cdots - 3.35162u + 1.21829 \\ 0.0773359u^{20} - 0.0368722u^{19} + \cdots + 0.747777u + 0.0461919 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.344227u^{20} + 0.127290u^{19} + \cdots - 2.85190u + 0.707526 \\ 0.00198645u^{20} - 0.161647u^{19} + \cdots + 0.257401u - 0.164162 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.264477u^{20} + 0.624249u^{19} + \cdots + 2.24621u + 2.86832 \\ 0.0461919u^{20} - 0.0773359u^{19} + \cdots - 1.91987u - 0.701585 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.875790u^{20} + 0.451552u^{19} + \cdots - 5.00872u + 1.53539 \\ 0.266657u^{20} - 0.0156100u^{19} + \cdots + 0.224114u - 0.576327 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.0236086u^{20} + 0.454671u^{19} + \cdots + 3.43605u + 1.12582 \\ 0.200090u^{20} - 0.189555u^{19} + \cdots - 0.398150u - 1.15626 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.223699u^{20} + 0.265116u^{19} + \cdots + 3.03790u - 0.0304368 \\ 0.200090u^{20} - 0.189555u^{19} + \cdots - 0.398150u - 1.15626 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{340185662467156201442 59}{1236896161025218985765 2}u^{20} - \frac{46942232510177450762 99}{12368961610252189857652}u^{19} + \cdots - \frac{15316222551031169259 2391}{6184480805126094928826}u - \frac{44380162749147865603681}{12368961610252189857652}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{21} - 8u^{20} + \cdots - 22u + 2$
c_2, c_3	$u^{21} + 25u^{19} + \cdots + u + 1$
c_5	$u^{21} - 19u^{20} + \cdots - 1856u + 256$
c_6	$u^{21} + u^{20} + \cdots + 5u + 2$
c_7, c_{10}, c_{11}	$u^{21} - 8u^{20} + \cdots - 26u + 10$
c_8, c_{12}	$u^{21} + u^{20} + \cdots + 6u + 1$
c_9	$u^{21} - u^{20} + \cdots + 66u + 76$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{21} + 16y^{20} + \cdots + 56y - 4$
c_2, c_3	$y^{21} + 50y^{20} + \cdots - 19y - 1$
c_5	$y^{21} - 7y^{20} + \cdots + 348160y - 65536$
c_6	$y^{21} + 43y^{20} + \cdots - 179y - 4$
c_7, c_{10}, c_{11}	$y^{21} - 32y^{20} + \cdots + 1776y - 100$
c_8, c_{12}	$y^{21} + 11y^{20} + \cdots + 38y - 1$
c_9	$y^{21} + 29y^{20} + \cdots + 6636y - 5776$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.591384 + 0.684501I$ $a = 0.986086 - 0.952196I$ $b = -0.591384 - 0.684501I$	$2.90718 + 0.62164I$	$-0.21352 - 2.05306I$
$u = 0.591384 - 0.684501I$ $a = 0.986086 + 0.952196I$ $b = -0.591384 + 0.684501I$	$2.90718 - 0.62164I$	$-0.21352 + 2.05306I$
$u = 0.633459 + 0.554243I$ $a = 0.225131 - 0.559868I$ $b = -0.633459 - 0.554243I$	$3.13654 - 0.77238I$	$-1.08315 + 3.79652I$
$u = 0.633459 - 0.554243I$ $a = 0.225131 + 0.559868I$ $b = -0.633459 + 0.554243I$	$3.13654 + 0.77238I$	$-1.08315 - 3.79652I$
$u = -0.411221 + 0.734008I$ $a = -1.125200 - 0.068544I$ $b = 0.411221 - 0.734008I$	$3.06565 - 2.80817I$	$-0.13665 + 3.60000I$
$u = -0.411221 - 0.734008I$ $a = -1.125200 + 0.068544I$ $b = 0.411221 + 0.734008I$	$3.06565 + 2.80817I$	$-0.13665 - 3.60000I$
$u = 0.433795 + 0.519955I$ $a = -1.39067 + 1.14375I$ $b = -0.433795 - 0.519955I$	$8.38211 - 0.33360I$	$5.43964 + 0.18682I$
$u = 0.433795 - 0.519955I$ $a = -1.39067 - 1.14375I$ $b = -0.433795 + 0.519955I$	$8.38211 + 0.33360I$	$5.43964 - 0.18682I$
$u = -0.449539 + 0.447984I$ $a = 2.36305 + 0.92529I$ $b = 0.449539 - 0.447984I$	$9.25551 - 8.18754I$	$2.61786 + 4.84295I$
$u = -0.449539 - 0.447984I$ $a = 2.36305 - 0.92529I$ $b = 0.449539 + 0.447984I$	$9.25551 + 8.18754I$	$2.61786 - 4.84295I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.610649$ $a=\ \ 0.463396$ $b=\ \ 0.610649$	-1.19744	-2.54880
$u=\ \ 0.064145+0.480475I$ $a=-0.97482+2.36314I$ $b=-0.064145-0.480475I$	$4.25500+4.70062I$	$0.78101-5.95257I$
$u=\ \ 0.064145-0.480475I$ $a=-0.97482-2.36314I$ $b=-0.064145+0.480475I$	$4.25500-4.70062I$	$0.78101+5.95257I$
$u=-0.118660+0.375406I$ $a=\ \ 1.27547-0.90971I$ $b=\ \ 0.118660-0.375406I$	$-0.104584+1.401550I$	$-1.22515-5.35896I$
$u=-0.118660-0.375406I$ $a=\ \ 1.27547+0.90971I$ $b=\ \ 0.118660+0.375406I$	$-0.104584-1.401550I$	$-1.22515+5.35896I$
$u=-0.02275+2.82542I$ $a=\ \ 0.063198-0.686482I$ $b=\ \ 0.02275-2.82542I$	$-17.8874+12.7180I$	0
$u=-0.02275-2.82542I$ $a=\ \ 0.063198+0.686482I$ $b=\ \ 0.02275+2.82542I$	$-17.8874-12.7180I$	0
$u=-0.62719+2.81445I$ $a=-0.180831-0.609250I$ $b=\ \ 0.62719-2.81445I$	$19.4705-1.7019I$	0
$u=-0.62719-2.81445I$ $a=-0.180831+0.609250I$ $b=\ \ 0.62719+2.81445I$	$19.4705+1.7019I$	0
$u=\ \ 0.21191+2.98201I$ $a=\ \ 0.026904-0.620788I$ $b=-0.21191-2.98201I$	$15.8213-6.2554I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.21191 - 2.98201I$		
$a = 0.026904 + 0.620788I$	$15.8213 + 6.2554I$	0
$b = -0.21191 + 2.98201I$		

II. $I_2^u = \langle b+u,\ -3.04\times10^6u^{12}+8.38\times10^5u^{11}+\cdots+1.27\times10^6a-4.67\times10^6,\ u^{13}+4u^{11}+\cdots+2u+1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_8 = \begin{pmatrix}2.39125u^{12}-0.660059u^{11}+\cdots-9.61560u+3.67571\\-u\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-2.96162u^{12}+1.00248u^{11}+\cdots+12.9399u-5.17648\\-0.0312159u^{12}+0.392917u^{11}+\cdots+2.07113u-0.660059\end{pmatrix}$$
$$a_7 = \begin{pmatrix}2.39125u^{12}-0.660059u^{11}+\cdots-9.61560u+3.67571\\0.0312159u^{12}-0.392917u^{11}+\cdots-2.07113u+0.660059\end{pmatrix}$$
$$a_4 = \begin{pmatrix}0.660059u^{12}-0.0312159u^{11}+\cdots+1.10678u+3.39125\\0.392917u^{12}+0.0508833u^{11}+\cdots-0.597627u+0.0312159\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-1.65839u^{12}-0.257842u^{11}+\cdots+2.91119u+0.964264\\-0.424133u^{12}+0.342034u^{11}+\cdots+2.66876u+0.308725\end{pmatrix}$$
$$a_6 = \begin{pmatrix}2.42246u^{12}-1.05298u^{11}+\cdots-11.6867u+4.33576\\0.0312159u^{12}-0.392917u^{11}+\cdots-2.07113u+0.660059\end{pmatrix}$$
$$a_5 = \begin{pmatrix}1.26999u^{12}-1.05851u^{11}+\cdots-6.41247u+2.32712\\0.166291u^{12}-0.668395u^{11}+\cdots+0.612283u+1.34966\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}2.96162u^{12}-1.00248u^{11}+\cdots-12.9399u+5.17648\\-0.0266959u^{12}-0.872552u^{11}+\cdots-1.02779u+1.66254\end{pmatrix}$$
$$a_9 = \begin{pmatrix}2.93493u^{12}-1.87504u^{11}+\cdots-13.9677u+6.83902\\-0.0266959u^{12}-0.872552u^{11}+\cdots-1.02779u+1.66254\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{11098661}{1269257}u^{12}+\frac{5890928}{1269257}u^{11}+\cdots+\frac{9880480}{1269257}u-\frac{16615848}{1269257}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{13} - 5u^{12} + \cdots + 27u - 4$
c_2	$u^{13} + 4u^{11} + \cdots + 2u + 1$
c_3	$u^{13} + 4u^{11} + \cdots + 2u - 1$
c_4	$u^{13} + 5u^{12} + \cdots + 27u + 4$
c_5	$u^{13} + 6u^{12} + \cdots + u - 1$
c_6	$u^{13} - u^{12} + \cdots - u + 1$
c_7	$u^{13} - 5u^{12} + \cdots + 3u + 2$
c_8, c_{12}	$u^{13} - u^{12} + u^{11} + u^{10} + 2u^9 - 3u^8 + u^7 + 3u^6 - u^5 - 2u^4 + 2u^3 - u - 1$
c_9	$u^{13} - u^{12} + 6u^{11} + u^{10} + 12u^9 + 10u^8 + 9u^7 + 7u^6 + 6u^4 + 3u^3 - 3u^2 + 1$
c_{10}, c_{11}	$u^{13} + 5u^{12} + \cdots + 3u - 2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{13} + 9y^{12} + \cdots + 97y - 16$
c_2, c_3	$y^{13} + 8y^{12} + \cdots + 16y - 1$
c_5	$y^{13} - 6y^{12} + \cdots + 7y - 1$
c_6	$y^{13} + 9y^{12} + \cdots + 11y - 1$
c_7, c_{10}, c_{11}	$y^{13} - 19y^{12} + \cdots - 11y - 4$
c_8, c_{12}	$y^{13} + y^{12} + \cdots + y - 1$
c_9	$y^{13} + 11y^{12} + \cdots + 6y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.584682 + 0.557508I$ $a = 0.467799 + 0.459309I$ $b = -0.584682 - 0.557508I$	$1.87818 - 5.16888I$	$-5.45109 + 5.60438I$
$u = 0.584682 - 0.557508I$ $a = 0.467799 - 0.459309I$ $b = -0.584682 + 0.557508I$	$1.87818 + 5.16888I$	$-5.45109 - 5.60438I$
$u = -0.646836 + 0.067688I$ $a = 0.529126 - 0.404517I$ $b = 0.646836 - 0.067688I$	$-1.42512 - 0.47239I$	$-7.52545 + 9.55816I$
$u = -0.646836 - 0.067688I$ $a = 0.529126 + 0.404517I$ $b = 0.646836 + 0.067688I$	$-1.42512 + 0.47239I$	$-7.52545 - 9.55816I$
$u = 0.498804 + 0.404257I$ $a = -2.04698 + 0.60897I$ $b = -0.498804 - 0.404257I$	$6.09438 - 1.34909I$	$0.36538 + 1.86326I$
$u = 0.498804 - 0.404257I$ $a = -2.04698 - 0.60897I$ $b = -0.498804 + 0.404257I$	$6.09438 + 1.34909I$	$0.36538 - 1.86326I$
$u = -1.254250 + 0.588394I$ $a = -0.840675 - 0.538825I$ $b = 1.254250 - 0.588394I$	$6.40935 + 7.59409I$	$1.22194 - 5.34686I$
$u = -1.254250 - 0.588394I$ $a = -0.840675 + 0.538825I$ $b = 1.254250 + 0.588394I$	$6.40935 - 7.59409I$	$1.22194 + 5.34686I$
$u = 1.245380 + 0.642473I$ $a = 0.984992 - 0.368357I$ $b = -1.245380 - 0.642473I$	$4.54418 + 2.44460I$	$2.99018 - 2.95945I$
$u = 1.245380 - 0.642473I$ $a = 0.984992 + 0.368357I$ $b = -1.245380 + 0.642473I$	$4.54418 - 2.44460I$	$2.99018 + 2.95945I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.328910$ $a=\ \ 4.07049$ $b=\ \ 0.328910$	1.84881	-6.67710
$u=-0.26332+2.64930I$ $a=-0.129510-0.704018I$ $b=\ \ 0.26332-2.64930I$	$17.7632-2.2039I$	$0.237574+0.419872I$
$u=-0.26332-2.64930I$ $a=-0.129510+0.704018I$ $b=\ \ 0.26332+2.64930I$	$17.7632+2.2039I$	$0.237574-0.419872I$

III. $\boldsymbol{I^u_3 = \langle -4.67 \times 10^{23} u^{17} - 1.17 \times 10^{24} u^{16} + \cdots + 4.11 \times 10^{26} b - 4.68 \times 10^{26},\ 9.23 \times 10^{24} u^{17} + 3.69 \times 10^{25} u^{16} + \cdots + 1.06 \times 10^{28} a + 1.11 \times 10^{28},\ u^{18} + u^{17} + \cdots + 512u + 206 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.000872310u^{17} - 0.00348851u^{16} + \cdots - 0.911938u - 1.05328 \\ 0.00113669u^{17} + 0.00284649u^{16} + \cdots + 0.0571899u + 1.13754 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.00619818u^{17} - 0.00659840u^{16} + \cdots - 3.79065u - 2.55336 \\ -0.000735882u^{17} + 0.00238650u^{16} + \cdots + 0.849826u + 0.901098 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.000872310u^{17} - 0.00348851u^{16} + \cdots - 0.911938u - 1.05328 \\ 0.00337890u^{17} + 0.00352881u^{16} + \cdots + 1.57638u + 1.67648 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.00437426u^{17} - 0.00511014u^{16} + \cdots - 3.81879u - 1.38980 \\ 0.00392577u^{17} + 0.00295684u^{16} + \cdots + 1.78231u + 1.86297 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.00326686u^{17} - 0.00265625u^{16} + \cdots + 2.02077u - 1.22406 \\ -0.00672287u^{17} - 0.00269067u^{16} + \cdots - 2.56234u - 1.01072 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.00250659u^{17} + 0.0000402959u^{16} + \cdots + 0.664442u + 0.623194 \\ 0.00337890u^{17} + 0.00352881u^{16} + \cdots + 1.57638u + 1.67648 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.00870477u^{17} + 0.00663870u^{16} + \cdots + 4.45509u + 3.17656 \\ 0.00411478u^{17} + 0.00114230u^{16} + \cdots + 0.726555u + 0.775377 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.00619818u^{17} + 0.00659840u^{16} + \cdots + 3.79065u + 2.55336 \\ -0.00116233u^{17} - 0.00210654u^{16} + \cdots - 0.331565u - 0.983544 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.00503585u^{17} + 0.00449186u^{16} + \cdots + 3.45908u + 1.56982 \\ -0.00116233u^{17} - 0.00210654u^{16} + \cdots - 0.331565u - 0.983544 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{235631479672253860945636\,7}{205538248502201329427999196}u^{17} - \frac{1973562267006561018720 41}{102769124251100664713999598}u^{16} + \cdots - \frac{644603608722482183906910875}{102769124251100664713999598}u + \frac{779043824213903019617404 1}{102769124251100664713999598}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$(u^9 + u^8 + 5u^7 + 4u^6 + 8u^5 + 5u^4 + 2u^3 + u^2 - 4u - 1)^2$
c_2, c_3	$u^{18} + u^{17} + \cdots + 512u + 206$
c_5	$(u + 1)^{18}$
c_6	$u^{18} - u^{17} + \cdots - 532u + 401$
c_7, c_{10}, c_{11}	$(u^9 + 3u^8 - 3u^7 - 12u^6 + 6u^5 + 21u^4 - 2u^3 - 11u^2 - 6u - 1)^2$
c_8, c_{12}	$u^{18} + 3u^{17} + \cdots + 8u + 2$
c_9	$u^{18} - u^{17} + \cdots + 3168u + 1504$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y^9 + 9y^8 + 33y^7 + 58y^6 + 34y^5 - 39y^4 - 62y^3 - 7y^2 + 18y - 1)^2$
c_2, c_3	$y^{18} + 37y^{17} + \cdots - 103112y + 42436$
c_5	$(y - 1)^{18}$
c_6	$y^{18} + 39y^{17} + \cdots + 109154y + 160801$
c_7, c_{10}, c_{11}	$(y^9 - 15y^8 + \cdots + 14y - 1)^2$
c_8, c_{12}	$y^{18} + y^{17} + \cdots + 72y + 4$
c_9	$y^{18} + 25y^{17} + \cdots - 7100416y + 2262016$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.886434 + 0.371388I$ $a = 1.096950 - 0.459588I$ $b = -0.886434 + 0.371388I$	3.15999	$-1.78243 + 0.I$
$u = 0.886434 - 0.371388I$ $a = 1.096950 + 0.459588I$ $b = -0.886434 - 0.371388I$	3.15999	$-1.78243 + 0.I$
$u = 0.205642 + 0.879714I$ $a = 0.257101 + 0.425056I$ $b = -1.095690 + 0.759227I$	$2.95021 + 4.83805I$	$3.38372 - 2.81539I$
$u = 0.205642 - 0.879714I$ $a = 0.257101 - 0.425056I$ $b = -1.095690 - 0.759227I$	$2.95021 - 4.83805I$	$3.38372 + 2.81539I$
$u = -0.653145 + 0.189006I$ $a = 0.414794 + 0.120032I$ $b = 0.653145 + 0.189006I$	-1.18935	$-6 - 0.171800 + 0.10I$
$u = -0.653145 - 0.189006I$ $a = 0.414794 - 0.120032I$ $b = 0.653145 - 0.189006I$	-1.18935	$-6 - 0.171800 + 0.10I$
$u = 1.095690 + 0.759227I$ $a = -0.331949 - 0.056184I$ $b = -0.205642 + 0.879714I$	$2.95021 - 4.83805I$	$3.38372 + 2.81539I$
$u = 1.095690 - 0.759227I$ $a = -0.331949 + 0.056184I$ $b = -0.205642 - 0.879714I$	$2.95021 + 4.83805I$	$3.38372 - 2.81539I$
$u = -0.419711 + 0.477941I$ $a = -0.60540 - 2.16213I$ $b = 1.40135 + 0.64766I$	$7.78134 - 1.20594I$	$6.24179 + 1.20422I$
$u = -0.419711 - 0.477941I$ $a = -0.60540 + 2.16213I$ $b = 1.40135 - 0.64766I$	$7.78134 + 1.20594I$	$6.24179 - 1.20422I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.40135+0.64766I$ $a=-0.925008+0.013582I$ $b=\ \ 0.419711+0.477941I$	$7.78134+1.20594I$	$6.24179-1.20422I$
$u=-1.40135-0.64766I$ $a=-0.925008-0.013582I$ $b=\ \ 0.419711-0.477941I$	$7.78134-1.20594I$	$6.24179+1.20422I$
$u=-0.22580+2.48577I$ $a=\ \ 0.159711+0.767946I$ $b=\ \ 0.15187+2.78180I$	$19.3983-3.3753I$	$4.74375+2.72891I$
$u=-0.22580-2.48577I$ $a=\ \ 0.159711-0.767946I$ $b=\ \ 0.15187-2.78180I$	$19.3983+3.3753I$	$4.74375-2.72891I$
$u=\ \ 0.16411+2.66586I$ $a=-0.043531+0.707136I$ $b=-0.16411+2.66586I$	15.0815	$-6-0.784284+0.10I$
$u=\ \ 0.16411-2.66586I$ $a=-0.043531-0.707136I$ $b=-0.16411-2.66586I$	15.0815	$-6-0.784284+0.10I$
$u=-0.15187+2.78180I$ $a=-0.042083+0.701486I$ $b=\ \ 0.22580+2.48577I$	$19.3983+3.3753I$	$4.74375-2.72891I$
$u=-0.15187-2.78180I$ $a=-0.042083-0.701486I$ $b=\ \ 0.22580-2.48577I$	$19.3983-3.3753I$	$4.74375+2.72891I$

IV. $I_4^u = \langle b-1,\ 2a-u+2,\ u^2-2u+2\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ 2u-2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} \frac{1}{2}u-1 \\ 1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -\frac{1}{2}u+1 \\ u-1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} \frac{1}{2}u-1 \\ -u+1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} \frac{1}{2}u \\ u-1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -\frac{1}{2}u+2 \\ 1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -\frac{1}{2}u \\ -u+1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u+1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} \frac{1}{2}u-1 \\ 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} \frac{1}{2}u \\ 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_6 c_8	$u^2 + 1$
c_2, c_{12}	$u^2 - 2u + 2$
c_3, c_5, c_{10} c_{11}	$(u-1)^2$
c_7, c_9	$(u+1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_6 c_8	$(y+1)^2$
c_2, c_{12}	y^2+4
c_3, c_5, c_7 c_9, c_{10}, c_{11}	$(y-1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 1.00000 + 1.00000I$ $a = -0.500000 + 0.500000I$ $b = \quad 1.00000$	4.93480	4.00000
$u = \quad 1.00000 - 1.00000I$ $a = -0.500000 - 0.500000I$ $b = \quad 1.00000$	4.93480	4.00000

V. $I_5^u = \langle b^2+2b+2,\ a-1,\ u+1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ b \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -1 \\ -b-1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ b+1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} b+1 \\ -b-1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} b+2 \\ b+1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} b+1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ b \end{pmatrix}$$
$$a_9 = \begin{pmatrix} b+1 \\ b \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_6 c_{12}	$u^2 + 1$
c_2, c_7	$(u+1)^2$
c_3	$u^2 + 2u + 2$
c_5, c_{10}, c_{11}	$(u-1)^2$
c_8, c_9	$u^2 - 2u + 2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_6 c_{12}	$(y+1)^2$
c_2, c_5, c_7 c_{10}, c_{11}	$(y-1)^2$
c_3, c_8, c_9	y^2+4

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = \quad 1.00000$ $b = -1.00000 + 1.00000I$	4.93480	4.00000
$u = -1.00000$ $a = \quad 1.00000$ $b = -1.00000 - 1.00000I$	4.93480	4.00000

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^2+1)^2(u^9+u^8+5u^7+4u^6+8u^5+5u^4+2u^3+u^2-4u-1)^2$ $\cdot(u^{13}-5u^{12}+\cdots+27u-4)(u^{21}-8u^{20}+\cdots-22u+2)$
c_2	$((u+1)^2)(u^2-2u+2)(u^{13}+4u^{11}+\cdots+2u+1)$ $\cdot(u^{18}+u^{17}+\cdots+512u+206)(u^{21}+25u^{19}+\cdots+u+1)$
c_3	$((u-1)^2)(u^2+2u+2)(u^{13}+4u^{11}+\cdots+2u-1)$ $\cdot(u^{18}+u^{17}+\cdots+512u+206)(u^{21}+25u^{19}+\cdots+u+1)$
c_4	$(u^2+1)^2(u^9+u^8+5u^7+4u^6+8u^5+5u^4+2u^3+u^2-4u-1)^2$ $\cdot(u^{13}+5u^{12}+\cdots+27u+4)(u^{21}-8u^{20}+\cdots-22u+2)$
c_5	$((u-1)^4)(u+1)^{18}(u^{13}+6u^{12}+\cdots+u-1)$ $\cdot(u^{21}-19u^{20}+\cdots-1856u+256)$
c_6	$((u^2+1)^2)(u^{13}-u^{12}+\cdots-u+1)(u^{18}-u^{17}+\cdots-532u+401)$ $\cdot(u^{21}+u^{20}+\cdots+5u+2)$
c_7	$(u+1)^4$ $\cdot(u^9+3u^8-3u^7-12u^6+6u^5+21u^4-2u^3-11u^2-6u-1)^2$ $\cdot(u^{13}-5u^{12}+\cdots+3u+2)(u^{21}-8u^{20}+\cdots-26u+10)$
c_8, c_{12}	$(u^2+1)(u^2-2u+2)$ $\cdot(u^{13}-u^{12}+u^{11}+u^{10}+2u^9-3u^8+u^7+3u^6-u^5-2u^4+2u^3-u-1)$ $\cdot(u^{18}+3u^{17}+\cdots+8u+2)(u^{21}+u^{20}+\cdots+6u+1)$
c_9	$(u+1)^2(u^2-2u+2)$ $\cdot(u^{13}-u^{12}+6u^{11}+u^{10}+12u^9+10u^8+9u^7+7u^6+6u^4+3u^3-3u^2+1)$ $\cdot(u^{18}-u^{17}+\cdots+3168u+1504)(u^{21}-u^{20}+\cdots+66u+76)$
c_{10}, c_{11}	$(u-1)^4$ $\cdot(u^9+3u^8-3u^7-12u^6+6u^5+21u^4-2u^3-11u^2-6u-1)^2$ $\cdot(u^{13}+5u^{12}+\cdots+3u-2)(u^{21}-8u^{20}+\cdots-26u+10)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y+1)^4$ $\cdot\,(y^9+9y^8+33y^7+58y^6+34y^5-39y^4-62y^3-7y^2+18y-1)^2$ $\cdot\,(y^{13}+9y^{12}+\cdots+97y-16)(y^{21}+16y^{20}+\cdots+56y-4)$
c_2, c_3	$((y-1)^2)(y^2+4)(y^{13}+8y^{12}+\cdots+16y-1)$ $\cdot\,(y^{18}+37y^{17}+\cdots-103112y+42436)(y^{21}+50y^{20}+\cdots-19y-1)$
c_5	$((y-1)^{22})(y^{13}-6y^{12}+\cdots+7y-1)$ $\cdot\,(y^{21}-7y^{20}+\cdots+348160y-65536)$
c_6	$((y+1)^4)(y^{13}+9y^{12}+\cdots+11y-1)$ $\cdot\,(y^{18}+39y^{17}+\cdots+109154y+160801)$ $\cdot\,(y^{21}+43y^{20}+\cdots-179y-4)$
c_7, c_{10}, c_{11}	$((y-1)^4)(y^9-15y^8+\cdots+14y-1)^2(y^{13}-19y^{12}+\cdots-11y-4)$ $\cdot\,(y^{21}-32y^{20}+\cdots+1776y-100)$
c_8, c_{12}	$((y+1)^2)(y^2+4)(y^{13}+y^{12}+\cdots+y-1)(y^{18}+y^{17}+\cdots+72y+4)$ $\cdot\,(y^{21}+11y^{20}+\cdots+38y-1)$
c_9	$((y-1)^2)(y^2+4)(y^{13}+11y^{12}+\cdots+6y-1)$ $\cdot\,(y^{18}+25y^{17}+\cdots-7100416y+2262016)$ $\cdot\,(y^{21}+29y^{20}+\cdots+6636y-5776)$