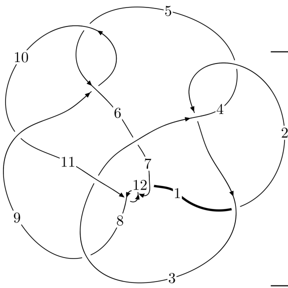
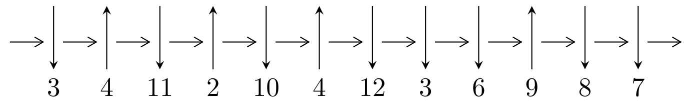
$12n_{0274}$ $(K12n_{0274})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle &-u^{12} + 5u^{11} - 18u^{10} + 45u^9 - 87u^8 + 135u^7 - 162u^6 + 154u^5 - 100u^4 + 34u^3 + 12u^2 + 4b - 24u + 8, \\
&- u^{11} + 5u^{10} - 18u^9 + 41u^8 - 75u^7 + 103u^6 - 110u^5 + 86u^4 - 36u^3 - 2u^2 + 4a + 20u - 12, \\
&u^{13} - 5u^{12} + 18u^{11} - 45u^{10} + 89u^9 - 141u^8 + 178u^7 - 180u^6 + 134u^5 - 64u^4 + 4u^3 + 24u^2 - 16u + 4\rangle \\
I_2^u = \langle &-u^{11}a - 2u^{10}a + \cdots - 2a - 3,\ 3u^{12}a - u^{12} + \cdots + 2a^2 - 2, \\
&u^{13} + 2u^{12} + 7u^{11} + 10u^{10} + 18u^9 + 20u^8 + 21u^7 + 20u^6 + 11u^5 + 10u^4 + u^3 + 4u^2 + 2\rangle \\
I_3^u = \langle &-au + 9b + 4a - u + 4,\ 2a^2 - au + 3u + 5,\ u^2 + 2\rangle \\
I_4^u = \langle &4b + 2a + u + 2,\ 2a^2 + 2au + 5,\ u^2 + 2\rangle
\end{aligned}$$

$$\begin{aligned}
I_1^v &= \langle a,\ b^2 - b + 1,\ v + 1\rangle \\
I_2^v &= \langle a,\ b + v - 1,\ v^2 - v + 1\rangle
\end{aligned}$$

* 6 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 51 representations.

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[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. $I^u_1 = \langle -u^{12}+5u^{11}+\cdots+4b+8,\ -u^{11}+5u^{10}+\cdots+4a-12,\ u^{13}-5u^{12}+\cdots-16u+4\rangle$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} \frac{1}{4}u^{11} - \frac{5}{4}u^{10} + \cdots - 5u + 3 \\ \frac{1}{4}u^{12} - \frac{5}{4}u^{11} + \cdots + 6u - 2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} \frac{1}{4}u^{12} - u^{11} + \cdots + u + 1 \\ \frac{1}{4}u^{12} - \frac{5}{4}u^{11} + \cdots + 6u - 2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} \frac{1}{4}u^{12} - u^{11} + \cdots + \frac{1}{2}u^2 - 2u \\ -\frac{1}{4}u^{12} + \frac{3}{4}u^{11} + \cdots - u + 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} \frac{1}{4}u^{12} - \frac{3}{2}u^{11} + \cdots + 8u - 2 \\ -\frac{1}{4}u^{12} + \frac{5}{4}u^{11} + \cdots - 4u + 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^{12} + 5u^{11} + \cdots - 20u + 7 \\ u^4 + 2u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} \frac{1}{2}u^{12} - \frac{9}{4}u^{11} + \cdots + 10u - 4 \\ \frac{1}{4}u^{12} - \frac{5}{4}u^{11} + \cdots + 4u - 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} \frac{1}{2}u^{12} - \frac{5}{4}u^{11} + \cdots - \frac{1}{2}u^2 + u \\ \frac{1}{4}u^{12} - \frac{3}{4}u^{11} + \cdots - 2u^2 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 2u^{12}-7u^{11}+25u^{10}-55u^9+106u^8-159u^7+190u^6-185u^5+117u^4-42u^3-22u^2+42u-14$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{13}+19u^{12}+\cdots+15u-1$
c_2, c_4, c_{10}	$u^{13}-3u^{12}+\cdots-u+1$
c_3, c_5, c_9	$u^{13}+u^{12}+2u^{11}+u^{10}+6u^9+4u^8+8u^7+3u^6+8u^5+4u^3+u^2+u+1$
c_6	$u^{13}+u^{12}+\cdots+1321u+181$
c_7, c_{11}, c_{12}	$u^{13}-5u^{12}+\cdots-16u+4$
c_8	$u^{13}-u^{12}+\cdots-39u+11$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{13} - 61y^{12} + \cdots + 287y - 1$
c_2, c_4, c_{10}	$y^{13} + 19y^{12} + \cdots + 15y - 1$
c_3, c_5, c_9	$y^{13} + 3y^{12} + \cdots - y - 1$
c_6	$y^{13} + 39y^{12} + \cdots + 2051655y - 32761$
c_7, c_{11}, c_{12}	$y^{13} + 11y^{12} + \cdots + 64y - 16$
c_8	$y^{13} - 13y^{12} + \cdots + 1191y - 121$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.148130 + 0.133771I$ $a = -0.461030 + 0.761015I$ $b = -0.953736 - 1.010370I$	$-12.6764 - 7.1373I$	$-6.57814 + 4.53811I$
$u = 1.148130 - 0.133771I$ $a = -0.461030 - 0.761015I$ $b = -0.953736 + 1.010370I$	$-12.6764 + 7.1373I$	$-6.57814 - 4.53811I$
$u = 0.122498 + 1.377410I$ $a = -0.69924 + 2.04411I$ $b = -0.201153 - 0.911850I$	$7.00880 - 3.27286I$	$6.62507 + 4.15467I$
$u = 0.122498 - 1.377410I$ $a = -0.69924 - 2.04411I$ $b = -0.201153 + 0.911850I$	$7.00880 + 3.27286I$	$6.62507 - 4.15467I$
$u = -0.12567 + 1.42776I$ $a = -0.020580 - 1.032540I$ $b = -0.563900 + 0.510841I$	$3.89768 + 2.33726I$	$-4.18156 - 2.46985I$
$u = -0.12567 - 1.42776I$ $a = -0.020580 + 1.032540I$ $b = -0.563900 - 0.510841I$	$3.89768 - 2.33726I$	$-4.18156 + 2.46985I$
$u = -0.534170$ $a = 0.577891$ $b = 0.497979$	-0.888404	-11.3990
$u = 0.67458 + 1.31287I$ $a = -0.656821 + 0.500993I$ $b = 0.999822 - 0.879885I$	$-9.09521 + 0.75227I$	$-5.18637 - 1.36359I$
$u = 0.67458 - 1.31287I$ $a = -0.656821 - 0.500993I$ $b = 0.999822 + 0.879885I$	$-9.09521 - 0.75227I$	$-5.18637 + 1.36359I$
$u = 0.420458 + 0.308747I$ $a = 1.11560 - 0.96767I$ $b = 0.108686 + 0.774322I$	$1.70562 - 1.30597I$	$1.36439 + 5.54852I$

	Solutions to I^u_1	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$0.420458 - 0.308747I$		
$a =$	$1.11560 + 0.96767I$	$1.70562 + 1.30597I$	$1.36439 - 5.54852I$
$b =$	$0.108686 - 0.774322I$		
$u =$	$0.52709 + 1.45902I$		
$a =$	$0.43312 - 1.92910I$	$-7.6681 - 13.1014I$	$-3.34370 + 7.13870I$
$b =$	$0.861292 + 1.076230I$		
$u =$	$0.52709 - 1.45902I$		
$a =$	$0.43312 + 1.92910I$	$-7.6681 + 13.1014I$	$-3.34370 - 7.13870I$
$b =$	$0.861292 - 1.076230I$		

II. $I^u_2 =$
$\langle -u^{11}a-2u^{10}a+\cdots-2a-3,\ 3u^{12}a-u^{12}+\cdots+2a^2-2,\ u^{13}+2u^{12}+\cdots+4u^2+2\rangle$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} a \\ \frac{1}{2}u^{11}a + u^{10}a + \cdots + a + \frac{3}{2} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} \frac{1}{2}u^{11}a + u^{10}a + \cdots + 2a + \frac{3}{2} \\ \frac{1}{2}u^{11}a + u^{10}a + \cdots + a + \frac{3}{2} \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -\frac{1}{2}u^{12}a - \frac{3}{2}u^{11}a + \cdots - 3u^2 - \frac{5}{2}u \\ -\frac{1}{2}u^{12}a + \frac{1}{2}u^{12} + \cdots + a + \frac{1}{2} \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -\frac{1}{2}u^{12}a + \frac{1}{4}u^{12} + \cdots + \frac{3}{2}a + \frac{5}{2} \\ \frac{1}{2}u^{11}a + \frac{1}{2}u^{12} + \cdots + 2a - \frac{1}{2} \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^{12} + u^{11} + \cdots + 2a - 3 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} \frac{1}{2}u^{12}a + \frac{1}{2}u^{11} + \cdots - 2a + \frac{1}{2} \\ \frac{1}{2}u^{11}a - \frac{1}{2}u^{12} + \cdots + 2a - \frac{5}{2} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} \frac{1}{2}u^{12}a - \frac{1}{4}u^{12} + \cdots + \frac{3}{2}a + \frac{5}{2} \\ \frac{1}{2}u^{11}a + \frac{1}{2}u^{12} + \cdots + 2a + \frac{1}{2} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -u^{12} - 3u^{10} + 4u^9 + 2u^8 + 14u^7 + 15u^6 + 12u^5 + 17u^4 - 2u^3 + 7u^2 - 6u$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{26} + 30u^{25} + \cdots - 1609u + 81$
c_2, c_4, c_{10}	$u^{26} - 6u^{25} + \cdots - 95u + 9$
c_3, c_5, c_9	$u^{26} + 2u^{25} + \cdots - 5u + 3$
c_6	$u^{26} + 3u^{25} + \cdots - 8726u + 1181$
c_7, c_{11}, c_{12}	$(u^{13} + 2u^{12} + \cdots + 4u^2 + 2)^2$
c_8	$u^{26} + u^{25} + \cdots - 456u + 241$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{26} - 50y^{25} + \cdots + 5625167y + 6561$
c_2, c_4, c_{10}	$y^{26} + 30y^{25} + \cdots - 1609y + 81$
c_3, c_5, c_9	$y^{26} + 6y^{25} + \cdots + 95y + 9$
c_6	$y^{26} + 37y^{25} + \cdots - 40866606y + 1394761$
c_7, c_{11}, c_{12}	$(y^{13} + 10y^{12} + \cdots - 16y - 4)^2$
c_8	$y^{26} - 15y^{25} + \cdots - 481230y + 58081$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.190251 + 0.933207I$ $a = 0.298460 - 0.362265I$ $b = 0.719395 + 0.860977I$	$1.31987 + 0.84014I$	$-1.01632 - 1.58660I$
$u = -0.190251 + 0.933207I$ $a = -0.31610 - 2.95092I$ $b = -0.406685 + 1.088750I$	$1.31987 + 0.84014I$	$-1.01632 - 1.58660I$
$u = -0.190251 - 0.933207I$ $a = 0.298460 + 0.362265I$ $b = 0.719395 - 0.860977I$	$1.31987 - 0.84014I$	$-1.01632 + 1.58660I$
$u = -0.190251 - 0.933207I$ $a = -0.31610 + 2.95092I$ $b = -0.406685 - 1.088750I$	$1.31987 - 0.84014I$	$-1.01632 + 1.58660I$
$u = -0.522806 + 0.734222I$ $a = 0.408662 + 0.796811I$ $b = 0.798739 - 0.694333I$	$-1.83264 + 2.12437I$	$-6.63093 - 3.54511I$
$u = -0.522806 + 0.734222I$ $a = 0.671809 - 0.426036I$ $b = -0.780847 - 0.269963I$	$-1.83264 + 2.12437I$	$-6.63093 - 3.54511I$
$u = -0.522806 - 0.734222I$ $a = 0.408662 - 0.796811I$ $b = 0.798739 + 0.694333I$	$-1.83264 - 2.12437I$	$-6.63093 + 3.54511I$
$u = -0.522806 - 0.734222I$ $a = 0.671809 + 0.426036I$ $b = -0.780847 + 0.269963I$	$-1.83264 - 2.12437I$	$-6.63093 + 3.54511I$
$u = 0.354216 + 1.088690I$ $a = 0.804166 - 1.057380I$ $b = 0.780806 + 0.869479I$	$1.27349 - 6.51495I$	$-1.32958 + 6.90681I$
$u = 0.354216 + 1.088690I$ $a = -0.53542 + 2.66449I$ $b = -0.376849 - 1.157840I$	$1.27349 - 6.51495I$	$-1.32958 + 6.90681I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.354216 - 1.088690I$ $a = 0.804166 + 1.057380I$ $b = 0.780806 - 0.869479I$	$1.27349 + 6.51495I$	$-1.32958 - 6.90681I$
$u = 0.354216 - 1.088690I$ $a = -0.53542 - 2.66449I$ $b = -0.376849 + 1.157840I$	$1.27349 + 6.51495I$	$-1.32958 - 6.90681I$
$u = -1.16445$ $a = -0.292211 + 0.542220I$ $b = -0.996994 - 0.942106I$	-12.9066	-6.99580
$u = -1.16445$ $a = -0.292211 - 0.542220I$ $b = -0.996994 + 0.942106I$	-12.9066	-6.99580
$u = 0.475729 + 0.397522I$ $a = 0.255684 + 0.929938I$ $b = 0.587541 - 0.997816I$	$-0.73347 + 3.14087I$	$-5.81698 - 0.90558I$
$u = 0.475729 + 0.397522I$ $a = 0.907624 + 1.022940I$ $b = -0.603946 + 0.535433I$	$-0.73347 + 3.14087I$	$-5.81698 - 0.90558I$
$u = 0.475729 - 0.397522I$ $a = 0.255684 - 0.929938I$ $b = 0.587541 + 0.997816I$	$-0.73347 - 3.14087I$	$-5.81698 + 0.90558I$
$u = 0.475729 - 0.397522I$ $a = 0.907624 - 1.022940I$ $b = -0.603946 - 0.535433I$	$-0.73347 - 3.14087I$	$-5.81698 + 0.90558I$
$u = 0.065416 + 1.409480I$ $a = -0.944118 + 0.771575I$ $b = -0.110601 - 0.414458I$	$5.12373 + 1.84437I$	$0.90018 - 3.35466I$
$u = 0.065416 + 1.409480I$ $a = 0.14726 - 1.84752I$ $b = -0.534312 + 0.945546I$	$5.12373 + 1.84437I$	$0.90018 - 3.35466I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.065416 - 1.409480I$ $a = -0.944118 - 0.771575I$ $b = -0.110601 + 0.414458I$	$5.12373 - 1.84437I$	$0.90018 + 3.35466I$
$u = 0.065416 - 1.409480I$ $a = 0.14726 + 1.84752I$ $b = -0.534312 - 0.945546I$	$5.12373 - 1.84437I$	$0.90018 + 3.35466I$
$u = -0.60008 + 1.40135I$ $a = -0.751907 - 0.379224I$ $b = 1.015400 + 0.803176I$	$-8.56727 + 6.23778I$	$-4.60847 - 2.87458I$
$u = -0.60008 + 1.40135I$ $a = 0.34609 + 1.75574I$ $b = 0.908351 - 1.039740I$	$-8.56727 + 6.23778I$	$-4.60847 - 2.87458I$
$u = -0.60008 - 1.40135I$ $a = -0.751907 + 0.379224I$ $b = 1.015400 - 0.803176I$	$-8.56727 - 6.23778I$	$-4.60847 + 2.87458I$
$u = -0.60008 - 1.40135I$ $a = 0.34609 - 1.75574I$ $b = 0.908351 + 1.039740I$	$-8.56727 - 6.23778I$	$-4.60847 + 2.87458I$

III. $\boldsymbol{I^u_3 = \langle -au + 9b + 4a - u + 4,\ 2a^2 - au + 3u + 5,\ u^2 + 2\rangle}$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} a \\ \frac{1}{9}au - \frac{4}{9}a + \frac{1}{9}u - \frac{4}{9} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1 \\ -2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} \frac{1}{9}au + \frac{5}{9}a + \frac{1}{9}u - \frac{4}{9} \\ \frac{1}{9}au - \frac{4}{9}a + \frac{1}{9}u - \frac{4}{9} \end{pmatrix}$$

$$a_9 = \begin{pmatrix} \frac{2}{3}au + \frac{1}{3}a + \frac{1}{6}u - \frac{5}{3} \\ \frac{1}{9}au - \frac{4}{9}a + \frac{1}{9}u + \frac{5}{9} \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{2}{9}au + \frac{1}{9}a - \frac{5}{18}u - \frac{17}{9} \\ \frac{1}{9}au - \frac{4}{9}a + \frac{1}{9}u + \frac{5}{9} \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} u \\ -u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -\frac{5}{9}au - \frac{7}{9}a - \frac{1}{18}u + \frac{20}{9} \\ -\frac{1}{9}au + \frac{4}{9}a - \frac{1}{9}u - \frac{5}{9} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} a + u \\ \frac{1}{9}au - \frac{4}{9}a + \frac{1}{9}u - \frac{4}{9} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{8}{9}au + \frac{32}{9}a - \frac{8}{9}u - \frac{4}{9}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_4 c_9, c_{10}	$(u^2 - u + 1)^2$
c_2, c_5	$(u^2 + u + 1)^2$
c_6	$u^4 + 2u^3 + u^2 - 6u + 3$
c_7, c_{11}, c_{12}	$(u^2 + 2)^2$
c_8	$u^4 - 2u^3 + u^2 + 6u + 3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_4, c_5, c_9 c_{10}	$(y^2 + y + 1)^2$
c_6, c_8	$y^4 - 2y^3 + 31y^2 - 30y + 9$
c_7, c_{11}, c_{12}	$(y + 2)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.414210I$ $a = 0.61237 - 1.37850I$ $b = -0.500000 + 0.866025I$	$4.93480 + 4.05977I$	$0. - 6.92820I$
$u = 1.414210I$ $a = -0.61237 + 2.08560I$ $b = -0.500000 - 0.866025I$	$4.93480 - 4.05977I$	$0. + 6.92820I$
$u = -1.414210I$ $a = 0.61237 + 1.37850I$ $b = -0.500000 - 0.866025I$	$4.93480 - 4.05977I$	$0. + 6.92820I$
$u = -1.414210I$ $a = -0.61237 - 2.08560I$ $b = -0.500000 + 0.866025I$	$4.93480 + 4.05977I$	$0. - 6.92820I$

IV. $I_4^u = \langle 4b + 2a + u + 2,\ 2a^2 + 2au + 5,\ u^2 + 2\rangle$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} a \\ -\frac{1}{2}a - \frac{1}{4}u - \frac{1}{2} \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ -2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} \frac{1}{2}a - \frac{1}{4}u - \frac{1}{2} \\ -\frac{1}{2}a - \frac{1}{4}u - \frac{1}{2} \end{pmatrix}$$
$$a_9 = \begin{pmatrix} \frac{1}{2}au - a + \frac{1}{2}u + \frac{1}{2} \\ \frac{1}{2}a + \frac{1}{4}u + \frac{1}{2} \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -\frac{1}{4}au - \frac{1}{4}u - \frac{7}{4} \\ -\frac{1}{2}a - \frac{1}{4}u + \frac{1}{2} \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u \\ -u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -\frac{1}{2}au + \frac{3}{2}a - \frac{1}{4}u \\ -\frac{1}{2}a - \frac{1}{4}u - \frac{1}{2} \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} \frac{3}{4}au - \frac{1}{4}u + \frac{9}{4} \\ \frac{1}{2}a + \frac{1}{4}u - \frac{1}{2} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_4 c_9, c_{10}	$(u^2 - u + 1)^2$
c_2, c_5	$(u^2 + u + 1)^2$
c_6	$u^4 - 4u^3 + 4u^2 + 3$
c_7, c_{11}, c_{12}	$(u^2 + 2)^2$
c_8	$u^4 + 4u^3 + 4u^2 + 3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_4, c_5, c_9 c_{10}	$(y^2 + y + 1)^2$
c_6, c_8	$y^4 - 8y^3 + 22y^2 + 24y + 9$
c_7, c_{11}, c_{12}	$(y + 2)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.414210I$ $a = 1.024940I$ $b = -0.500000 - 0.866025I$	4.93480	0
$u = 1.414210I$ $a = -2.43916I$ $b = -0.500000 + 0.866025I$	4.93480	0
$u = -1.414210I$ $a = -1.024940I$ $b = -0.500000 + 0.866025I$	4.93480	0
$u = -1.414210I$ $a = 2.43916I$ $b = -0.500000 - 0.866025I$	4.93480	0

V. $I_1^v = \langle a,\ b^2 - b + 1,\ v + 1\rangle$

(i) Arc colorings

$$a_8 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} b \\ b \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -b \\ -b + 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} b \\ b - 1 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -1 \\ -b + 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0 \\ -b \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 8b - 4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = -1.00000$ $a = 0$ $b = 0.500000 + 0.866025I$	$-4.05977I$	$0. + 6.92820I$
$v = -1.00000$ $a = 0$ $b = 0.500000 - 0.866025I$	$4.05977I$	$0. - 6.92820I$

VI. $I_2^v = \langle a,\ b + v - 1,\ v^2 - v + 1\rangle$

(i) Arc colorings

$$a_8 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0 \\ -v+1 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -v+1 \\ -v+1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ -v+1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -v+1 \\ -v \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} v \\ -v+1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -v+2 \\ -v \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

	Solutions to I_2^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v =$	$0.500000 + 0.866025I$		
$a =$	0	0	-6.00000
$b =$	$0.500000 - 0.866025I$		
$v =$	$0.500000 - 0.866025I$		
$a =$	0	0	-6.00000
$b =$	$0.500000 + 0.866025I$		

VII. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2-u+1)^6)(u^{13}+19u^{12}+\cdots+15u-1)$ $\cdot(u^{26}+30u^{25}+\cdots-1609u+81)$
c_2	$((u^2+u+1)^6)(u^{13}-3u^{12}+\cdots-u+1)(u^{26}-6u^{25}+\cdots-95u+9)$
c_3, c_9	$(u^2-u+1)^4(u^2+u+1)^2$ $\cdot(u^{13}+u^{12}+2u^{11}+u^{10}+6u^9+4u^8+8u^7+3u^6+8u^5+4u^3+u^2+u+1)$ $\cdot(u^{26}+2u^{25}+\cdots-5u+3)$
c_4, c_{10}	$((u^2-u+1)^6)(u^{13}-3u^{12}+\cdots-u+1)(u^{26}-6u^{25}+\cdots-95u+9)$
c_5	$(u^2-u+1)^2(u^2+u+1)^4$ $\cdot(u^{13}+u^{12}+2u^{11}+u^{10}+6u^9+4u^8+8u^7+3u^6+8u^5+4u^3+u^2+u+1)$ $\cdot(u^{26}+2u^{25}+\cdots-5u+3)$
c_6	$(u-1)^2(u^2+u+1)(u^4-4u^3+4u^2+3)(u^4+2u^3+u^2-6u+3)$ $\cdot(u^{13}+u^{12}+\cdots+1321u+181)(u^{26}+3u^{25}+\cdots-8726u+1181)$
c_7, c_{11}, c_{12}	$u^4(u^2+2)^4(u^{13}-5u^{12}+\cdots-16u+4)(u^{13}+2u^{12}+\cdots+4u^2+2)^2$
c_8	$(u-1)^2(u^2+u+1)(u^4-2u^3+u^2+6u+3)(u^4+4u^3+4u^2+3)$ $\cdot(u^{13}-u^{12}+\cdots-39u+11)(u^{26}+u^{25}+\cdots-456u+241)$

VIII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^2+y+1)^6)(y^{13}-61y^{12}+\cdots+287y-1)$ $\cdot(y^{26}-50y^{25}+\cdots+5625167y+6561)$
c_2, c_4, c_{10}	$((y^2+y+1)^6)(y^{13}+19y^{12}+\cdots+15y-1)$ $\cdot(y^{26}+30y^{25}+\cdots-1609y+81)$
c_3, c_5, c_9	$((y^2+y+1)^6)(y^{13}+3y^{12}+\cdots-y-1)(y^{26}+6y^{25}+\cdots+95y+9)$
c_6	$(y-1)^2(y^2+y+1)(y^4-8y^3+22y^2+24y+9)$ $\cdot(y^4-2y^3+31y^2-30y+9)(y^{13}+39y^{12}+\cdots+2051655y-32761)$ $\cdot(y^{26}+37y^{25}+\cdots-40866606y+1394761)$
c_7, c_{11}, c_{12}	$y^4(y+2)^8(y^{13}+10y^{12}+\cdots-16y-4)^2$ $\cdot(y^{13}+11y^{12}+\cdots+64y-16)$
c_8	$(y-1)^2(y^2+y+1)(y^4-8y^3+22y^2+24y+9)$ $\cdot(y^4-2y^3+31y^2-30y+9)(y^{13}-13y^{12}+\cdots+1191y-121)$ $\cdot(y^{26}-15y^{25}+\cdots-481230y+58081)$