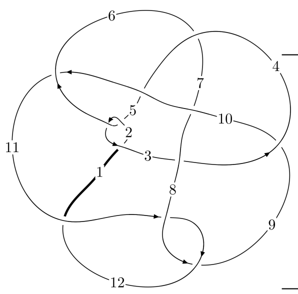
$12n_{0328}$ ($K12n_{0328}$)



A knot diagram[1]

Linearized knot diagam

$\rightarrow\downarrow\rightarrow\downarrow\rightarrow\downarrow\rightarrow\downarrow\rightarrow\downarrow\rightarrow\downarrow\rightarrow\downarrow\rightarrow\downarrow\rightarrow\downarrow\rightarrow\downarrow\rightarrow\downarrow\rightarrow\downarrow\rightarrow$

3 6 8 10 2 4 10 12 4 6 8 11

Solving Sequence

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

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

$$\begin{aligned}
I^u_1 = \langle & -4283194u^{11} + 2308461u^{10} + \cdots + 21359143b - 4337843, \\
& -139682999u^{11} + 35486115u^{10} + \cdots + 21359143a - 526213370, \\
& u^{12} + u^{10} + 10u^9 + u^8 - 6u^7 - 28u^6 - 45u^5 - 26u^4 - 34u^3 - 3u^2 + 5u + 1\rangle \\
I^u_2 = \langle & -u^5 - 2u^4 - u^3 - 5u^2 + 2b + 1,\ -u^5 + u^4 + 4u^3 - 2u^2 + 4a + 13u - 3,\ u^6 + 2u^5 + u^4 + 4u^3 - u^2 - 2u - 1 \\
I^u_3 = \langle & u^2 + b,\ -u^2 + a + u + 1,\ u^3 - u^2 - 2u + 1\rangle \\
I^u_4 = \langle & u^3 + u^2 + 6b + 3u + 1,\ -2u^3 - 23u^2 + 138a + 30u - 77,\ u^4 + 8u^2 + 4u + 23\rangle \\
I^u_5 = \langle & b - 1,\ a^2 + a + 1,\ u - 1\rangle
\end{aligned}$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 27 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.

$\boldsymbol{I_1^u = \langle -4.28\times10^6u^{11}+2.31\times10^6u^{10}+\cdots+2.14\times10^7b-4.34\times10^6,\ -1.40\times10^8u^{11}+3.55\times10^7u^{10}+\cdots+2.14\times10^7a-5.26\times10^8,\ u^{12}+u^{10}+\cdots+5u+1\rangle}$

(i) Arc colorings

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

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

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

$$a_{10} = \begin{pmatrix}6.53973u^{11}-1.66140u^{10}+\cdots+29.8803u+24.6364\\0.200532u^{11}-0.108078u^{10}+\cdots+3.23080u+0.203091\end{pmatrix}$$

$$a_7 = \begin{pmatrix}-9.40115u^{11}+2.69041u^{10}+\cdots-50.5716u-32.5778\\1.66140u^{11}-0.430541u^{10}+\cdots+8.06220u+6.53973\end{pmatrix}$$

$$a_6 = \begin{pmatrix}-7.73975u^{11}+2.25987u^{10}+\cdots-42.5094u-26.0381\\1.66140u^{11}-0.430541u^{10}+\cdots+8.06220u+6.53973\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}4.27986u^{11}-1.02645u^{10}+\cdots+17.2197u+16.8967\\0.631073u^{11}-0.239539u^{10}+\cdots+4.99808u+1.86449\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}4.27986u^{11}-1.02645u^{10}+\cdots+17.2197u+16.8967\\0.874490u^{11}-0.282949u^{10}+\cdots+5.85047u+2.89094\end{pmatrix}$$

$$a_2 = \begin{pmatrix}4.87432u^{11}-1.53943u^{10}+\cdots+31.4054u+15.7081\\-2.28293u^{11}+0.628514u^{10}+\cdots-11.6846u-8.27969\end{pmatrix}$$

$$a_1 = \begin{pmatrix}3.10484u^{11}-1.07242u^{10}+\cdots+22.5436u+8.96784\\-2.13788u^{11}+0.599560u^{10}+\cdots-11.1190u-7.81268\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-6.53973u^{11}+1.66140u^{10}+\cdots-29.8803u-24.6364\\-0.641879u^{11}+0.236936u^{10}+\cdots-4.78908u-1.44344\end{pmatrix}$$

$$a_9 = \begin{pmatrix}6.74026u^{11}-1.76948u^{10}+\cdots+33.1111u+24.8395\\0.200532u^{11}-0.108078u^{10}+\cdots+3.23080u+0.203091\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{16757967}{1643011}u^{11} - \frac{5020278}{1643011}u^{10} + \cdots + \frac{1299731}{23141}u + \frac{33667882}{1643011}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{12}	$u^{12} + 11u^{11} + \cdots + 22u + 1$
c_2, c_5, c_8 c_{11}	$u^{12} + u^{11} + \cdots - 2u - 1$
c_3, c_{10}	$u^{12} + u^{10} + \cdots - 5u + 1$
c_4, c_9	$u^{12} - 4u^{11} + \cdots + 3u + 1$
c_6, c_7	$u^{12} - u^{11} + \cdots + 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{12}	$y^{12} - 11y^{11} + \cdots - 154y + 1$
c_2, c_5, c_8 c_{11}	$y^{12} - 11y^{11} + \cdots - 22y + 1$
c_3, c_{10}	$y^{12} + 2y^{11} + \cdots - 31y + 1$
c_4, c_9	$y^{12} - 30y^{11} + \cdots + 45y + 1$
c_6, c_7	$y^{12} - 7y^{11} + \cdots - 14y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.141786 + 0.980425I$ $a = -0.933540 + 0.158952I$ $b = 0.041012 + 0.177252I$	$1.74171 - 4.08194I$	$-5.82114 + 7.56540I$
$u = 0.141786 - 0.980425I$ $a = -0.933540 - 0.158952I$ $b = 0.041012 - 0.177252I$	$1.74171 + 4.08194I$	$-5.82114 - 7.56540I$
$u = -0.442926 + 1.140420I$ $a = -0.476761 + 0.082105I$ $b = 1.037070 + 0.350813I$	$-1.35590 + 2.26651I$	$-17.0173 - 3.2135I$
$u = -0.442926 - 1.140420I$ $a = -0.476761 - 0.082105I$ $b = 1.037070 - 0.350813I$	$-1.35590 - 2.26651I$	$-17.0173 + 3.2135I$
$u = -1.29341$ $a = 1.70253$ $b = -1.58736$	-7.73551	-2.14220
$u = 0.362550$ $a = -0.697529$ $b = 0.433632$	-0.619674	-15.7990
$u = 1.68235$ $a = 1.15411$ $b = -1.86647$	-12.8318	-20.4330
$u = -0.277013 + 0.027736I$ $a = 2.61966 + 3.59517I$ $b = -1.132390 + 0.181685I$	$-1.88495 - 4.13308I$	$-16.9007 + 5.9544I$
$u = -0.277013 - 0.027736I$ $a = 2.61966 - 3.59517I$ $b = -1.132390 - 0.181685I$	$-1.88495 + 4.13308I$	$-16.9007 - 5.9544I$
$u = -1.90708$ $a = -0.231901$ $b = 3.31219$	-18.8402	-5.38040

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.15595 + 2.12191I$ $a = 0.827033 - 0.271266I$ $b = -2.09169 - 0.35807I$	$4.24091 - 10.44050I$	$-12.38352 + 4.77186I$
$u = 1.15595 - 2.12191I$ $a = 0.827033 + 0.271266I$ $b = -2.09169 + 0.35807I$	$4.24091 + 10.44050I$	$-12.38352 - 4.77186I$

II. $I^u_2 = \langle -u^5 - 2u^4 - u^3 - 5u^2 + 2b + 1,\ -u^5 + u^4 + 4u^3 - 2u^2 + 4a + 13u - 3,\ u^6 + 2u^5 + u^4 + 4u^3 - u^2 - 2u - 1 \rangle$

(i) Arc colorings

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

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

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

$$a_{10} = \begin{pmatrix} \frac{1}{4}u^5 - \frac{1}{4}u^4 + \cdots - \frac{13}{4}u + \frac{3}{4} \\ \frac{1}{2}u^5 + u^4 + \frac{1}{2}u^3 + \frac{5}{2}u^2 - \frac{1}{2} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -\frac{5}{4}u^5 - \frac{7}{4}u^4 + \cdots + \frac{19}{4}u + \frac{11}{4} \\ -\frac{1}{4}u^5 - \frac{3}{4}u^4 + \cdots - \frac{3}{4}u + \frac{1}{4} \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -\frac{3}{2}u^5 - \frac{5}{2}u^4 + \cdots + 4u + 3 \\ -\frac{1}{4}u^5 - \frac{3}{4}u^4 + \cdots - \frac{3}{4}u + \frac{1}{4} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} \frac{1}{4}u^5 + \frac{3}{4}u^4 + \cdots + \frac{5}{4}u - \frac{7}{4} \\ -\frac{1}{4}u^5 - \frac{3}{4}u^4 + \cdots - \frac{3}{4}u - \frac{3}{4} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} \frac{1}{4}u^5 + \frac{3}{4}u^4 + \cdots + \frac{5}{4}u - \frac{7}{4} \\ -\frac{1}{2}u^5 - u^4 - \frac{1}{2}u^3 - \frac{5}{2}u^2 - \frac{1}{2} \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 2u^5 + \frac{7}{2}u^4 + u^3 + 8u^2 - 3u - \frac{5}{2} \\ -\frac{1}{4}u^5 - \frac{3}{4}u^4 + \cdots - \frac{3}{4}u - \frac{3}{4} \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{7}{4}u^5 + \frac{13}{4}u^4 + \cdots - \frac{11}{4}u - \frac{15}{4} \\ -u^2 - u - 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} \frac{1}{4}u^5 + \frac{1}{4}u^4 + \cdots - \frac{7}{4}u - \frac{5}{4} \\ \frac{1}{2}u^4 + u^3 + u^2 + 2u + \frac{1}{2} \end{pmatrix}$$

$$a_9 = \begin{pmatrix} \frac{3}{4}u^5 + \frac{3}{4}u^4 + \cdots - \frac{13}{4}u + \frac{1}{4} \\ \frac{1}{2}u^5 + u^4 + \frac{1}{2}u^3 + \frac{5}{2}u^2 - \frac{1}{2} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= u^5 + \frac{3}{2}u^4 + 4u^2 - 2u - \frac{25}{2}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^6 - 5u^5 + 10u^4 - 13u^3 + 14u^2 - 9u + 1$
c_2, c_8	$u^6 + u^5 - 2u^4 - 3u^3 + 3u + 1$
c_3	$u^6 + 2u^5 + u^4 + 4u^3 - u^2 - 2u - 1$
c_4	$(u^3 - u^2 - u - 1)^2$
c_5, c_{11}	$u^6 - u^5 - 2u^4 + 3u^3 - 3u + 1$
c_6	$u^6 + u^5 - 2u^4 - 5u^3 - 8u^2 - 5u - 1$
c_7	$u^6 - u^5 - 2u^4 + 5u^3 - 8u^2 + 5u - 1$
c_9	$(u^3 + u^2 - u + 1)^2$
c_{10}	$u^6 - 2u^5 + u^4 - 4u^3 - u^2 + 2u - 1$
c_{12}	$u^6 + 5u^5 + 10u^4 + 13u^3 + 14u^2 + 9u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{12}	$y^6 - 5y^5 - 2y^4 + 23y^3 - 18y^2 - 53y + 1$
c_2, c_5, c_8 c_{11}	$y^6 - 5y^5 + 10y^4 - 13y^3 + 14y^2 - 9y + 1$
c_3, c_{10}	$y^6 - 2y^5 - 17y^4 - 12y^3 + 15y^2 - 2y + 1$
c_4, c_9	$(y^3 - 3y^2 - y - 1)^2$
c_6, c_7	$y^6 - 5y^5 - 2y^4 + 15y^3 + 18y^2 - 9y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.788614$ $a = -2.01293$ $b = 1.83929$	-11.8065	-10.7040
$u = 0.15540 + 1.44647I$ $a = -0.005444 + 0.311582I$ $b = -0.419643 + 0.606291I$	$0.96847 - 3.17729I$	$-11.64780 + 1.72143I$
$u = 0.15540 - 1.44647I$ $a = -0.005444 - 0.311582I$ $b = -0.419643 - 0.606291I$	$0.96847 + 3.17729I$	$-11.64780 - 1.72143I$
$u = -0.383557 + 0.331324I$ $a = 1.96878 - 1.31241I$ $b = -0.419643 - 0.606291I$	$0.96847 + 3.17729I$	$-11.64780 - 1.72143I$
$u = -0.383557 - 0.331324I$ $a = 1.96878 + 1.31241I$ $b = -0.419643 + 0.606291I$	$0.96847 - 3.17729I$	$-11.64780 + 1.72143I$
$u = -2.33230$ $a = -0.913737$ $b = 1.83929$	-11.8065	-10.7040

III. $\boldsymbol{I_3^u = \langle u^2 + b,\ -u^2 + a + u + 1,\ u^3 - u^2 - 2u + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -5u^2 + 6u - 19$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^3 - 6u^2 + 5u - 1$
c_2, c_6, c_8	$u^3 + 2u^2 - u - 1$
c_3	$u^3 - u^2 - 2u + 1$
c_4	$u^3 + 5u^2 + 6u + 1$
c_5, c_7, c_{11}	$u^3 - 2u^2 - u + 1$
c_9	$u^3 - 5u^2 + 6u - 1$
c_{10}	$u^3 + u^2 - 2u - 1$
c_{12}	$u^3 + 6u^2 + 5u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{12}	$y^3 - 26y^2 + 13y - 1$
c_2, c_5, c_6 c_7, c_8, c_{11}	$y^3 - 6y^2 + 5y - 1$
c_3, c_{10}	$y^3 - 5y^2 + 6y - 1$
c_4, c_9	$y^3 - 13y^2 + 26y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.24698$ $a = 1.80194$ $b = -1.55496$	-7.98968	-34.2570
$u = 0.445042$ $a = -1.24698$ $b = -0.198062$	-2.34991	-17.3200
$u = 1.80194$ $a = 0.445042$ $b = -3.24698$	-19.2692	-24.4230

IV.

$$I^u_4 = \langle u^3+u^2+6b+3u+1,\ -2u^3-23u^2+138a+30u-77,\ u^4+8u^2+4u+23\rangle$$

(i) Arc colorings

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

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

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

$$a_{10} = \begin{pmatrix} \frac{1}{69}u^3 + \frac{1}{6}u^2 - \frac{5}{23}u + \frac{77}{138} \\ -\frac{1}{6}u^3 - \frac{1}{6}u^2 - \frac{1}{2}u - \frac{1}{6} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.0507246u^3 + 0.333333u^2 + 0.239130u + 2.20290 \\ -\frac{1}{2}u^2 - \frac{5}{2} \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.0507246u^3 - 0.166667u^2 + 0.239130u - 0.297101 \\ -\frac{1}{2}u^2 - \frac{5}{2} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{3}{46}u^3 - \frac{1}{46}u - \frac{6}{23} \\ -\frac{2}{3}u^3 - \frac{1}{6}u^2 - 2u - \frac{7}{6} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -\frac{3}{46}u^3 - \frac{1}{46}u - \frac{6}{23} \\ -\frac{1}{6}u^3 - \frac{1}{6}u^2 - \frac{1}{2}u - \frac{7}{6} \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{1}{23}u^3 + \frac{8}{23}u + \frac{4}{23} \\ -\frac{1}{2}u^2 - \frac{1}{2} \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{1}{23}u^3 - \frac{1}{2}u^2 - \frac{15}{23}u - \frac{15}{46} \\ u^3 - 4u^2 - 2u - 12 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} \frac{5}{46}u^3 + \frac{17}{46}u + \frac{10}{23} \\ -\frac{1}{3}u^3 - \frac{1}{3}u^2 - u + \frac{2}{3} \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -\frac{7}{46}u^3 - \frac{33}{46}u + \frac{9}{23} \\ -\frac{1}{6}u^3 - \frac{1}{6}u^2 - \frac{1}{2}u - \frac{1}{6} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{12}	$u^4 - 6u^3 + 31u^2 - 66u + 49$
c_2, c_5, c_8 c_{11}	$u^4 + 2u^3 + 5u^2 + 2u + 7$
c_3, c_{10}	$u^4 + 8u^2 - 4u + 23$
c_4, c_9	$(u^2 + 2u - 1)^2$
c_6, c_7	$u^4 - 2u^3 + 5u^2 - 6u + 9$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{12}	$y^4 + 26y^3 + 267y^2 - 1318y + 2401$
c_2, c_5, c_8 c_{11}	$y^4 + 6y^3 + 31y^2 + 66y + 49$
c_3, c_{10}	$y^4 + 16y^3 + 110y^2 + 352y + 529$
c_4, c_9	$(y^2 - 6y + 1)^2$
c_6, c_7	$y^4 + 6y^3 + 19y^2 + 54y + 81$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.70711 + 1.75664I$ $a = \ \ 0.370470 - 0.836294I$ $b = -0.414214$	4.93480	−10.0000
$u = -0.70711 - 1.75664I$ $a = \ \ 0.370470 + 0.836294I$ $b = -0.414214$	4.93480	−10.0000
$u = \ \ 0.70711 + 2.43192I$ $a = -0.674818 - 0.111049I$ $b = \ \ 2.41421$	4.93480	−10.0000
$u = \ \ 0.70711 - 2.43192I$ $a = -0.674818 + 0.111049I$ $b = \ \ 2.41421$	4.93480	−10.0000

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

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 1.00000$ $a = -0.500000 + 0.866025I$ $b = \quad 1.00000$	0	-12.0000
$u = \quad 1.00000$ $a = -0.500000 - 0.866025I$ $b = \quad 1.00000$	0	-12.0000

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^2-u+1)(u^3-6u^2+5u-1)(u^4-6u^3+31u^2-66u+49)$ $\cdot(u^6-5u^5+\cdots-9u+1)(u^{12}+11u^{11}+\cdots+22u+1)$
c_2, c_8	$(u^2+u+1)(u^3+2u^2-u-1)(u^4+2u^3+5u^2+2u+7)$ $\cdot(u^6+u^5-2u^4-3u^3+3u+1)(u^{12}+u^{11}+\cdots-2u-1)$
c_3	$(u+1)^2(u^3-u^2-2u+1)(u^4+8u^2-4u+23)$ $\cdot(u^6+2u^5+u^4+4u^3-u^2-2u-1)(u^{12}+u^{10}+\cdots-5u+1)$
c_4	$(u+1)^2(u^2+2u-1)^2(u^3-u^2-u-1)^2(u^3+5u^2+6u+1)$ $\cdot(u^{12}-4u^{11}+\cdots+3u+1)$
c_5, c_{11}	$(u^2+u+1)(u^3-2u^2-u+1)(u^4+2u^3+5u^2+2u+7)$ $\cdot(u^6-u^5-2u^4+3u^3-3u+1)(u^{12}+u^{11}+\cdots-2u-1)$
c_6	$(u^2+u+1)(u^3+2u^2-u-1)(u^4-2u^3+5u^2-6u+9)$ $\cdot(u^6+u^5-2u^4-5u^3-8u^2-5u-1)(u^{12}-u^{11}+\cdots+2u+1)$
c_7	$(u^2+u+1)(u^3-2u^2-u+1)(u^4-2u^3+5u^2-6u+9)$ $\cdot(u^6-u^5-2u^4+5u^3-8u^2+5u-1)(u^{12}-u^{11}+\cdots+2u+1)$
c_9	$(u+1)^2(u^2+2u-1)^2(u^3-5u^2+6u-1)(u^3+u^2-u+1)^2$ $\cdot(u^{12}-4u^{11}+\cdots+3u+1)$
c_{10}	$(u+1)^2(u^3+u^2-2u-1)(u^4+8u^2-4u+23)$ $\cdot(u^6-2u^5+u^4-4u^3-u^2+2u-1)(u^{12}+u^{10}+\cdots-5u+1)$
c_{12}	$(u^2-u+1)(u^3+6u^2+5u+1)(u^4-6u^3+31u^2-66u+49)$ $\cdot(u^6+5u^5+\cdots+9u+1)(u^{12}+11u^{11}+\cdots+22u+1)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_{12}	$(y^2+y+1)(y^3-26y^2+13y-1)(y^4+26y^3+\cdots-1318y+2401)$ $\cdot\,(y^6-5y^5+\cdots-53y+1)(y^{12}-11y^{11}+\cdots-154y+1)$
c_2, c_5, c_8 c_{11}	$(y^2+y+1)(y^3-6y^2+5y-1)(y^4+6y^3+31y^2+66y+49)$ $\cdot\,(y^6-5y^5+\cdots-9y+1)(y^{12}-11y^{11}+\cdots-22y+1)$
c_3, c_{10}	$(y-1)^2(y^3-5y^2+6y-1)(y^4+16y^3+110y^2+352y+529)$ $\cdot\,(y^6-2y^5+\cdots-2y+1)(y^{12}+2y^{11}+\cdots-31y+1)$
c_4, c_9	$(y-1)^2(y^2-6y+1)^2(y^3-13y^2+26y-1)(y^3-3y^2-y-1)^2$ $\cdot\,(y^{12}-30y^{11}+\cdots+45y+1)$
c_6, c_7	$(y^2+y+1)(y^3-6y^2+5y-1)(y^4+6y^3+19y^2+54y+81)$ $\cdot\,(y^6-5y^5+\cdots-9y+1)(y^{12}-7y^{11}+\cdots-14y+1)$