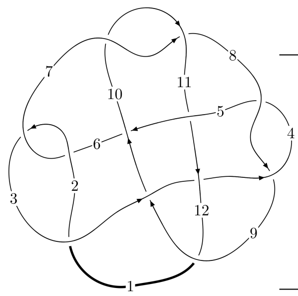
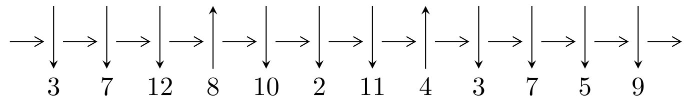
$12n_{0603}$ ($K12n_{0603}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$
\begin{aligned}
I_1^u &= \langle 478u^{12} + 178u^{11} + \cdots + 122b - 1078,\ a - 1,\\
&\quad u^{13} + 8u^{11} + 3u^{10} + 25u^9 + 18u^8 + 32u^7 + 33u^6 + 10u^5 + 14u^4 - u^3 - 10u^2 + 1\rangle\\
I_2^u &= \langle 2u^9 + 7u^7 + 4u^6 + 7u^5 + 10u^4 - 6u^3 + 7u^2 + 2b - 8u + 2,\ a + 1,\\
&\quad u^{10} + 4u^8 + 2u^7 + 5u^6 + 6u^5 - 2u^4 + 6u^3 - 6u^2 + 2u - 1\rangle\\
I_3^u &= \langle u^5 - 3u^4 + 7u^3 - 16u^2 + 9b + 8u - 10,\ -19u^5 + 39u^4 - 79u^3 + 178u^2 + 9a - 35u + 226,\\
&\quad u^6 - 2u^5 + 4u^4 - 9u^3 + u^2 - 11u - 1\rangle\\
I_4^u &= \langle b,\ a - u,\ u^2 - u + 1\rangle
\end{aligned}
$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 31 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.

$$I_1^u = \langle 478u^{12} + 178u^{11} + \cdots + 122b - 1078,\ a - 1,\ u^{13} + 8u^{11} + \cdots - 10u^2 + 1\rangle$$

(i) Arc colorings

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

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

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

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

$$a_{12} = \begin{pmatrix} 1 \\ -3.91803u^{12} - 1.45902u^{11} + \cdots + 23.6721u + 8.83607 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.729508u^{12} + 0.114754u^{11} + \cdots - 3.91803u - 0.459016 \\ -3.18852u^{12} - 1.34426u^{11} + \cdots + 19.7541u + 7.37705 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 3.91803u^{12} + 1.45902u^{11} + \cdots - 23.6721u - 7.83607 \\ -2.60656u^{12} - 0.803279u^{11} + \cdots + 16.9262u + 6.21311 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -3.91803u^{12} - 1.45902u^{11} + \cdots + 23.6721u + 9.83607 \\ -3.18852u^{12} - 1.34426u^{11} + \cdots + 19.7541u + 7.37705 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -2.34426u^{12} - 1.17213u^{11} + \cdots + 15.3770u + 6.68852 \\ -0.549180u^{12} - 0.0245902u^{11} + \cdots + 4.19672u + 1.59836 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 6.62295u^{12} + 2.81148u^{11} + \cdots - 40.4918u - 14.7459 \\ -1.68852u^{12} + 0.155738u^{11} + \cdots + 12.2541u + 4.37705 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 5.24590u^{12} + 1.12295u^{11} + \cdots - 29.9836u - 12.9918 \\ -0.655738u^{12} - 2.32787u^{11} + \cdots + 3.62295u + 0.311475 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -3.07377u^{12} - 1.28689u^{11} + \cdots + 20.2951u + 9.14754 \\ -3.12295u^{12} - 0.811475u^{11} + \cdots + 19.9918u + 7.74590 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{125}{122}u^{12} + \frac{215}{122}u^{11} + \frac{1077}{122}u^{10} + \frac{1082}{61}u^9 + \frac{4329}{122}u^8 + \frac{4205}{61}u^7 + \frac{4804}{61}u^6 + \frac{6996}{61}u^5 + \frac{11113}{122}u^4 + \frac{8069}{122}u^3 + \frac{2702}{61}u^2 - \frac{6}{61}u - \frac{979}{61}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{13} + 32u^{12} + \cdots + 33u + 1$
c_2, c_6	$u^{13} - 2u^{12} + \cdots - 5u + 1$
c_3	$u^{13} - 8u^{12} + \cdots - 9u + 2$
c_4, c_8	$u^{13} + 8u^{11} + \cdots - 10u^2 + 1$
c_5	$u^{13} - 25u^{12} + \cdots + 9173u + 2591$
c_7, c_{10}	$u^{13} + 8u^{12} + \cdots + 27u + 4$
c_9	$u^{13} - 18u^{11} + \cdots + 738u + 244$
c_{11}	$u^{13} + 8u^{12} + \cdots + 20u + 4$
c_{12}	$u^{13} + u^{12} + \cdots + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{13} - 308y^{12} + \cdots + 249y - 1$
c_2, c_6	$y^{13} - 32y^{12} + \cdots + 33y - 1$
c_3	$y^{13} + 24y^{11} + \cdots + 25y - 4$
c_4, c_8	$y^{13} + 16y^{12} + \cdots + 20y - 1$
c_5	$y^{13} - 137y^{12} + \cdots + 11823937y - 6713281$
c_7, c_{10}	$y^{13} - 28y^{12} + \cdots + 345y - 16$
c_9	$y^{13} - 36y^{12} + \cdots - 302036y - 59536$
c_{11}	$y^{13} + 2y^{12} + \cdots + 120y - 16$
c_{12}	$y^{13} - 25y^{12} + \cdots - 7y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.231299 + 1.092720I$ $a = 1.00000$ $b = 0.502972 - 0.016598I$	$-0.96921 + 1.60705I$	$-6.76099 - 3.52286I$
$u = 0.231299 - 1.092720I$ $a = 1.00000$ $b = 0.502972 + 0.016598I$	$-0.96921 - 1.60705I$	$-6.76099 + 3.52286I$
$u = -0.755051 + 0.130841I$ $a = 1.00000$ $b = 0.012282 + 0.611071I$	$-1.91994 - 0.62113I$	$-7.84819 + 2.13633I$
$u = -0.755051 - 0.130841I$ $a = 1.00000$ $b = 0.012282 - 0.611071I$	$-1.91994 + 0.62113I$	$-7.84819 - 2.13633I$
$u = -0.06382 + 1.54550I$ $a = 1.00000$ $b = 1.25006 + 1.58656I$	$15.3034 - 0.5963I$	$-12.36984 + 0.02697I$
$u = -0.06382 - 1.54550I$ $a = 1.00000$ $b = 1.25006 - 1.58656I$	$15.3034 + 0.5963I$	$-12.36984 - 0.02697I$
$u = 0.404295 + 0.009197I$ $a = 1.00000$ $b = -0.308660 - 1.174280I$	$2.44055 - 2.02483I$	$-0.337255 + 1.060894I$
$u = 0.404295 - 0.009197I$ $a = 1.00000$ $b = -0.308660 + 1.174280I$	$2.44055 + 2.02483I$	$-0.337255 - 1.060894I$
$u = -0.31241 + 1.60855I$ $a = 1.00000$ $b = 1.354220 - 0.086669I$	$-8.31754 - 4.12811I$	$-12.63192 + 2.04182I$
$u = -0.31241 - 1.60855I$ $a = 1.00000$ $b = 1.354220 + 0.086669I$	$-8.31754 + 4.12811I$	$-12.63192 - 2.04182I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.354088$ $a = \quad 1.00000$ $b = -0.507588$	-0.805953	-12.4890
$u = \quad 0.67274 + 1.79353I$ $a = \quad 1.00000$ $b = \quad 1.44292 - 1.29558I$	$14.4274 + 9.8229I$	$-12.30738 - 3.83207I$
$u = \quad 0.67274 - 1.79353I$ $a = \quad 1.00000$ $b = \quad 1.44292 + 1.29558I$	$14.4274 - 9.8229I$	$-12.30738 + 3.83207I$

II. $\boldsymbol{I_2^u = \langle 2u^9 + 7u^7 + \cdots + 2b + 2,\ a + 1,\ u^{10} + 4u^8 + \cdots + 2u - 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{5}{2}u^9 - \frac{1}{2}u^8 + \frac{19}{2}u^7 + \frac{7}{2}u^6 + 9u^5 + \frac{27}{2}u^4 - \frac{21}{2}u^3 + 12u^2 - 16u - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{10}-12u^9+38u^8-81u^7+109u^6-102u^5+62u^4-18u^3-u+1$
c_2	$u^{10}-2u^9-4u^8+3u^7+5u^6-6u^5-4u^4+4u^3-u+1$
c_3	$u^{10}+5u^9+\cdots-15u-3$
c_4	$u^{10}+4u^8+2u^7+5u^6+6u^5-2u^4+6u^3-6u^2+2u-1$
c_5	$u^{10}-3u^9-10u^8-6u^7-8u^6-18u^5+7u^3+8u^2+3u+1$
c_6	$u^{10}+2u^9-4u^8-3u^7+5u^6+6u^5-4u^4-4u^3+u+1$
c_7	$u^{10}+5u^9+6u^8-5u^7-10u^6+2u^5-6u^3+6u^2+3u-5$
c_8	$u^{10}+4u^8-2u^7+5u^6-6u^5-2u^4-6u^3-6u^2-2u-1$
c_9	$u^{10}-5u^9+5u^8+u^7-9u^6+6u^5-3u^4-7u^3+3u^2-1$
c_{10}	$u^{10}-5u^9+6u^8+5u^7-10u^6-2u^5+6u^3+6u^2-3u-5$
c_{11}	$u^{10}+3u^9+6u^8+6u^7+4u^6-2u^5-5u^4-7u^3+2u+1$
c_{12}	$u^{10}-u^9-6u^8+3u^7+11u^6-9u^5-11u^4+5u^3+2u^2-3u-1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{10} - 68y^9 + \cdots - y + 1$
c_2, c_6	$y^{10} - 12y^9 + 38y^8 - 81y^7 + 109y^6 - 102y^5 + 62y^4 - 18y^3 - y + 1$
c_3	$y^{10} + 3y^9 + 4y^8 + 3y^7 + 9y^6 + 15y^5 + 9y^4 - y^3 + 16y^2 - 57y + 9$
c_4, c_8	$y^{10} + 8y^9 + \cdots + 8y + 1$
c_5	$y^{10} - 29y^9 + \cdots + 7y + 1$
c_7, c_{10}	$y^{10} - 13y^9 + \cdots - 69y + 25$
c_9	$y^{10} - 15y^9 + \cdots - 6y + 1$
c_{11}	$y^{10} + 3y^9 + 8y^8 + 14y^7 + 22y^6 + 30y^5 - 15y^4 - 33y^3 + 18y^2 - 4y + 1$
c_{12}	$y^{10} - 13y^9 + \cdots - 13y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.009496 + 1.155230I$ $a = -1.00000$ $b = -0.572116 - 1.276800I$	$-5.38125 + 0.86206I$	$-11.68799 - 0.71640I$
$u = 0.009496 - 1.155230I$ $a = -1.00000$ $b = -0.572116 + 1.276800I$	$-5.38125 - 0.86206I$	$-11.68799 + 0.71640I$
$u = -1.28347$ $a = -1.00000$ $b = 0.970806$	-17.3343	-8.37670
$u = -0.335045 + 1.275960I$ $a = -1.00000$ $b = -1.122050 - 0.534600I$	$-2.32585 - 2.89091I$	$-9.34725 + 3.73381I$
$u = -0.335045 - 1.275960I$ $a = -1.00000$ $b = -1.122050 + 0.534600I$	$-2.32585 + 2.89091I$	$-9.34725 - 3.73381I$
$u = 0.612033$ $a = -1.00000$ $b = -0.407032$	-3.00050	-14.5280
$u = 0.116511 + 0.447058I$ $a = -1.00000$ $b = -0.261046 + 1.360630I$	$1.90106 + 2.27397I$	$-12.92039 - 5.58214I$
$u = 0.116511 - 0.447058I$ $a = -1.00000$ $b = -0.261046 - 1.360630I$	$1.90106 - 2.27397I$	$-12.92039 + 5.58214I$
$u = 0.54476 + 1.50703I$ $a = -1.00000$ $b = -0.826677 + 0.790310I$	$-7.05562 + 6.53270I$	$-11.09214 - 5.33385I$
$u = 0.54476 - 1.50703I$ $a = -1.00000$ $b = -0.826677 - 0.790310I$	$-7.05562 - 6.53270I$	$-11.09214 + 5.33385I$

III. $\boldsymbol{I_3^u = \langle u^5 - 3u^4 + 7u^3 - 16u^2 + 9b + 8u - 10,\ -19u^5 + 39u^4 + \cdots + 9a + 226,\ u^6 - 2u^5 + 4u^4 - 9u^3 + u^2 - 11u - 1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} \frac{19}{9}u^5 - \frac{13}{3}u^4 + \cdots + \frac{35}{9}u - \frac{226}{9} \\ -\frac{1}{9}u^5 + \frac{1}{3}u^4 + \cdots - \frac{8}{9}u + \frac{10}{9} \end{pmatrix}$$
$$a_1 = \begin{pmatrix} \frac{7}{3}u^5 - 5u^4 + \cdots + \frac{11}{3}u - \frac{76}{3} \\ \frac{1}{9}u^5 - \frac{1}{3}u^4 + \cdots - \frac{10}{9}u + \frac{8}{9} \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -\frac{25}{9}u^5 + 6u^4 + \cdots - \frac{56}{9}u + \frac{280}{9} \\ \frac{2}{9}u^5 - \frac{1}{3}u^4 + \cdots - \frac{11}{9}u - \frac{14}{9} \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} \frac{19}{9}u^5 - \frac{13}{3}u^4 + \cdots + \frac{35}{9}u - \frac{217}{9} \\ -\frac{1}{9}u^5 + \frac{1}{3}u^4 + \cdots - \frac{8}{9}u + \frac{10}{9} \end{pmatrix}$$
$$a_7 = \begin{pmatrix} \frac{43}{9}u^5 - 10u^4 + \cdots + \frac{83}{9}u - \frac{478}{9} \\ -\frac{2}{9}u^5 + \frac{1}{3}u^4 + \cdots + \frac{2}{9}u + \frac{23}{9} \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -\frac{43}{3}u^5 + \frac{91}{3}u^4 + \cdots - \frac{83}{3}u + 161 \\ \frac{8}{9}u^5 - \frac{5}{3}u^4 + \cdots - \frac{26}{9}u - \frac{71}{9} \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -30.7778u^5 + 63.6667u^4 + \cdots - 57.2222u + 340.444 \\ 2u^5 - \frac{11}{3}u^4 + \cdots + 9u - \frac{46}{3} \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -8.44444u^5 + 17.6667u^4 + \cdots - 15.5556u + 93.1111 \\ \frac{4}{9}u^5 - \frac{1}{3}u^4 + \cdots - \frac{4}{9}u - \frac{40}{9} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{1}{9}u^5 + \frac{5}{9}u^3 - \frac{8}{9}u^2 + \frac{19}{9}u - \frac{149}{9}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^6+23u^5+149u^4+597u^3+2195u^2+1982u+529$
c_2, c_6	$u^6+3u^5-7u^4-19u^3-7u^2+48u-23$
c_3	$(u^3+u^2-u-2)^2$
c_4, c_8	$u^6-2u^5+4u^4-9u^3+u^2-11u-1$
c_5	$u^6+6u^5-36u^4-47u^3+329u^2-331u+101$
c_7, c_{10}	$(u^3-2u^2-1)^2$
c_9	$u^6-5u^5-9u^4+42u^3-53u^2-165u-83$
c_{11}	$(u-1)^6$
c_{12}	$u^6-8u^4+3u^3+9u^2-u-17$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^6 - 231y^5 + \cdots - 1606014y + 279841$
c_2, c_6	$y^6 - 23y^5 + 149y^4 - 597y^3 + 2195y^2 - 1982y + 529$
c_3	$(y^3 - 3y^2 + 5y - 4)^2$
c_4, c_8	$y^6 + 4y^5 - 18y^4 - 119y^3 - 205y^2 - 123y + 1$
c_5	$y^6 - 108y^5 + 2518y^4 - 21723y^3 + 69855y^2 - 43103y + 10201$
c_7, c_{10}	$(y^3 - 4y^2 - 4y - 1)^2$
c_9	$y^6 - 43y^5 + 395y^4 - 2626y^3 + 18163y^2 - 18427y + 6889$
c_{11}	$(y - 1)^6$
c_{12}	$y^6 - 16y^5 + 82y^4 - 187y^3 + 359y^2 - 307y + 289$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.261577+1.168950I$ $a=-1.52339+0.20505I$ $b=-1.102790-0.665457I$	$-3.89790-2.56897I$	$-15.1239+2.1332I$
$u=-0.261577-1.168950I$ $a=-1.52339-0.20505I$ $b=-1.102790+0.665457I$	$-3.89790+2.56897I$	$-15.1239-2.1332I$
$u=\ \ 0.15879+1.83440I$ $a=-0.644748+0.086783I$ $b=-1.102790+0.665457I$	$-3.89790+2.56897I$	$-15.1239-2.1332I$
$u=\ \ 0.15879-1.83440I$ $a=-0.644748-0.086783I$ $b=-1.102790-0.665457I$	$-3.89790-2.56897I$	$-15.1239+2.1332I$
$u=-0.0895674$ $a=-25.6247$ $b=\ \ 1.20557$	-18.5231	-16.7520
$u=\ \ 2.29514$ $a=-0.0390249$ $b=\ \ 1.20557$	-18.5231	-16.7520

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

(i) Arc colorings

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

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

$$a_5 = \begin{pmatrix} 1 \\ -u+1 \end{pmatrix}$$

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

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

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

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u-1 \\ u-1 \end{pmatrix}$$

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

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

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -15$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

	Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$0.500000 + 0.866025I$		
$a =$	$0.500000 + 0.866025I$	-3.28987	-15.0000
$b =$	0		
$u =$	$0.500000 - 0.866025I$		
$a =$	$0.500000 - 0.866025I$	-3.28987	-15.0000
$b =$	0		

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^2(u^6+23u^5+149u^4+597u^3+2195u^2+1982u+529)$ $\cdot(u^{10}-12u^9+38u^8-81u^7+109u^6-102u^5+62u^4-18u^3-u+1)$ $\cdot(u^{13}+32u^{12}+\cdots+33u+1)$
c_2	$(u-1)^2(u^6+3u^5-7u^4-19u^3-7u^2+48u-23)$ $\cdot(u^{10}-2u^9-4u^8+3u^7+5u^6-6u^5-4u^4+4u^3-u+1)$ $\cdot(u^{13}-2u^{12}+\cdots-5u+1)$
c_3	$u^2(u^3+u^2-u-2)^2(u^{10}+5u^9+\cdots-15u-3)$ $\cdot(u^{13}-8u^{12}+\cdots-9u+2)$
c_4	$(u^2-u+1)(u^6-2u^5+4u^4-9u^3+u^2-11u-1)$ $\cdot(u^{10}+4u^8+2u^7+5u^6+6u^5-2u^4+6u^3-6u^2+2u-1)$ $\cdot(u^{13}+8u^{11}+\cdots-10u^2+1)$
c_5	$(u^2-u+1)(u^6+6u^5-36u^4-47u^3+329u^2-331u+101)$ $\cdot(u^{10}-3u^9-10u^8-6u^7-8u^6-18u^5+7u^3+8u^2+3u+1)$ $\cdot(u^{13}-25u^{12}+\cdots+9173u+2591)$
c_6	$(u+1)^2(u^6+3u^5-7u^4-19u^3-7u^2+48u-23)$ $\cdot(u^{10}+2u^9-4u^8-3u^7+5u^6+6u^5-4u^4-4u^3+u+1)$ $\cdot(u^{13}-2u^{12}+\cdots-5u+1)$
c_7	$(u-1)^2(u^3-2u^2-1)^2$ $\cdot(u^{10}+5u^9+6u^8-5u^7-10u^6+2u^5-6u^3+6u^2+3u-5)$ $\cdot(u^{13}+8u^{12}+\cdots+27u+4)$
c_8	$(u^2+u+1)(u^6-2u^5+4u^4-9u^3+u^2-11u-1)$ $\cdot(u^{10}+4u^8-2u^7+5u^6-6u^5-2u^4-6u^3-6u^2-2u-1)$ $\cdot(u^{13}+8u^{11}+\cdots-10u^2+1)$
c_9	$(u^2+u+1)(u^6-5u^5-9u^4+42u^3-53u^2-165u-83)$ $\cdot(u^{10}-5u^9+5u^8+u^7-9u^6+6u^5-3u^4-7u^3+3u^2-1)$ $\cdot(u^{13}-18u^{11}+\cdots+738u+244)$
c_{10}	$(u+1)^2(u^3-2u^2-1)^2$ $\cdot(u^{10}-5u^9+6u^8+5u^7-10u^6-2u^5+6u^3+6u^2-3u-5)$ $\cdot(u^{13}+8u^{12}+\cdots+27u+4)$
c_{11}	$(u-1)^8(u^{10}+3u^9+62u^8+6u^7+4u^6-2u^5-5u^4-7u^3+2u+1)$ $\cdot(u^{13}+8u^{12}+\cdots+20u+4)$
c_{12}	$(u^2+u+1)(u^6-8u^4+3u^3+9u^2-u-17)$ $\cdot(u^{10}-u^9-6u^8+3u^7+11u^6-9u^5-11u^4+5u^3+2u^2-3u-1)$ $\cdot(u^{13}+u^{12}+\cdots+u+1)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^2)(y^6 - 231y^5 + \cdots - 1606014y + 279841)$ $\cdot (y^{10} - 68y^9 + \cdots - y + 1)(y^{13} - 308y^{12} + \cdots + 249y - 1)$
c_2, c_6	$(y-1)^2(y^6 - 23y^5 + 149y^4 - 597y^3 + 2195y^2 - 1982y + 529)$ $\cdot (y^{10} - 12y^9 + 38y^8 - 81y^7 + 109y^6 - 102y^5 + 62y^4 - 18y^3 - y + 1)$ $\cdot (y^{13} - 32y^{12} + \cdots + 33y - 1)$
c_3	$y^2(y^3 - 3y^2 + 5y - 4)^2$ $\cdot (y^{10} + 3y^9 + 4y^8 + 3y^7 + 9y^6 + 15y^5 + 9y^4 - y^3 + 16y^2 - 57y + 9)$ $\cdot (y^{13} + 24y^{11} + \cdots + 25y - 4)$
c_4, c_8	$(y^2 + y + 1)(y^6 + 4y^5 - 18y^4 - 119y^3 - 205y^2 - 123y + 1)$ $\cdot (y^{10} + 8y^9 + \cdots + 8y + 1)(y^{13} + 16y^{12} + \cdots + 20y - 1)$
c_5	$(y^2 + y + 1)$ $\cdot (y^6 - 108y^5 + 2518y^4 - 21723y^3 + 69855y^2 - 43103y + 10201)$ $\cdot (y^{10} - 29y^9 + \cdots + 7y + 1)$ $\cdot (y^{13} - 137y^{12} + \cdots + 11823937y - 6713281)$
c_7, c_{10}	$((y-1)^2)(y^3 - 4y^2 - 4y - 1)^2(y^{10} - 13y^9 + \cdots - 69y + 25)$ $\cdot (y^{13} - 28y^{12} + \cdots + 345y - 16)$
c_9	$(y^2 + y + 1)(y^6 - 43y^5 + \cdots - 18427y + 6889)$ $\cdot (y^{10} - 15y^9 + \cdots - 6y + 1)(y^{13} - 36y^{12} + \cdots - 302036y - 59536)$
c_{11}	$(y-1)^8$ $\cdot (y^{10} + 3y^9 + 8y^8 + 14y^7 + 22y^6 + 30y^5 - 15y^4 - 33y^3 + 18y^2 - 4y + 1)$ $\cdot (y^{13} + 2y^{12} + \cdots + 120y - 16)$
c_{12}	$(y^2 + y + 1)(y^6 - 16y^5 + 82y^4 - 187y^3 + 359y^2 - 307y + 289)$ $\cdot (y^{10} - 13y^9 + \cdots - 13y + 1)(y^{13} - 25y^{12} + \cdots - 7y - 1)$