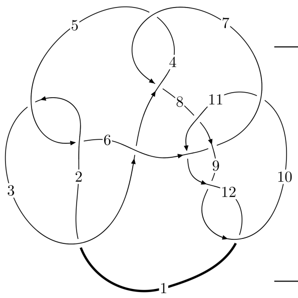
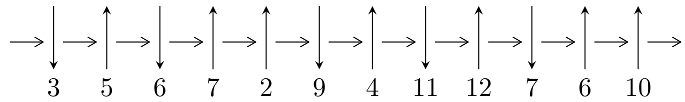
$12n_{0034}$ ($K12n_{0034}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 1.80347 \times 10^{133} u^{37} - 4.04668 \times 10^{133} u^{36} + \cdots + 1.44050 \times 10^{137} b + 7.58135 \times 10^{136}, \\
& 2.78701 \times 10^{134} u^{37} - 5.34254 \times 10^{134} u^{36} + \cdots + 2.01671 \times 10^{138} a + 5.65465 \times 10^{138}, \\
& u^{38} - 2u^{37} + \cdots + 12288u + 4096 \rangle \\
I_2^u = \langle & u^3 - u^2 + b + 2u,\ -u^2 + a + u - 1,\ u^4 + u^2 + u + 1 \rangle \\
I_3^u = \langle & 3u^5 - u^4 + 5u^3 - 3u^2 + b + 4u - 4,\ 2u^5 + 3u^3 - u^2 + a + 2u - 2,\ u^6 - u^5 + 2u^4 - 2u^3 + 2u^2 - 2u + 1 \rangle
\end{aligned}$$

$$\begin{aligned}
I_1^v = \langle & a,\ -963772v^{11} + 658631v^{10} + \cdots + 707733b + 3141326, \\
& v^{12} - v^{11} - 4v^{10} - 5v^9 + 19v^8 + 9v^7 - 31v^6 + 29v^5 + 31v^4 - 18v^3 + 3v^2 - 3v + 1 \rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 60 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. $\boldsymbol{I_1^u = \langle 1.80 \times 10^{133}u^{37} - 4.05 \times 10^{133}u^{36} + \cdots + 1.44 \times 10^{137}b + 7.58 \times 10^{136},\ 2.79 \times 10^{134}u^{37} - 5.34 \times 10^{134}u^{36} + \cdots + 2.02 \times 10^{138}a + 5.65 \times 10^{138},\ u^{38} - 2u^{37} + \cdots + 12288u + 4096\rangle}$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.000138196u^{37} + 0.000264914u^{36} + \cdots + 2.22627u - 2.80391 \\ -0.000125197u^{37} + 0.000280921u^{36} + \cdots + 3.09647u - 0.526298 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.0000643751u^{37} + 0.000175800u^{36} + \cdots - 4.14636u + 0.169342 \\ 0.0000210320u^{37} - 0.0000415391u^{36} + \cdots - 0.351856u - 0.288364 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.0000103293u^{37} + 5.50817 \times 10^{-6}u^{36} + \cdots + 0.765170u + 1.22937 \\ -0.0000463037u^{37} + 0.0000938416u^{36} + \cdots + 0.102969u - 0.0432937 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.000154935u^{37} + 0.000266148u^{36} + \cdots + 3.91415u - 3.54515 \\ -0.000183169u^{37} + 0.000395135u^{36} + \cdots + 2.91568u - 0.405958 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.0000125731u^{37} - 0.0000323095u^{36} + \cdots - 0.598837u + 0.850308 \\ 0.0000180956u^{37} - 0.0000598188u^{36} + \cdots - 0.780260u - 0.190793 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -5.52255 \times 10^{-6}u^{37} + 0.0000275093u^{36} + \cdots + 0.181423u + 1.04110 \\ 0.0000180956u^{37} - 0.0000598188u^{36} + \cdots - 0.780260u - 0.190793 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0000555017u^{37} - 0.0000873032u^{36} + \cdots + 0.298354u + 1.16548 \\ 0.0000451724u^{37} - 0.0000928114u^{36} + \cdots - 0.466816u - 0.0638856 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.000138196u^{37} + 0.000264914u^{36} + \cdots + 2.22627u - 2.80391 \\ -0.000147500u^{37} + 0.000324572u^{36} + \cdots + 2.38937u - 0.573314 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.000218010u^{37} + 0.000603676u^{36} + \cdots - 22.4576u - 0.864966$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{38} + 28u^{37} + \cdots + 159u + 1$
c_2, c_5	$u^{38} + 8u^{37} + \cdots + 11u + 1$
c_3	$u^{38} - 8u^{37} + \cdots + 17360u + 1732$
c_4, c_7	$u^{38} + 2u^{37} + \cdots - 12288u + 4096$
c_6	$u^{38} - 4u^{37} + \cdots - 3u + 1$
c_8	$u^{38} - 3u^{37} + \cdots - 11264u + 1024$
c_9, c_{12}	$u^{38} + 13u^{37} + \cdots + 8u + 1$
c_{10}	$u^{38} + 2u^{37} + \cdots + 575973u + 248449$
c_{11}	$u^{38} + 8u^{37} + \cdots - 149993u + 47809$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{38} - 28y^{37} + \cdots - 10893y + 1$
c_2, c_5	$y^{38} + 28y^{37} + \cdots + 159y + 1$
c_3	$y^{38} - 84y^{37} + \cdots + 436784552y + 2999824$
c_4, c_7	$y^{38} + 70y^{37} + \cdots + 134217728y + 16777216$
c_6	$y^{38} + 4y^{37} + \cdots + 19y + 1$
c_8	$y^{38} - 69y^{37} + \cdots - 7864320y + 1048576$
c_9, c_{12}	$y^{38} + y^{37} + \cdots - 84y + 1$
c_{10}	$y^{38} - 84y^{37} + \cdots + 1086486467931y + 61726905601$
c_{11}	$y^{38} + 48y^{37} + \cdots + 51838210455y + 2285700481$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.269512 + 0.935520I$ $a = -0.458289 - 0.782512I$ $b = 0.677405 + 0.518877I$	$-0.61516 + 8.47206I$	$-1.23185 - 12.18265I$
$u = 0.269512 - 0.935520I$ $a = -0.458289 + 0.782512I$ $b = 0.677405 - 0.518877I$	$-0.61516 - 8.47206I$	$-1.23185 + 12.18265I$
$u = -0.615656 + 0.694581I$ $a = -0.427914 + 0.398057I$ $b = 0.267942 + 0.980799I$	$1.12636 - 1.44186I$	$2.40380 + 3.54555I$
$u = -0.615656 - 0.694581I$ $a = -0.427914 - 0.398057I$ $b = 0.267942 - 0.980799I$	$1.12636 + 1.44186I$	$2.40380 - 3.54555I$
$u = -0.690714 + 0.617908I$ $a = -0.599875 - 0.724392I$ $b = -0.695539 + 0.625151I$	$0.91553 - 4.18220I$	$3.10264 + 7.31279I$
$u = -0.690714 - 0.617908I$ $a = -0.599875 + 0.724392I$ $b = -0.695539 - 0.625151I$	$0.91553 + 4.18220I$	$3.10264 - 7.31279I$
$u = -0.962152 + 0.487944I$ $a = 0.020845 + 0.197190I$ $b = -0.32060 + 1.60868I$	$0.067821 + 0.704860I$	$1.59983 - 2.96425I$
$u = -0.962152 - 0.487944I$ $a = 0.020845 - 0.197190I$ $b = -0.32060 - 1.60868I$	$0.067821 - 0.704860I$	$1.59983 + 2.96425I$
$u = 0.334991 + 0.821597I$ $a = -0.428276 + 0.927379I$ $b = -0.299801 - 0.583140I$	$-3.35491 - 0.78621I$	$-8.48784 + 2.29609I$
$u = 0.334991 - 0.821597I$ $a = -0.428276 - 0.927379I$ $b = -0.299801 + 0.583140I$	$-3.35491 + 0.78621I$	$-8.48784 - 2.29609I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.730737 + 0.068723I$ $a = 0.810489 + 0.363992I$ $b = 1.45774 + 1.16856I$	$-0.42860 - 2.78462I$	$1.78865 + 4.97070I$
$u = 0.730737 - 0.068723I$ $a = 0.810489 - 0.363992I$ $b = 1.45774 - 1.16856I$	$-0.42860 + 2.78462I$	$1.78865 - 4.97070I$
$u = 0.154768 + 0.641440I$ $a = -0.858708 + 0.997854I$ $b = 0.415361 - 0.487054I$	$-1.32113 - 1.32492I$	$-1.95750 + 1.98412I$
$u = 0.154768 - 0.641440I$ $a = -0.858708 - 0.997854I$ $b = 0.415361 + 0.487054I$	$-1.32113 + 1.32492I$	$-1.95750 - 1.98412I$
$u = 1.336190 + 0.226899I$ $a = 0.552450 + 0.930807I$ $b = 0.80282 + 3.46642I$	$-0.61371 - 2.86891I$	$-0.25435 + 4.83204I$
$u = 1.336190 - 0.226899I$ $a = 0.552450 - 0.930807I$ $b = 0.80282 - 3.46642I$	$-0.61371 + 2.86891I$	$-0.25435 - 4.83204I$
$u = 0.300084 + 0.412662I$ $a = 0.10831 + 2.92562I$ $b = -0.16429 + 3.48640I$	$1.67684 - 2.65330I$	$7.7232 - 16.8130I$
$u = 0.300084 - 0.412662I$ $a = 0.10831 - 2.92562I$ $b = -0.16429 - 3.48640I$	$1.67684 + 2.65330I$	$7.7232 + 16.8130I$
$u = -0.392217 + 0.325280I$ $a = -1.29311 + 2.21775I$ $b = -0.16047 + 3.66337I$	$2.15015 - 1.46241I$	$-0.02794 + 14.08993I$
$u = -0.392217 - 0.325280I$ $a = -1.29311 - 2.21775I$ $b = -0.16047 - 3.66337I$	$2.15015 + 1.46241I$	$-0.02794 - 14.08993I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.209980+0.250980I$ $a=-3.00779+0.52768I$ $b=-0.802018+0.832176I$	$1.91078-0.79833I$	$4.44525-0.45789I$
$u=-0.209980-0.250980I$ $a=-3.00779-0.52768I$ $b=-0.802018-0.832176I$	$1.91078+0.79833I$	$4.44525+0.45789I$
$u=-1.10703+1.69579I$ $a=\ \ 0.928872-0.073456I$ $b=-2.06666-3.80312I$	$-6.26733+3.08288I$	0
$u=-1.10703-1.69579I$ $a=\ \ 0.928872+0.073456I$ $b=-2.06666+3.80312I$	$-6.26733-3.08288I$	0
$u=\ \ 0.41366+2.27352I$ $a=\ \ 0.273778-1.053910I$ $b=\ \ 0.83748+3.68747I$	$-12.39510+1.09723I$	0
$u=\ \ 0.41366-2.27352I$ $a=\ \ 0.273778+1.053910I$ $b=\ \ 0.83748-3.68747I$	$-12.39510-1.09723I$	0
$u=-0.98102+2.10542I$ $a=-0.285160-1.017430I$ $b=-3.48637+2.72417I$	$-16.2164-7.5794I$	0
$u=-0.98102-2.10542I$ $a=-0.285160+1.017430I$ $b=-3.48637-2.72417I$	$-16.2164+7.5794I$	0
$u=\ \ 1.14222+2.13195I$ $a=-0.006500+1.260510I$ $b=-6.15185-1.87143I$	$-15.9377+14.9717I$	0
$u=\ \ 1.14222-2.13195I$ $a=-0.006500-1.260510I$ $b=-6.15185+1.87143I$	$-15.9377-14.9717I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.58138 + 2.41986I$ $a = -0.021457 + 1.260750I$ $b = 3.60201 - 4.67413I$	$-12.2225 - 8.2203I$	0
$u = -0.58138 - 2.41986I$ $a = -0.021457 - 1.260750I$ $b = 3.60201 + 4.67413I$	$-12.2225 + 8.2203I$	0
$u = 1.75400 + 1.85534I$ $a = 1.163960 + 0.099561I$ $b = -0.64784 + 7.80385I$	$-6.74677 + 2.59569I$	0
$u = 1.75400 - 1.85534I$ $a = 1.163960 - 0.099561I$ $b = -0.64784 - 7.80385I$	$-6.74677 - 2.59569I$	0
$u = 0.32782 + 2.75595I$ $a = -0.238367 - 1.046580I$ $b = 3.58759 + 5.29844I$	$-17.5824 + 5.0951I$	0
$u = 0.32782 - 2.75595I$ $a = -0.238367 + 1.046580I$ $b = 3.58759 - 5.29844I$	$-17.5824 - 5.0951I$	0
$u = -0.22384 + 3.07549I$ $a = 0.016754 + 1.242340I$ $b = 1.64709 - 9.59445I$	$-17.7767 + 1.7959I$	0
$u = -0.22384 - 3.07549I$ $a = 0.016754 - 1.242340I$ $b = 1.64709 + 9.59445I$	$-17.7767 - 1.7959I$	0

II. $I_2^u = \langle u^3 - u^2 + b + 2u,\ -u^2 + a + u - 1,\ u^4 + u^2 + u + 1\rangle$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^2 - u + 1 \\ -u^3 + u^2 - 2u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^3 \\ -u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u^2 - 2u + 1 \\ -u^3 + u^2 - 2u + 1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^3 + u^2 + 1 \\ -u \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -u \\ -u^3 - u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^2 - u + 1 \\ u^2 - u + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 9u^3 - 2u^2 + 2u + 11$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^4 + 2y^3 + 7y^2 + 5y + 1$
c_2, c_4, c_5 c_7	$y^4 + 2y^3 + 3y^2 + y + 1$
c_3	$y^4 - y^3 + 2y^2 + 7y + 4$
c_8	y^4
c_9, c_{12}	$(y-1)^4$
c_{10}, c_{11}	$y^4 + 5y^3 + 7y^2 + 2y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.547424 + 0.585652I$ $a = 1.50411 - 1.22685I$ $b = 0.65230 - 2.13814I$	$2.62503 - 1.39709I$	$13.5849 + 5.3845I$
$u = -0.547424 - 0.585652I$ $a = 1.50411 + 1.22685I$ $b = 0.65230 + 2.13814I$	$2.62503 + 1.39709I$	$13.5849 - 5.3845I$
$u = 0.547424 + 1.120870I$ $a = -0.504108 + 0.106312I$ $b = -0.152300 - 0.614030I$	$-0.98010 + 7.64338I$	$-3.08487 - 3.81741I$
$u = 0.547424 - 1.120870I$ $a = -0.504108 - 0.106312I$ $b = -0.152300 + 0.614030I$	$-0.98010 - 7.64338I$	$-3.08487 + 3.81741I$

III. $\boldsymbol{I_3^u = \langle 3u^5 - u^4 + 5u^3 - 3u^2 + b + 4u - 4,\ 2u^5 + 3u^3 - u^2 + a + 2u - 2,\ u^6 - u^5 + 2u^4 - 2u^3 + 2u^2 - 2u + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 3u^5 - u^4 + 8u^3 - 4u^2 + 5u - 5$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.498832 + 1.001300I$ $a = 0.702221 + 0.130845I$ $b = 0.303615 - 0.669275I$	$1.37919 - 2.82812I$	$3.08014 + 1.90022I$
$u = -0.498832 - 1.001300I$ $a = 0.702221 - 0.130845I$ $b = 0.303615 + 0.669275I$	$1.37919 + 2.82812I$	$3.08014 - 1.90022I$
$u = 0.284920 + 1.115140I$ $a = -0.447279 + 0.479689I$ $b = -0.232199 - 0.362106I$	-2.75839	$-2.43992 - 2.50363I$
$u = 0.284920 - 1.115140I$ $a = -0.447279 - 0.479689I$ $b = -0.232199 + 0.362106I$	-2.75839	$-2.43992 + 2.50363I$
$u = 0.713912 + 0.305839I$ $a = 0.74506 - 2.00027I$ $b = 1.92858 - 2.50729I$	$1.37919 - 2.82812I$	$-2.14022 + 3.69351I$
$u = 0.713912 - 0.305839I$ $a = 0.74506 + 2.00027I$ $b = 1.92858 + 2.50729I$	$1.37919 + 2.82812I$	$-2.14022 - 3.69351I$

IV. $\boldsymbol{I_1^v = \langle a,\ -9.64\times 10^5 v^{11} + 6.59\times 10^5 v^{10} + \cdots + 7.08\times 10^5 b + 3.14\times 10^6,\ v^{12} - v^{11} + \cdots - 3v + 1\rangle}$

(i) Arc colorings

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

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

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

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

$$a_{11} = \begin{pmatrix} 0 \\ 1.36177v^{11} - 0.930621v^{10} + \cdots + 5.08294v - 4.43857 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} v \\ -0.546453v^{11} + 0.201388v^{10} + \cdots - 2.43405v + 1.91940 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.181358v^{11} - 0.113940v^{10} + \cdots + 1.48874v - 0.345065 \\ -0.678951v^{11} + 0.501804v^{10} + \cdots - 2.40704v + 2.15346 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.0595846v^{11} - 0.0327468v^{10} + \cdots - 1.31733v - 0.160053 \\ 2.02290v^{11} - 1.34063v^{10} + \cdots + 7.63126v - 6.61613 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.160053v^{11} - 0.100469v^{10} + \cdots - 0.150791v + 0.202506 \\ 0.678951v^{11} - 0.501804v^{10} + \cdots + 2.40704v - 1.15346 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.518898v^{11} + 0.401335v^{10} + \cdots - 2.55783v + 1.35596 \\ 0.678951v^{11} - 0.501804v^{10} + \cdots + 2.40704v - 1.15346 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.181358v^{11} + 0.113940v^{10} + \cdots - 1.48874v + 0.345065 \\ 0.678951v^{11} - 0.501804v^{10} + \cdots + 2.40704v - 2.15346 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.222666v^{11} - 0.152658v^{10} + \cdots - 0.0683153v - 0.431153 \\ 1.36177v^{11} - 0.930621v^{10} + \cdots + 5.08294v - 4.43857 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{2217}{3419}v^{11} - \frac{1754}{78637}v^{10} - \frac{289681}{78637}v^9 - \frac{404567}{78637}v^8 + \frac{848176}{78637}v^7 + \frac{1557570}{78637}v^6 - \frac{1880820}{78637}v^5 - \frac{7308}{3419}v^4 + \frac{308622}{6049}v^3 - \frac{471268}{78637}v^2 - \frac{64283}{3419}v + \frac{405712}{78637}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 0.695888 + 0.967642I$ $a = 0$ $b = 0.289622 - 0.827421I$	$-1.89061 - 1.10558I$	$-1.04064 + 1.99047I$
$v = 0.695888 - 0.967642I$ $a = 0$ $b = 0.289622 + 0.827421I$	$-1.89061 + 1.10558I$	$-1.04064 - 1.99047I$
$v = -1.185950 + 0.118836I$ $a = 0$ $b = -0.861379 + 0.162890I$	$-1.89061 + 2.95419I$	$-3.79900 - 4.11613I$
$v = -1.185950 - 0.118836I$ $a = 0$ $b = -0.861379 - 0.162890I$	$-1.89061 - 2.95419I$	$-3.79900 + 4.11613I$
$v = -0.125911 + 0.369768I$ $a = 0$ $b = -1.25704 + 1.58618I$	$1.89061 + 2.95419I$	$11.02954 - 8.16480I$
$v = -0.125911 - 0.369768I$ $a = 0$ $b = -1.25704 - 1.58618I$	$1.89061 - 2.95419I$	$11.02954 + 8.16480I$
$v = 0.383184 + 0.075842I$ $a = 0$ $b = -0.74515 + 1.88172I$	$1.89061 + 1.10558I$	$-0.484082 - 0.231437I$
$v = 0.383184 - 0.075842I$ $a = 0$ $b = -0.74515 - 1.88172I$	$1.89061 - 1.10558I$	$-0.484082 + 0.231437I$
$v = -1.38214 + 1.64413I$ $a = 0$ $b = 0.520868 + 0.215334I$	$7.72290I$	$2.83009 - 4.64337I$
$v = -1.38214 - 1.64413I$ $a = 0$ $b = 0.520868 - 0.215334I$	$-7.72290I$	$2.83009 + 4.64337I$

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 2.11493 + 0.37491I$ $a = 0$ $b = -0.446919 + 0.343418I$	$3.66314I$	$-2.53591 - 3.55776I$
$v = 2.11493 - 0.37491I$ $a = 0$ $b = -0.446919 - 0.343418I$	$-3.66314I$	$-2.53591 + 3.55776I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^2-u+1)^6(u^4-2u^3+3u^2-u+1)(u^6-3u^5+4u^4-2u^3+1)$ $\cdot(u^{38}+28u^{37}+\cdots+159u+1)$
c_2	$(u^2+u+1)^6(u^4+u^2+u+1)(u^6-u^5+2u^4-2u^3+2u^2-2u+1)$ $\cdot(u^{38}+8u^{37}+\cdots+11u+1)$
c_3	$(u^2-u+1)^6(u^3-u^2+1)^2(u^4+3u^3+4u^2+3u+2)$ $\cdot(u^{38}-8u^{37}+\cdots+17360u+1732)$
c_4	$u^{12}(u^4+u^2+u+1)(u^6-u^5+2u^4-2u^3+2u^2-2u+1)$ $\cdot(u^{38}+2u^{37}+\cdots-12288u+4096)$
c_5	$(u^2-u+1)^6(u^4+u^2-u+1)(u^6+u^5+2u^4+2u^3+2u^2+2u+1)$ $\cdot(u^{38}+8u^{37}+\cdots+11u+1)$
c_6	$(u^4-2u^3+3u^2-u+1)(u^6-3u^5+4u^4-2u^3+1)$ $\cdot((u^6-3u^5+5u^4-4u^3+2u^2-u+1)^2)(u^{38}-4u^{37}+\cdots-3u+1)$
c_7	$u^{12}(u^4+u^2-u+1)(u^6+u^5+2u^4+2u^3+2u^2+2u+1)$ $\cdot(u^{38}+2u^{37}+\cdots-12288u+4096)$
c_8	$u^{10}(u^6+u^5+\cdots+u+1)^2(u^{38}-3u^{37}+\cdots-11264u+1024)$
c_9	$((u+1)^{10})(u^6-u^5+\cdots-u+1)^2(u^{38}+13u^{37}+\cdots+8u+1)$
c_{10}	$(u^4+u^3+3u^2+2u+1)(u^6+2u^3+4u^2+3u+1)$ $\cdot((u^6-u^5-u^4+2u^3-u+1)^2)(u^{38}+2u^{37}+\cdots+575973u+248449)$
c_{11}	$(u^4+u^3+3u^2+2u+1)(u^6+2u^3+4u^2+3u+1)$ $\cdot(u^6-3u^5+5u^4-4u^3+2u^2-u+1)^2$ $\cdot(u^{38}+8u^{37}+\cdots-149993u+47809)$
c_{12}	$((u-1)^{10})(u^6+u^5+\cdots+u+1)^2(u^{38}+13u^{37}+\cdots+8u+1)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^2+y+1)^6)(y^4+2y^3+\cdots+5y+1)(y^6-y^5+\cdots+8y^2+1)$ $\cdot(y^{38}-28y^{37}+\cdots-10893y+1)$
c_2, c_5	$(y^2+y+1)^6(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^{38}+28y^{37}+\cdots+159y+1)$
c_3	$(y^2+y+1)^6(y^3-y^2+2y-1)^2(y^4-y^3+2y^2+7y+4)$ $\cdot(y^{38}-84y^{37}+\cdots+436784552y+2999824)$
c_4, c_7	$y^{12}(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^{38}+70y^{37}+\cdots+134217728y+16777216)$
c_6	$(y^4+2y^3+7y^2+5y+1)(y^6-y^5+4y^4-2y^3+8y^2+1)$ $\cdot((y^6+y^5+5y^4+6y^2+3y+1)^2)(y^{38}+4y^{37}+\cdots+19y+1)$
c_8	$y^{10}(y^6-3y^5+5y^4-4y^3+2y^2-y+1)^2$ $\cdot(y^{38}-69y^{37}+\cdots-7864320y+1048576)$
c_9, c_{12}	$(y-1)^{10}(y^6-3y^5+5y^4-4y^3+2y^2-y+1)^2$ $\cdot(y^{38}+y^{37}+\cdots-84y+1)$
c_{10}	$(y^4+5y^3+7y^2+2y+1)(y^6+8y^4-2y^3+4y^2-y+1)$ $\cdot(y^6-3y^5+5y^4-4y^3+2y^2-y+1)^2$ $\cdot(y^{38}-84y^{37}+\cdots+1086486467931y+61726905601)$
c_{11}	$(y^4+5y^3+7y^2+2y+1)(y^6+8y^4-2y^3+4y^2-y+1)$ $\cdot(y^6+y^5+5y^4+6y^2+3y+1)^2$ $\cdot(y^{38}+48y^{37}+\cdots+51838210455y+2285700481)$