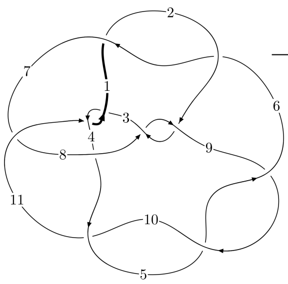
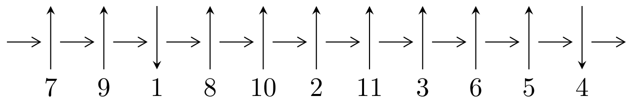
$11a_{324}$ ($K11a_{324}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 5u^{20} - 59u^{19} + \cdots + 16b + 720,\ -35u^{20} + 367u^{19} + \cdots + 32a - 1520,\ u^{21} - 11u^{20} + \cdots + 368u - 32\rangle$$

$$I_2^u = \langle -6.48197 \times 10^{26} a^9u^3 - 2.24957 \times 10^{27} a^8u^3 + \cdots + 6.21716 \times 10^{28} a + 6.82138 \times 10^{28},$$
$$2a^9u^3 - 3a^8u^3 + \cdots - 72a + 3,\ u^4 + u^3 + 3u^2 + 2u + 1\rangle$$

$$I_3^u = \langle -u^6 - 4u^4 + u^3 - 4u^2 + b + u,\ -u^6 - u^5 - 4u^4 - 3u^3 - 3u^2 + a - 3u + 1,$$
$$u^{12} + 8u^{10} - u^9 + 24u^8 - 4u^7 + 32u^6 - 4u^5 + 16u^4 + u^2 + 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 73 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. $I^u_1 = \langle 5u^{20} - 59u^{19} + \cdots + 16b + 720,\ -35u^{20} + 367u^{19} + \cdots + 32a - 1520,\ u^{21} - 11u^{20} + \cdots + 368u - 32\rangle$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1.09375u^{20} - 11.4688u^{19} + \cdots - 488.500u + 47.5000 \\ -\frac{5}{16}u^{20} + \frac{59}{16}u^{19} + \cdots + 425u - 45 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 1.40625u^{20} - 15.1563u^{19} + \cdots - 913.500u + 92.5000 \\ -\frac{5}{16}u^{20} + \frac{59}{16}u^{19} + \cdots + 425u - 45 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -\frac{5}{4}u^{20} + \frac{51}{4}u^{19} + \cdots + 360u - \frac{63}{2} \\ u^{20} - \frac{21}{2}u^{19} + \cdots - \frac{855}{2}u + 40 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{27}{16}u^{20} - \frac{139}{8}u^{19} + \cdots - 939u + 95 \\ -\frac{23}{16}u^{20} + \frac{231}{16}u^{19} + \cdots + 456u - 44 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} \frac{1}{4}u^{20} - \frac{9}{4}u^{19} + \cdots + \frac{137}{2}u - \frac{15}{2} \\ -u^{20} + \frac{21}{2}u^{19} + \cdots + \frac{857}{2}u - 40 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -\frac{3}{4}u^{20} + \frac{15}{2}u^{19} + \cdots + \frac{763}{4}u - 16 \\ \frac{1}{4}u^{20} - \frac{9}{4}u^{19} + \cdots - 143u + 16 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -\frac{3}{4}u^{20} + \frac{15}{2}u^{19} + \cdots + \frac{763}{4}u - 16 \\ \frac{1}{4}u^{20} - \frac{9}{4}u^{19} + \cdots - 143u + 16 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $=$
$\frac{1}{2}u^{19} - \frac{9}{2}u^{18} + \frac{51}{2}u^{17} - \frac{209}{2}u^{16} + 340u^{15} - \frac{1825}{2}u^{14} + 2073u^{13} - \frac{8087}{2}u^{12} + 6835u^{11} - 10051u^{10} + \frac{25731}{2}u^9 - \frac{28567}{2}u^8 + 13650u^7 - \frac{22155}{2}u^6 + 7480u^5 - 4054u^4 + \frac{3327}{2}u^3 - 455u^2 + 52u + 18$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_6 c_8	$u^{21} + 10u^{19} + \cdots + 2u - 1$
c_3, c_{11}	$u^{21} - 13u^{20} + \cdots + 208u - 16$
c_4, c_7	$u^{21} + u^{19} + \cdots - 2u^2 - 1$
c_5, c_9, c_{10}	$u^{21} - 11u^{20} + \cdots + 368u - 32$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_6 c_8	$y^{21} + 20y^{20} + \cdots + 10y - 1$
c_3, c_{11}	$y^{21} + 13y^{20} + \cdots + 3968y - 256$
c_4, c_7	$y^{21} + 2y^{20} + \cdots - 4y - 1$
c_5, c_9, c_{10}	$y^{21} + 21y^{20} + \cdots + 4864y - 1024$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.833412 + 0.782147I$ $a = 0.687594 - 0.745251I$ $b = -0.40300 - 1.39208I$	$-3.62928 + 10.88750I$	$3.73824 - 7.98574I$
$u = 0.833412 - 0.782147I$ $a = 0.687594 + 0.745251I$ $b = -0.40300 + 1.39208I$	$-3.62928 - 10.88750I$	$3.73824 + 7.98574I$
$u = 1.112700 + 0.364278I$ $a = 0.359904 - 0.202646I$ $b = 0.131151 - 1.261410I$	$-2.28517 - 4.65043I$	$4.06472 + 5.66819I$
$u = 1.112700 - 0.364278I$ $a = 0.359904 + 0.202646I$ $b = 0.131151 + 1.261410I$	$-2.28517 + 4.65043I$	$4.06472 - 5.66819I$
$u = 0.344675 + 0.678605I$ $a = 0.431309 - 0.926685I$ $b = -0.592900 - 0.573194I$	$1.84838 + 1.63594I$	$8.69775 - 4.82521I$
$u = 0.344675 - 0.678605I$ $a = 0.431309 + 0.926685I$ $b = -0.592900 + 0.573194I$	$1.84838 - 1.63594I$	$8.69775 + 4.82521I$
$u = 0.133089 + 1.297270I$ $a = 0.112115 + 0.615559I$ $b = 0.400211 + 0.336613I$	$-3.40974 + 1.83530I$	$7.00245 - 4.90716I$
$u = 0.133089 - 1.297270I$ $a = 0.112115 - 0.615559I$ $b = 0.400211 - 0.336613I$	$-3.40974 - 1.83530I$	$7.00245 + 4.90716I$
$u = 0.609486 + 0.268410I$ $a = -0.040658 + 0.537694I$ $b = 0.672784 - 0.348826I$	$3.15197 + 1.79452I$	$11.79217 - 1.79291I$
$u = 0.609486 - 0.268410I$ $a = -0.040658 - 0.537694I$ $b = 0.672784 + 0.348826I$	$3.15197 - 1.79452I$	$11.79217 + 1.79291I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.039590 + 0.860809I$ $a = -0.542621 + 0.649922I$ $b = 0.181872 + 1.313600I$	$-6.77144 + 3.85307I$	$-1.71548 - 7.56695I$
$u = 1.039590 - 0.860809I$ $a = -0.542621 - 0.649922I$ $b = 0.181872 - 1.313600I$	$-6.77144 - 3.85307I$	$-1.71548 + 7.56695I$
$u = 0.221176 + 1.373870I$ $a = -0.661614 - 0.256686I$ $b = -0.596408 + 0.187921I$	$-2.03502 + 4.78161I$	$6.69466 - 0.24839I$
$u = 0.221176 - 1.373870I$ $a = -0.661614 + 0.256686I$ $b = -0.596408 - 0.187921I$	$-2.03502 - 4.78161I$	$6.69466 + 0.24839I$
$u = 0.400789$ $a = 0.530955$ $b = -0.355136$	0.646030	15.4450
$u = 0.26372 + 1.64197I$ $a = -0.42059 + 1.78410I$ $b = 0.57970 + 1.59171I$	$-11.6624 + 15.0339I$	$2.04142 - 7.27394I$
$u = 0.26372 - 1.64197I$ $a = -0.42059 - 1.78410I$ $b = 0.57970 - 1.59171I$	$-11.6624 - 15.0339I$	$2.04142 + 7.27394I$
$u = 0.29003 + 1.67173I$ $a = 0.47249 - 1.61270I$ $b = -0.44648 - 1.50505I$	$-15.0973 + 8.6991I$	$-1.14624 - 4.73883I$
$u = 0.29003 - 1.67173I$ $a = 0.47249 + 1.61270I$ $b = -0.44648 + 1.50505I$	$-15.0973 - 8.6991I$	$-1.14624 + 4.73883I$
$u = 0.45173 + 1.85181I$ $a = -0.413403 + 1.215080I$ $b = 0.250641 + 1.241720I$	$-8.95857 + 2.10992I$	$-13.39192 - 3.92736I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.45173 - 1.85181I$		
$a = -0.413403 - 1.215080I$	$-8.95857 - 2.10992I$	$-13.39192 + 3.92736I$
$b = \quad 0.250641 - 1.241720I$		

II. $\boldsymbol{I_2^u = \langle -6.48 \times 10^{26} a^9 u^3 - 2.25 \times 10^{27} a^8 u^3 + \cdots + 6.22 \times 10^{28} a + 6.82 \times 10^{28},\ 2a^9 u^3 - 3a^8 u^3 + \cdots - 72a + 3,\ u^4 + u^3 + 3u^2 + 2u + 1 \rangle}$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} a \\ 0.0165355a^9u^3 + 0.0573866a^8u^3 + \cdots - 1.58600a - 1.74014 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -0.0165355a^9u^3 - 0.0573866a^8u^3 + \cdots + 2.58600a + 1.74014 \\ 0.0165355a^9u^3 + 0.0573866a^8u^3 + \cdots - 1.58600a - 1.74014 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.000922235a^9u^3 + 0.0578207a^8u^3 + \cdots + 0.0532973a + 0.490016 \\ -0.0143278a^9u^3 + 0.00178663a^8u^3 + \cdots - 0.336225a - 0.132170 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0530326a^9u^3 + 0.0145794a^8u^3 + \cdots - 2.36649a + 0.337689 \\ 0.0257401a^9u^3 + 0.0549904a^8u^3 + \cdots - 2.07867a - 0.923136 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} 0.00177082a^9u^3 - 0.000877393a^8u^3 + \cdots + 0.0216790a + 0.476649 \\ -0.0288170a^9u^3 - 0.0447707a^8u^3 + \cdots + 0.194187a + 0.627577 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.0109816a^9u^3 - 0.0176154a^8u^3 + \cdots + 0.0681560a + 1.02747 \\ -0.0127258a^9u^3 - 0.00892781a^8u^3 + \cdots + 0.0628627a + 1.84822 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.0109816a^9u^3 - 0.0176154a^8u^3 + \cdots + 0.0681560a + 1.02747 \\ -0.0127258a^9u^3 - 0.00892781a^8u^3 + \cdots + 0.0628627a + 1.84822 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.0146198a^9u^3 - 0.0649565a^8u^3 + \cdots - 0.385084a + 9.99651$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_6 c_8	$u^{40} + u^{39} + \cdots + 2894u + 361$
c_3, c_{11}	$(u^5 + u^4 + 2u^3 + u^2 + u + 1)^8$
c_4, c_7	$u^{40} - 5u^{39} + \cdots - 90u + 19$
c_5, c_9, c_{10}	$(u^4 + u^3 + 3u^2 + 2u + 1)^{10}$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_6 c_8	$y^{40} + 35y^{39} + \cdots - 529984y + 130321$
c_3, c_{11}	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)^8$
c_4, c_7	$y^{40} + 7y^{39} + \cdots + 9304y + 361$
c_5, c_9, c_{10}	$(y^4 + 5y^3 + 7y^2 + 2y + 1)^{10}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.395123+0.506844I$ $a=-0.825694+0.761391I$ $b=\ \ 0.486624-0.146803I$	$-2.32272-1.41510I$	$3.30788+4.90874I$
$u=-0.395123+0.506844I$ $a=-1.176830-0.099414I$ $b=\ \ 0.56198-1.34282I$	$-4.39470-2.94568I$	$2.34185+9.33939I$
$u=-0.395123+0.506844I$ $a=\ \ 1.124900+0.392414I$ $b=-0.22676+1.56517I$	$-4.39470+0.11547I$	$2.34185+0.47809I$
$u=-0.395123+0.506844I$ $a=-0.093009-0.749116I$ $b=-0.618982-0.887013I$	$1.14877+2.98573I$	$6.57105+1.41016I$
$u=-0.395123+0.506844I$ $a=\ \ 0.582300-0.394023I$ $b=-1.069750+0.079546I$	$1.14877-5.81594I$	$6.57105+8.40733I$
$u=-0.395123+0.506844I$ $a=\ \ 0.58749+1.48072I$ $b=-0.058215+1.023990I$	$-2.32272-1.41510I$	$3.30788+4.90874I$
$u=-0.395123+0.506844I$ $a=\ \ 0.77408-1.82030I$ $b=\ \ 0.277716-0.212100I$	$1.14877+2.98573I$	$6.57105+1.41016I$
$u=-0.395123+0.506844I$ $a=-2.19803+0.07064I$ $b=-0.060334-1.148470I$	$-4.39470+0.11547I$	$2.34185+0.47809I$
$u=-0.395123+0.506844I$ $a=\ \ 2.12871+0.77761I$ $b=-0.056830+1.372610I$	$-4.39470-2.94568I$	$2.34185+9.33939I$
$u=-0.395123+0.506844I$ $a=-0.70829-2.26113I$ $b=\ \ 0.412739-1.024450I$	$1.14877-5.81594I$	$6.57105+8.40733I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.395123-0.506844I$ $a=-0.825694-0.761391I$ $b=\quad 0.486624+0.146803I$	$-2.32272+1.41510I$	$3.30788-4.90874I$
$u=-0.395123-0.506844I$ $a=-1.176830+0.099414I$ $b=\quad 0.56198+1.34282I$	$-4.39470+2.94568I$	$2.34185-9.33939I$
$u=-0.395123-0.506844I$ $a=\quad 1.124900-0.392414I$ $b=-0.22676-1.56517I$	$-4.39470-0.11547I$	$2.34185-0.47809I$
$u=-0.395123-0.506844I$ $a=-0.093009+0.749116I$ $b=-0.618982+0.887013I$	$1.14877-2.98573I$	$6.57105-1.41016I$
$u=-0.395123-0.506844I$ $a=\quad 0.582300+0.394023I$ $b=-1.069750-0.079546I$	$1.14877+5.81594I$	$6.57105-8.40733I$
$u=-0.395123-0.506844I$ $a=\quad 0.58749-1.48072I$ $b=-0.058215-1.023990I$	$-2.32272+1.41510I$	$3.30788-4.90874I$
$u=-0.395123-0.506844I$ $a=\quad 0.77408+1.82030I$ $b=\quad 0.277716+0.212100I$	$1.14877-2.98573I$	$6.57105-1.41016I$
$u=-0.395123-0.506844I$ $a=-2.19803-0.07064I$ $b=-0.060334+1.148470I$	$-4.39470-0.11547I$	$2.34185-0.47809I$
$u=-0.395123-0.506844I$ $a=\quad 2.12871-0.77761I$ $b=-0.056830-1.372610I$	$-4.39470+2.94568I$	$2.34185-9.33939I$
$u=-0.395123-0.506844I$ $a=-0.70829+2.26113I$ $b=\quad 0.412739+1.024450I$	$1.14877+5.81594I$	$6.57105-8.40733I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.10488+1.55249I$ $a=\ \ 0.768262-0.287452I$ $b=\ \ 1.62038-0.20838I$	$-5.85298-7.56480I$	$2.91758+6.06338I$
$u=-0.10488+1.55249I$ $a=-0.098548+0.494298I$ $b=\ \ 0.686422+0.233614I$	$-5.85298+1.23687I$	$2.91758-0.93379I$
$u=-0.10488+1.55249I$ $a=-0.159807+0.282979I$ $b=-1.077640+0.318986I$	$-9.32446-3.16396I$	$-0.34560+2.56480I$
$u=-0.10488+1.55249I$ $a=\ \ 0.20232+1.69625I$ $b=\ \ 0.322385+1.246000I$	$-5.85298+1.23687I$	$2.91758-0.93379I$
$u=-0.10488+1.55249I$ $a=\ \ 0.95740+1.43668I$ $b=-0.300846+1.175150I$	$-11.39640-1.63338I$	$-1.31162-1.86585I$
$u=-0.10488+1.55249I$ $a=-0.08180+1.73380I$ $b=-1.02050+1.63272I$	$-11.39640-4.69454I$	$-1.31162+6.99545I$
$u=-0.10488+1.55249I$ $a=-0.22855-2.06799I$ $b=\ \ 0.53799-1.92599I$	$-11.39640-1.63338I$	$-1.31162-1.86585I$
$u=-0.10488+1.55249I$ $a=-0.21085-2.10586I$ $b=\ \ 0.04036-1.42870I$	$-9.32446-3.16396I$	$-0.34560+2.56480I$
$u=-0.10488+1.55249I$ $a=-0.83572-2.03035I$ $b=\ \ 0.25538-1.44672I$	$-11.39640-4.69454I$	$-1.31162+6.99545I$
$u=-0.10488+1.55249I$ $a=-0.00833+2.34458I$ $b=-0.212128+1.314620I$	$-5.85298-7.56480I$	$2.91758+6.06338I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.10488-1.55249I$ $a=0.768262+0.287452I$ $b=1.62038+0.20838I$	$-5.85298+7.56480I$	$2.91758-6.06338I$
$u=-0.10488-1.55249I$ $a=-0.098548-0.494298I$ $b=0.686422-0.233614I$	$-5.85298-1.23687I$	$2.91758+0.93379I$
$u=-0.10488-1.55249I$ $a=-0.159807-0.282979I$ $b=-1.077640-0.318986I$	$-9.32446+3.16396I$	$-0.34560-2.56480I$
$u=-0.10488-1.55249I$ $a=0.20232-1.69625I$ $b=0.322385-1.246000I$	$-5.85298-1.23687I$	$2.91758+0.93379I$
$u=-0.10488-1.55249I$ $a=0.95740-1.43668I$ $b=-0.300846-1.175150I$	$-11.39640+1.63338I$	$-1.31162+1.86585I$
$u=-0.10488-1.55249I$ $a=-0.08180-1.73380I$ $b=-1.02050-1.63272I$	$-11.39640+4.69454I$	$-1.31162-6.99545I$
$u=-0.10488-1.55249I$ $a=-0.22855+2.06799I$ $b=0.53799+1.92599I$	$-11.39640+1.63338I$	$-1.31162+1.86585I$
$u=-0.10488-1.55249I$ $a=-0.21085+2.10586I$ $b=0.04036+1.42870I$	$-9.32446+3.16396I$	$-0.34560-2.56480I$
$u=-0.10488-1.55249I$ $a=-0.83572+2.03035I$ $b=0.25538+1.44672I$	$-11.39640+4.69454I$	$-1.31162-6.99545I$
$u=-0.10488-1.55249I$ $a=-0.00833-2.34458I$ $b=-0.212128-1.314620I$	$-5.85298+7.56480I$	$2.91758-6.06338I$

III. $\boldsymbol{I_3^u = \langle -u^6 - 4u^4 + u^3 - 4u^2 + b + u,\ -u^6 - u^5 - 4u^4 - 3u^3 - 3u^2 + a - 3u + 1,\ u^{12} + 8u^{10} + \cdots + u^2 + 1\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^6 + u^5 + 4u^4 + 3u^3 + 3u^2 + 3u - 1 \\ u^6 + 4u^4 - u^3 + 4u^2 - u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^5 + 4u^3 - u^2 + 4u - 1 \\ u^6 + 4u^4 - u^3 + 4u^2 - u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^{11} + 8u^9 - 2u^8 + 24u^7 - 10u^6 + 33u^5 - 16u^4 + 18u^3 - 8u^2 + u \\ -u^9 - 6u^7 + u^6 - 12u^5 + 2u^4 - 8u^3 + u - 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^{11} + 7u^9 - u^8 + 18u^7 - 3u^6 + 20u^5 - u^4 + 8u^3 + 3u^2 + 2 \\ -u^{10} - 6u^8 + 2u^7 - 12u^6 + 7u^5 - 9u^4 + 7u^3 - 2u^2 + 2u - 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^{11} + 7u^9 - 2u^8 + 18u^7 - 9u^6 + 21u^5 - 14u^4 + 10u^3 - 8u^2 + u \\ -u^9 - 6u^7 + u^6 - 12u^5 + 2u^4 - 8u^3 - 1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^{10} - 7u^8 + u^7 - 17u^6 + 4u^5 - 16u^4 + 5u^3 - 5u^2 + 3u - 1 \\ -u^{11} - 7u^9 + u^8 - 18u^7 + 4u^6 - 20u^5 + 6u^4 - 8u^3 + 4u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^{10} - 7u^8 + u^7 - 17u^6 + 4u^5 - 16u^4 + 5u^3 - 5u^2 + 3u - 1 \\ -u^{11} - 7u^9 + u^8 - 18u^7 + 4u^6 - 20u^5 + 6u^4 - 8u^3 + 4u^2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= u^{11} + 3u^{10} + 8u^9 + 18u^8 + 20u^7 + 38u^6 + 22u^5 + 35u^4 + 17u^3 + 13u^2 + 8u + 5$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^{12}+6u^{10}-u^9+15u^8-4u^7+17u^6-5u^5+9u^4-4u^3+4u^2-u+1$
c_2, c_6	$u^{12}+6u^{10}+u^9+15u^8+4u^7+17u^6+5u^5+9u^4+4u^3+4u^2+u+1$
c_3	$u^{12}+2u^{11}+\cdots+3u+2$
c_4, c_7	$u^{12}+u^{10}+u^9+7u^8+5u^6+4u^5+7u^4+u^3+3u^2+3u+1$
c_5	$u^{12}+8u^{10}+u^9+24u^8+4u^7+32u^6+4u^5+16u^4+u^2+1$
c_9, c_{10}	$u^{12}+8u^{10}-u^9+24u^8-4u^7+32u^6-4u^5+16u^4+u^2+1$
c_{11}	$u^{12}-2u^{11}+\cdots-3u+2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_6 c_8	$y^{12} + 12y^{11} + \cdots + 7y + 1$
c_3, c_{11}	$y^{12} + 10y^{11} + \cdots + 27y + 4$
c_4, c_7	$y^{12} + 2y^{11} + \cdots - 3y + 1$
c_5, c_9, c_{10}	$y^{12} + 16y^{11} + \cdots + 2y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.230605 + 1.156080I$ $a = -0.567331 - 0.745762I$ $b = -0.020024 - 0.653910I$	$-4.31667 + 1.17027I$	$-1.62350 - 1.30347I$
$u = 0.230605 - 1.156080I$ $a = -0.567331 + 0.745762I$ $b = -0.020024 + 0.653910I$	$-4.31667 - 1.17027I$	$-1.62350 + 1.30347I$
$u = 0.140093 + 1.297660I$ $a = 0.853374 + 0.043040I$ $b = 0.508580 + 0.397736I$	$-2.44663 + 5.70307I$	$2.68049 - 6.99360I$
$u = 0.140093 - 1.297660I$ $a = 0.853374 - 0.043040I$ $b = 0.508580 - 0.397736I$	$-2.44663 - 5.70307I$	$2.68049 + 6.99360I$
$u = 0.378668 + 0.342829I$ $a = -0.32614 + 2.14787I$ $b = -0.468199 + 0.625265I$	$0.94072 - 3.94879I$	$4.00078 + 7.18659I$
$u = 0.378668 - 0.342829I$ $a = -0.32614 - 2.14787I$ $b = -0.468199 - 0.625265I$	$0.94072 + 3.94879I$	$4.00078 - 7.18659I$
$u = -0.365297 + 0.317056I$ $a = -2.00440 + 0.48099I$ $b = 0.219991 - 1.387990I$	$-4.41748 - 1.96789I$	$2.03835 + 0.71750I$
$u = -0.365297 - 0.317056I$ $a = -2.00440 - 0.48099I$ $b = 0.219991 + 1.387990I$	$-4.41748 + 1.96789I$	$2.03835 - 0.71750I$
$u = -0.09322 + 1.52595I$ $a = 0.48519 + 1.85935I$ $b = -0.55494 + 1.55922I$	$-10.83690 - 3.47795I$	$2.93008 + 1.05575I$
$u = -0.09322 - 1.52595I$ $a = 0.48519 - 1.85935I$ $b = -0.55494 - 1.55922I$	$-10.83690 + 3.47795I$	$2.93008 - 1.05575I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.29085 + 1.69584I$ $a = -0.440697 - 1.320550I$ $b = \quad 0.314595 - 1.264580I$	$-8.53189 - 1.98164I$	$5.47380 - 1.06952I$
$u = -0.29085 - 1.69584I$ $a = -0.440697 + 1.320550I$ $b = \quad 0.314595 + 1.264580I$	$-8.53189 + 1.98164I$	$5.47380 + 1.06952I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_8	$(u^{12}+6u^{10}-u^9+15u^8-4u^7+17u^6-5u^5+9u^4-4u^3+4u^2-u+1)$ $\cdot(u^{21}+10u^{19}+\cdots+2u-1)(u^{40}+u^{39}+\cdots+2894u+361)$
c_2, c_6	$(u^{12}+6u^{10}+u^9+15u^8+4u^7+17u^6+5u^5+9u^4+4u^3+4u^2+u+1)$ $\cdot(u^{21}+10u^{19}+\cdots+2u-1)(u^{40}+u^{39}+\cdots+2894u+361)$
c_3	$((u^5+u^4+2u^3+u^2+u+1)^8)(u^{12}+2u^{11}+\cdots+3u+2)$ $\cdot(u^{21}-13u^{20}+\cdots+208u-16)$
c_4, c_7	$(u^{12}+u^{10}+u^9+7u^8+5u^6+4u^5+7u^4+u^3+3u^2+3u+1)$ $\cdot(u^{21}+u^{19}+\cdots-2u^2-1)(u^{40}-5u^{39}+\cdots-90u+19)$
c_5	$(u^4+u^3+3u^2+2u+1)^{10}$ $\cdot(u^{12}+8u^{10}+u^9+24u^8+4u^7+32u^6+4u^5+16u^4+u^2+1)$ $\cdot(u^{21}-11u^{20}+\cdots+368u-32)$
c_9, c_{10}	$(u^4+u^3+3u^2+2u+1)^{10}$ $\cdot(u^{12}+8u^{10}-u^9+24u^8-4u^7+32u^6-4u^5+16u^4+u^2+1)$ $\cdot(u^{21}-11u^{20}+\cdots+368u-32)$
c_{11}	$((u^5+u^4+2u^3+u^2+u+1)^8)(u^{12}-2u^{11}+\cdots-3u+2)$ $\cdot(u^{21}-13u^{20}+\cdots+208u-16)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_6 c_8	$(y^{12} + 12y^{11} + \cdots + 7y + 1)(y^{21} + 20y^{20} + \cdots + 10y - 1)$ $\cdot\,(y^{40} + 35y^{39} + \cdots - 529984y + 130321)$
c_3, c_{11}	$((y^5 + 3y^4 + 4y^3 + y^2 - y - 1)^8)(y^{12} + 10y^{11} + \cdots + 27y + 4)$ $\cdot\,(y^{21} + 13y^{20} + \cdots + 3968y - 256)$
c_4, c_7	$(y^{12} + 2y^{11} + \cdots - 3y + 1)(y^{21} + 2y^{20} + \cdots - 4y - 1)$ $\cdot\,(y^{40} + 7y^{39} + \cdots + 9304y + 361)$
c_5, c_9, c_{10}	$((y^4 + 5y^3 + 7y^2 + 2y + 1)^{10})(y^{12} + 16y^{11} + \cdots + 2y + 1)$ $\cdot\,(y^{21} + 21y^{20} + \cdots + 4864y - 1024)$