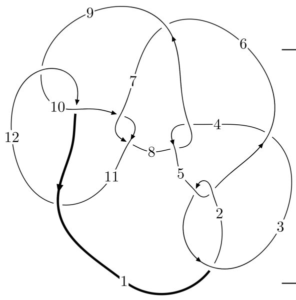
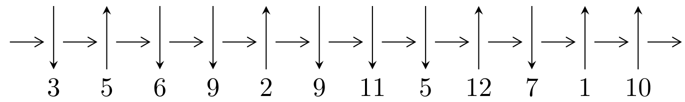
$12n_{0002}$ $(K12n_{0002})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 1.50952 \times 10^{19} u^{57} - 1.17965 \times 10^{20} u^{56} + \cdots + 8.90580 \times 10^{18} b - 7.29842 \times 10^{18},$$
$$- 1.00393 \times 10^{18} u^{57} + 3.12591 \times 10^{18} u^{56} + \cdots + 4.45290 \times 10^{18} a + 3.47008 \times 10^{18},\ u^{58} - 8u^{57} + \cdots - 2u -$$
$$I_2^u = \langle -a^5 + a^4 u + 5a^3 u + 5a^3 + a^2 - 5au + 3b - 3a + u + 1,\ a^6 - 4a^4 u - 4a^4 + a^3 + 4a^2 u + 1,\ u^2 + u + 1\rangle$$
$$I_3^u = \langle -u^3 + u^2 + b - 1,\ u^4 - u^3 + 2u^2 + a,\ u^5 - u^4 + 2u^3 - u^2 + u - 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 75 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.
$\boldsymbol{I_1^u = \langle 1.51\times 10^{19}u^{57} - 1.18\times 10^{20}u^{56} + \cdots + 8.91\times 10^{18}b - 7.30\times 10^{18},\ -1.00\times 10^{18}u^{57} + 3.13\times 10^{18}u^{56} + \cdots + 4.45\times 10^{18}a + 3.47\times 10^{18},\ u^{58} - 8u^{57} + \cdots - 2u + 1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_5 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_6 = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_1 = \begin{pmatrix}u^2+1\\-u^4\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}0.225455u^{57} - 0.701994u^{56} + \cdots - 6.72656u - 0.779286\\-1.69498u^{57} + 13.2459u^{56} + \cdots - 1.76418u + 0.819513\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-0.0574055u^{57} - 0.455661u^{56} + \cdots + 3.20301u + 1.10290\\0.153541u^{57} - 1.95463u^{56} + \cdots + 0.280763u - 0.208388\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-0.439374u^{57} + 3.08799u^{56} + \cdots - 7.87466u - 0.429764\\-1.22559u^{57} + 7.69945u^{56} + \cdots + 0.535607u - 0.892059\end{pmatrix}$$
$$a_4 = \begin{pmatrix}u^4+u^2+1\\u^4\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-0.439374u^{57} + 3.08799u^{56} + \cdots - 7.87466u - 0.429764\\-2.54116u^{57} + 16.5796u^{56} + \cdots + 0.950230u - 1.31906\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-0.144303u^{57} + 0.234853u^{56} + \cdots + 4.42130u + 0.826807\\0.637447u^{57} - 5.42639u^{56} + \cdots + 1.41189u - 0.810401\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-u^2-1\\-0.0312500u^{57} + 0.218750u^{56} + \cdots + 1.03125u^2 + 1.96875u\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{11962378823504572851}{4452900487453949456}u^{57} - \frac{51305067713791607137}{2226450243726974728}u^{56} + \cdots + \frac{42176209722625714401}{4452900487453949456}u - \frac{11662141419335258151}{2226450243726974728}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{58} + 36u^{57} + \cdots + 38u + 1$
c_2, c_5	$u^{58} + 8u^{57} + \cdots + 2u + 1$
c_3	$u^{58} - 8u^{57} + \cdots - 10u + 1$
c_4, c_8	$u^{58} + 2u^{57} + \cdots + 22528u^2 - 4096$
c_6	$u^{58} - 4u^{57} + \cdots + 2u - 1$
c_7, c_{10}	$u^{58} + 3u^{57} + \cdots + 96u + 32$
c_9, c_{12}	$u^{58} + 8u^{57} + \cdots - 8u - 1$
c_{11}	$u^{58} - 24u^{57} + \cdots + 160u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{58} - 20y^{57} + \cdots + 1622y + 1$
c_2, c_5	$y^{58} + 36y^{57} + \cdots + 38y + 1$
c_3	$y^{58} - 76y^{57} + \cdots + 38y + 1$
c_4, c_8	$y^{58} - 70y^{57} + \cdots - 184549376y + 16777216$
c_6	$y^{58} - 76y^{57} + \cdots + 34y + 1$
c_7, c_{10}	$y^{58} - 39y^{57} + \cdots - 11776y + 1024$
c_9, c_{12}	$y^{58} - 24y^{57} + \cdots + 160y + 1$
c_{11}	$y^{58} + 28y^{57} + \cdots - 15092y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.275952 + 0.968192I$ $a = -0.000155 + 0.297955I$ $b = 1.10303 - 1.31729I$	$-0.96404 + 7.38208I$	0
$u = 0.275952 - 0.968192I$ $a = -0.000155 - 0.297955I$ $b = 1.10303 + 1.31729I$	$-0.96404 - 7.38208I$	0
$u = 0.978634 + 0.050547I$ $a = -0.55182 + 2.57301I$ $b = 0.022208 - 0.782754I$	$-4.75178 - 2.65507I$	0
$u = 0.978634 - 0.050547I$ $a = -0.55182 - 2.57301I$ $b = 0.022208 + 0.782754I$	$-4.75178 + 2.65507I$	0
$u = 1.023510 + 0.155528I$ $a = -0.27153 - 2.55040I$ $b = 0.021646 + 0.911291I$	$-8.49450 - 9.39894I$	0
$u = 1.023510 - 0.155528I$ $a = -0.27153 + 2.55040I$ $b = 0.021646 - 0.911291I$	$-8.49450 + 9.39894I$	0
$u = 1.039610 + 0.094873I$ $a = 0.51869 + 1.62894I$ $b = 0.260631 - 0.513525I$	$-10.45060 - 3.04051I$	0
$u = 1.039610 - 0.094873I$ $a = 0.51869 - 1.62894I$ $b = 0.260631 + 0.513525I$	$-10.45060 + 3.04051I$	0
$u = 0.955917$ $a = 1.03957$ $b = -1.17742$	-3.08584	0
$u = -0.171249 + 1.030670I$ $a = -0.063866 + 0.965609I$ $b = 1.090800 + 0.593842I$	$-0.92134 - 2.15292I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.171249 - 1.030670I$ $a = -0.063866 - 0.965609I$ $b = 1.090800 - 0.593842I$	$-0.92134 + 2.15292I$	0
$u = 0.093713 + 0.946838I$ $a = -0.553562 - 0.684632I$ $b = -1.49296 + 1.41946I$	$0.65102 + 1.70576I$	0
$u = 0.093713 - 0.946838I$ $a = -0.553562 + 0.684632I$ $b = -1.49296 - 1.41946I$	$0.65102 - 1.70576I$	0
$u = -0.385585 + 0.867994I$ $a = -0.485247 + 0.372815I$ $b = -0.175174 + 0.510497I$	$-0.35129 - 1.66089I$	0
$u = -0.385585 - 0.867994I$ $a = -0.485247 - 0.372815I$ $b = -0.175174 - 0.510497I$	$-0.35129 + 1.66089I$	0
$u = -0.505582 + 0.803238I$ $a = -2.09011 - 2.61641I$ $b = -2.09154 - 2.96921I$	$1.74781 - 1.62369I$	$0. + 24.7327I$
$u = -0.505582 - 0.803238I$ $a = -2.09011 + 2.61641I$ $b = -2.09154 + 2.96921I$	$1.74781 + 1.62369I$	$0. - 24.7327I$
$u = -0.561420 + 0.898597I$ $a = 2.07464 + 1.60753I$ $b = 1.43908 + 1.62628I$	$1.38531 - 2.69246I$	0
$u = -0.561420 - 0.898597I$ $a = 2.07464 - 1.60753I$ $b = 1.43908 - 1.62628I$	$1.38531 + 2.69246I$	0
$u = -0.726204 + 0.589006I$ $a = 0.00616 + 1.68117I$ $b = -0.547028 + 1.145170I$	$-0.969194 + 0.999280I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.726204 - 0.589006I$ $a = 0.00616 - 1.68117I$ $b = -0.547028 - 1.145170I$	$-0.969194 - 0.999280I$	0
$u = 0.175532 + 1.051230I$ $a = 0.428231 - 0.504967I$ $b = 0.019179 - 0.580968I$	$-3.55927 + 2.47567I$	0
$u = 0.175532 - 1.051230I$ $a = 0.428231 + 0.504967I$ $b = 0.019179 + 0.580968I$	$-3.55927 - 2.47567I$	0
$u = -0.024346 + 0.878987I$ $a = -1.212630 + 0.073534I$ $b = -2.14746 + 0.60990I$	$1.218520 - 0.673498I$	$-4.18882 - 1.05925I$
$u = -0.024346 - 0.878987I$ $a = -1.212630 - 0.073534I$ $b = -2.14746 - 0.60990I$	$1.218520 + 0.673498I$	$-4.18882 + 1.05925I$
$u = -0.704127 + 0.981644I$ $a = -1.74849 + 0.22678I$ $b = -1.64792 - 0.60728I$	$-2.05852 - 6.41903I$	0
$u = -0.704127 - 0.981644I$ $a = -1.74849 - 0.22678I$ $b = -1.64792 + 0.60728I$	$-2.05852 + 6.41903I$	0
$u = -0.692017 + 0.375664I$ $a = 0.372198 - 0.642161I$ $b = 0.920888 - 0.097592I$	$-0.81151 - 3.99437I$	$-2.30538 + 5.50801I$
$u = -0.692017 - 0.375664I$ $a = 0.372198 + 0.642161I$ $b = 0.920888 + 0.097592I$	$-0.81151 + 3.99437I$	$-2.30538 - 5.50801I$
$u = -0.629338 + 1.046620I$ $a = 0.677631 - 0.327862I$ $b = 0.848161 + 0.573228I$	$-2.61151 - 1.02917I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.629338 - 1.046620I$ $a = 0.677631 + 0.327862I$ $b = 0.848161 - 0.573228I$	$-2.61151 + 1.02917I$	0
$u = -0.171554 + 1.234280I$ $a = 0.966951 - 0.171109I$ $b = 1.74065 - 1.48643I$	$-6.43951 - 0.95824I$	0
$u = -0.171554 - 1.234280I$ $a = 0.966951 + 0.171109I$ $b = 1.74065 + 1.48643I$	$-6.43951 + 0.95824I$	0
$u = 0.463795 + 1.173060I$ $a = 0.245701 - 0.546846I$ $b = 0.27203 - 1.99888I$	$-4.70507 + 4.20146I$	0
$u = 0.463795 - 1.173060I$ $a = 0.245701 + 0.546846I$ $b = 0.27203 + 1.99888I$	$-4.70507 - 4.20146I$	0
$u = -0.276279 + 1.243530I$ $a = -0.500340 - 0.211080I$ $b = -1.57432 + 1.01324I$	$-5.50368 - 7.01216I$	0
$u = -0.276279 - 1.243530I$ $a = -0.500340 + 0.211080I$ $b = -1.57432 - 1.01324I$	$-5.50368 + 7.01216I$	0
$u = 0.305286 + 0.606062I$ $a = 0.384294 + 0.040597I$ $b = 0.905016 - 1.068230I$	$0.07617 - 4.63797I$	$-3.02109 + 8.51541I$
$u = 0.305286 - 0.606062I$ $a = 0.384294 - 0.040597I$ $b = 0.905016 + 1.068230I$	$0.07617 + 4.63797I$	$-3.02109 - 8.51541I$
$u = 0.646890$ $a = -1.12299$ $b = 0.559207$	-1.53774	-8.16170

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.490058 + 1.298210I$ $a = -0.386776 + 0.469667I$ $b = -0.38414 + 2.46629I$	$-7.08177 + 5.14263I$	0
$u = 0.490058 - 1.298210I$ $a = -0.386776 - 0.469667I$ $b = -0.38414 - 2.46629I$	$-7.08177 - 5.14263I$	0
$u = 0.463084 + 1.320050I$ $a = -1.47034 - 0.97801I$ $b = -3.91851 - 1.65445I$	$-9.03269 + 2.43239I$	0
$u = 0.463084 - 1.320050I$ $a = -1.47034 + 0.97801I$ $b = -3.91851 + 1.65445I$	$-9.03269 - 2.43239I$	0
$u = 0.520231 + 1.298750I$ $a = 1.84530 + 0.28310I$ $b = 4.74633 + 0.27848I$	$-8.59701 + 8.01455I$	0
$u = 0.520231 - 1.298750I$ $a = 1.84530 - 0.28310I$ $b = 4.74633 - 0.27848I$	$-8.59701 - 8.01455I$	0
$u = 0.581889 + 1.286040I$ $a = -1.72412 - 0.78764I$ $b = -4.59705 - 1.31483I$	$-11.9798 + 15.1518I$	0
$u = 0.581889 - 1.286040I$ $a = -1.72412 + 0.78764I$ $b = -4.59705 + 1.31483I$	$-11.9798 - 15.1518I$	0
$u = 0.55851 + 1.31422I$ $a = 1.055310 + 0.777623I$ $b = 2.64117 + 1.02259I$	$-14.2321 + 8.7482I$	0
$u = 0.55851 - 1.31422I$ $a = 1.055310 - 0.777623I$ $b = 2.64117 - 1.02259I$	$-14.2321 - 8.7482I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.38902 + 1.37780I$ $a = 1.64061 + 0.55483I$ $b = 4.47101 + 0.66773I$	$-13.4742 - 4.4404I$	0
$u = 0.38902 - 1.37780I$ $a = 1.64061 - 0.55483I$ $b = 4.47101 - 0.66773I$	$-13.4742 + 4.4404I$	0
$u = 0.44158 + 1.37511I$ $a = -1.169000 - 0.047468I$ $b = -3.16209 - 0.19464I$	$-15.1541 + 2.2033I$	0
$u = 0.44158 - 1.37511I$ $a = -1.169000 + 0.047468I$ $b = -3.16209 + 0.19464I$	$-15.1541 - 2.2033I$	0
$u = 0.342722 + 0.311153I$ $a = -1.206810 + 0.383647I$ $b = 0.526147 + 0.412647I$	$-1.48988 - 0.34469I$	$-6.13134 + 1.29951I$
$u = 0.342722 - 0.311153I$ $a = -1.206810 - 0.383647I$ $b = 0.526147 - 0.412647I$	$-1.48988 + 0.34469I$	$-6.13134 - 1.29951I$
$u = -0.096823 + 0.143742I$ $a = -4.23922 - 1.64875I$ $b = -0.980677 + 0.184228I$	$1.73915 - 0.71529I$	$3.95862 + 0.54158I$
$u = -0.096823 - 0.143742I$ $a = -4.23922 + 1.64875I$ $b = -0.980677 - 0.184228I$	$1.73915 + 0.71529I$	$3.95862 - 0.54158I$

II.

$$\boldsymbol{I_2^u = \langle a^4u + 5a^3u + \cdots - 3a + 1,\ a^6 - 4a^4u - 4a^4 + a^3 + 4a^2u + 1,\ u^2 + u + 1\rangle}$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 1 \\ u+1 \end{pmatrix}$$

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

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

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

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

$$a_9 = \begin{pmatrix} 0 \\ \frac{1}{3}a^4u - \frac{7}{3}a^3u + \cdots + \frac{7}{3}a^2 - \frac{5}{3} \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} 0 \\ \frac{1}{3}a^4u - \frac{7}{3}a^3u + \cdots + \frac{7}{3}a^2 - \frac{5}{3} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{2}{3}a^5u + \frac{7}{3}a^3u + \cdots + \frac{5}{3}a^2 + \frac{4}{3}a \\ -\frac{2}{3}a^5u + \frac{1}{3}a^4u + \cdots + \frac{4}{3}a - \frac{2}{3} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u \\ a^5 + a^4u - 3a^3u - 3a^3 + 5a^2 + 2au - u - 2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 5a^5u + 2a^5 + a^4u - 6a^3u + 9a^3 + 5a^2u + 6a^2 - 2au - 6a + 2u - 4$

(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_8	u^{12}
c_6	$(u^6 - 3u^5 + 5u^4 - 4u^3 + 2u^2 - u + 1)^2$
c_7, c_{12}	$(u^6 + u^5 - u^4 - 2u^3 + u + 1)^2$
c_9, c_{10}	$(u^6 - u^5 - u^4 + 2u^3 - u + 1)^2$
c_{11}	$(u^6 + 3u^5 + 5u^4 + 4u^3 + 2u^2 + u + 1)^2$

(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_8	y^{12}
c_6, c_{11}	$(y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1)^2$
c_7, 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_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.500000+0.866025I$ $a=\quad 0.984649+0.174545I$ $b=-0.036219-0.476146I$	$-7.72290I$	$0.57335+8.68103I$
$u=-0.500000+0.866025I$ $a=-0.643485-0.765459I$ $b=-0.69657-1.97490I$	$3.66314I$	$-3.68173-0.75872I$
$u=-0.500000+0.866025I$ $a=-0.532492-0.210196I$ $b=-0.171113-0.913331I$	$-1.89061-1.10558I$	$-7.73749+2.70506I$
$u=-0.500000+0.866025I$ $a=\quad 0.448281+0.356054I$ $b=-0.341341+0.317450I$	$-1.89061-2.95419I$	$-4.53097+3.97184I$
$u=-0.500000+0.866025I$ $a=-1.62479-0.64137I$ $b=-0.867745+0.078785I$	$1.89061-1.10558I$	$0.765607+0.616236I$
$u=-0.500000+0.866025I$ $a=\quad 1.36783+1.08642I$ $b=\quad 1.61298+2.10212I$	$1.89061-2.95419I$	$4.61123+3.83711I$
$u=-0.500000-0.866025I$ $a=-0.643485+0.765459I$ $b=-0.69657+1.97490I$	$7.72290I$	$0.57335-8.68103I$
$u=-0.500000-0.866025I$ $a=\quad 0.984649-0.174545I$ $b=-0.036219+0.476146I$	$-3.66314I$	$-3.68173+0.75872I$
$u=-0.500000-0.866025I$ $a=-0.532492+0.210196I$ $b=-0.171113+0.913331I$	$-1.89061+1.10558I$	$-7.73749-2.70506I$
$u=-0.500000-0.866025I$ $a=\quad 0.448281-0.356054I$ $b=-0.341341-0.317450I$	$-1.89061+2.95419I$	$-4.53097-3.97184I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.500000-0.866025I$ $a=-1.62479+0.64137I$ $b=-0.867745-0.078785I$	$1.89061+1.10558I$	$0.765607-0.616236I$
$u=-0.500000-0.866025I$ $a=\ \ 1.36783-1.08642I$ $b=\ \ 1.61298-2.10212I$	$1.89061+2.95419I$	$4.61123-3.83711I$

III. $\boldsymbol{I^u_3 = \langle -u^3 + u^2 + b - 1,\ u^4 - u^3 + 2u^2 + a,\ u^5 - u^4 + 2u^3 - u^2 + u - 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1$
c_2, c_5	$y^5 + 3y^4 + 4y^3 + y^2 - y - 1$
c_3, c_4, c_8	$y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1$
c_6	$y^5 - 9y^4 + 32y^3 - 35y^2 - 5y - 1$
c_7, c_{10}	y^5
c_9, c_{11}, c_{12}	$(y-1)^5$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.339110 + 0.822375I$ $a = 1.76766 + 0.21690I$ $b = 2.21033 + 0.28529I$	$1.31583 - 1.53058I$	$-1.50865 + 9.87103I$
$u = -0.339110 - 0.822375I$ $a = 1.76766 - 0.21690I$ $b = 2.21033 - 0.28529I$	$1.31583 + 1.53058I$	$-1.50865 - 9.87103I$
$u = 0.766826$ $a = -1.07090$ $b = 0.862888$	-0.756147	3.17260
$u = 0.455697 + 1.200150I$ $a = 0.267792 - 0.471915I$ $b = 0.35822 - 2.07480I$	$-4.22763 + 4.40083I$	$0.92237 - 5.80708I$
$u = 0.455697 - 1.200150I$ $a = 0.267792 + 0.471915I$ $b = 0.35822 + 2.07480I$	$-4.22763 - 4.40083I$	$0.92237 + 5.80708I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2-u+1)^6)(u^5-3u^4+\cdots-u+1)(u^{58}+36u^{57}+\cdots+38u+1)$
c_2	$((u^2+u+1)^6)(u^5-u^4+\cdots+u-1)(u^{58}+8u^{57}+\cdots+2u+1)$
c_3	$((u^2-u+1)^6)(u^5+u^4+\cdots+u-1)(u^{58}-8u^{57}+\cdots-10u+1)$
c_4	$u^{12}(u^5+u^4+\cdots+u-1)(u^{58}+2u^{57}+\cdots+22528u^2-4096)$
c_5	$((u^2-u+1)^6)(u^5+u^4+\cdots+u+1)(u^{58}+8u^{57}+\cdots+2u+1)$
c_6	$(u^5-5u^4+8u^3-3u^2-u-1)(u^6-3u^5+5u^4-4u^3+2u^2-u+1)^2$ $\cdot(u^{58}-4u^{57}+\cdots+2u-1)$
c_7	$u^5(u^6+u^5+\cdots+u+1)^2(u^{58}+3u^{57}+\cdots+96u+32)$
c_8	$u^{12}(u^5-u^4+\cdots+u+1)(u^{58}+2u^{57}+\cdots+22528u^2-4096)$
c_9	$((u+1)^5)(u^6-u^5+\cdots-u+1)^2(u^{58}+8u^{57}+\cdots-8u-1)$
c_{10}	$u^5(u^6-u^5+\cdots-u+1)^2(u^{58}+3u^{57}+\cdots+96u+32)$
c_{11}	$(u+1)^5(u^6+3u^5+5u^4+4u^3+2u^2+u+1)^2$ $\cdot(u^{58}-24u^{57}+\cdots+160u+1)$
c_{12}	$((u-1)^5)(u^6+u^5+\cdots+u+1)^2(u^{58}+8u^{57}+\cdots-8u-1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^2+y+1)^6(y^5-y^4+8y^3-3y^2+3y-1)$ $\cdot\,(y^{58}-20y^{57}+\cdots+1622y+1)$
c_2, c_5	$((y^2+y+1)^6)(y^5+3y^4+\cdots-y-1)(y^{58}+36y^{57}+\cdots+38y+1)$
c_3	$(y^2+y+1)^6(y^5-5y^4+8y^3-3y^2-y-1)$ $\cdot\,(y^{58}-76y^{57}+\cdots+38y+1)$
c_4, c_8	$y^{12}(y^5-5y^4+8y^3-3y^2-y-1)$ $\cdot\,(y^{58}-70y^{57}+\cdots-184549376y+16777216)$
c_6	$(y^5-9y^4+32y^3-35y^2-5y-1)(y^6+y^5+5y^4+6y^2+3y+1)^2$ $\cdot\,(y^{58}-76y^{57}+\cdots+34y+1)$
c_7, c_{10}	$y^5(y^6-3y^5+5y^4-4y^3+2y^2-y+1)^2$ $\cdot\,(y^{58}-39y^{57}+\cdots-11776y+1024)$
c_9, c_{12}	$(y-1)^5(y^6-3y^5+5y^4-4y^3+2y^2-y+1)^2$ $\cdot\,(y^{58}-24y^{57}+\cdots+160y+1)$
c_{11}	$(y-1)^5(y^6+y^5+5y^4+6y^2+3y+1)^2$ $\cdot\,(y^{58}+28y^{57}+\cdots-15092y+1)$