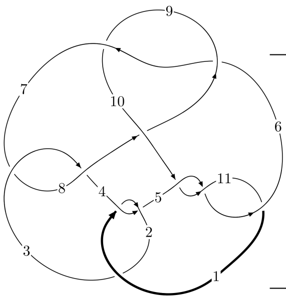
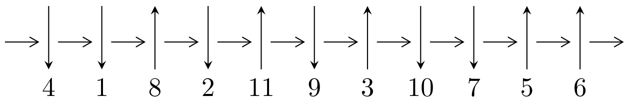
$11a_{47}$ $(K11a_{47})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

[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).

$$
\begin{aligned}
I_1^u = \langle & -213277415u^{18} - 194607955u^{17} + \cdots + 1851207634d + 1100791042,\\
& 18308047u^{18} + 11585164u^{17} + \cdots + 255338984c - 428406800,\\
& -340509075u^{18} - 461083130u^{17} + \cdots + 3702415268b + 2243928812,\\
& -1103288949u^{18} - 1383517078u^{17} + \cdots + 7404830536a + 9000488512,\\
& u^{19} + 2u^{18} + \cdots + 4u^2 - 8\rangle\\
I_2^u = \langle & -u^7a + 3u^6a + u^7 - 2u^5a - 2u^6 - 3u^4a + 7u^3a + 4u^4 - 6u^2a - 5u^3 + au + 2u^2 + d + 2a + 3u - 3,\\
& 2u^6a + 5u^7 - 2u^5a - 13u^6 - 2u^4a + 7u^5 + 6u^3a + 16u^4 - 4u^2a - 32u^3 + 25u^2 + 2c + 6a + u - 12,\\
& -u^7a + 2u^6a + 2u^7 - 4u^6 - 4u^4a + 2u^5 + 5u^3a + 5u^4 - u^2a - 9u^3 - 3au + 8u^2 + b + 2a - u,\\
& 3u^7a - 4u^7 + \cdots - 6a + 8,\ u^8 - 3u^7 + 3u^6 + 2u^5 - 8u^4 + 9u^3 - 3u^2 - 2u + 2\rangle\\
I_3^u = \langle & u^5 - u^3 + d + u,\ u^5 - 2u^3 + c + u,\ -u^4a - u^3a + u^4 + 2u^2a + u^3 + au + b - a - u,\\
& 2u^5a + 2u^4a - u^5 - 2u^3a - u^4 - 3u^2a + a^2 + u^2 + a,\ u^6 + u^5 - u^4 - 2u^3 + u + 1\rangle\\
I_4^u = \langle & -4u^5c + 2u^4c - u^5 + 12u^3c - 5u^4 + u^2c - 8u^3 - 7cu + 3u^2 + 11d - 10c + u + 3,\\
& -3u^5c + 2u^5 + 6u^3c - u^4 + 2u^2c - 5u^3 + c^2 - 5cu - u^2 - 2c + 4u,\ -u^2 + b,\ -u^2 + a + 1,\\
& u^6 + u^5 - u^4 - 2u^3 + u + 1\rangle\\
I_5^u = \langle & u^5 - u^3 + d + u,\ u^5 - 2u^3 + c + u,\ -u^2 + b,\ -u^2 + a + 1,\ u^6 + u^5 - u^4 - 2u^3 + u + 1\rangle
\end{aligned}
$$

$$
\begin{aligned}
I_1^v &= \langle a,\ d - 1,\ c - a - 1,\ b - 1,\ v + 1\rangle\\
I_2^v &= \langle a,\ d,\ c - 1,\ b + 1,\ v - 1\rangle\\
I_3^v &= \langle c,\ d - 1,\ b,\ a - 1,\ v - 1\rangle\\
I_4^v &= \langle c,\ d - 1,\ av + c + v - 1,\ bv + 1\rangle
\end{aligned}
$$

* 8 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 68 representations.
* 1 irreducible components of $\dim_{\mathbb{C}} = 1$

[2] All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I. $\boldsymbol{I_1^u = \langle -2.13 \times 10^8 u^{18} - 1.95 \times 10^8 u^{17} + \cdots + 1.85 \times 10^9 d + 1.10 \times 10^9,\ 1.83 \times 10^7 u^{18} + 1.16 \times 10^7 u^{17} + \cdots + 2.55 \times 10^8 c - 4.28 \times 10^8,\ -3.41 \times 10^8 u^{18} - 4.61 \times 10^8 u^{17} + \cdots + 3.70 \times 10^9 b + 2.24 \times 10^9,\ -1.10 \times 10^9 u^{18} - 1.38 \times 10^9 u^{17} + \cdots + 7.40 \times 10^9 a + 9.00 \times 10^9,\ u^{19} + 2u^{18} + \cdots + 4u^2 - 8 \rangle}$

(i) Arc colorings

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

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.0717009u^{18} - 0.0453717u^{17} + \cdots - 0.546899u + 1.67780 \\ 0.115210u^{18} + 0.105125u^{17} + \cdots + 0.279798u - 0.594634 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.148996u^{18} + 0.186840u^{17} + \cdots + 0.656789u - 1.21549 \\ 0.0919694u^{18} + 0.124536u^{17} + \cdots + 1.08046u - 0.606072 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.186911u^{18} - 0.150497u^{17} + \cdots - 0.826697u + 2.27243 \\ 0.115210u^{18} + 0.105125u^{17} + \cdots + 0.279798u - 0.594634 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.0237009u^{18} + 0.0450696u^{17} + \cdots + 0.0621551u - 0.293810 \\ 0.0895560u^{18} + 0.0824521u^{17} + \cdots + 1.48819u - 0.554949 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.0757590u^{18} - 0.0595485u^{17} + \cdots + 0.388792u + 1.08046 \\ 0.111152u^{18} + 0.0909481u^{17} + \cdots + 1.21549u - 1.19197 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.141825u^{18} + 0.139813u^{17} + \cdots + 0.240467u - 1.63929 \\ -0.00966290u^{18} + 0.0305921u^{17} + \cdots + 0.504689u + 0.0161009 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.0570264u^{18} - 0.0623040u^{17} + \cdots + 0.423674u + 0.609417 \\ 0.143944u^{18} + 0.132344u^{17} + \cdots + 1.53667u - 1.02006 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.0570264u^{18} - 0.0623040u^{17} + \cdots + 0.423674u + 0.609417 \\ 0.143944u^{18} + 0.132344u^{17} + \cdots + 1.53667u - 1.02006 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{1436975081}{1851207634}u^{18} - \frac{348795105}{1851207634}u^{17} + \cdots - \frac{4741127818}{925603817}u + \frac{7721567164}{925603817}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_6 c_9	$u^{19} - 2u^{18} + \cdots + 3u - 1$
c_2, c_8	$u^{19} + 8u^{18} + \cdots + 19u + 1$
c_3, c_7	$u^{19} + 2u^{18} + \cdots + 4u^2 - 8$
c_5, c_{10}, c_{11}	$u^{19} + 2u^{18} + \cdots - 8u - 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_6 c_9	$y^{19} - 8y^{18} + \cdots + 19y - 1$
c_2, c_8	$y^{19} + 12y^{18} + \cdots + 195y - 1$
c_3, c_7	$y^{19} - 6y^{18} + \cdots + 64y - 64$
c_5, c_{10}, c_{11}	$y^{19} - 18y^{18} + \cdots + 88y - 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.085440 + 0.040618I$ $a = -0.082939 - 0.820035I$ $b = -0.548223 - 0.458686I$ $c = -0.101745 + 0.706332I$ $d = -0.713652 - 0.621261I$	$2.40223 - 3.63220I$	$3.52732 + 6.81616I$
$u = -1.085440 - 0.040618I$ $a = -0.082939 + 0.820035I$ $b = -0.548223 + 0.458686I$ $c = -0.101745 - 0.706332I$ $d = -0.713652 + 0.621261I$	$2.40223 + 3.63220I$	$3.52732 - 6.81616I$
$u = -0.122471 + 1.080680I$ $a = 0.718026 + 0.002764I$ $b = 1.002700 + 0.800999I$ $c = 1.124430 + 0.436865I$ $d = 0.587370 + 0.660248I$	$4.14406 - 1.22871I$	$4.10945 + 3.37998I$
$u = -0.122471 - 1.080680I$ $a = 0.718026 - 0.002764I$ $b = 1.002700 - 0.800999I$ $c = 1.124430 - 0.436865I$ $d = 0.587370 - 0.660248I$	$4.14406 + 1.22871I$	$4.10945 - 3.37998I$
$u = 0.583709 + 0.932517I$ $a = 1.248640 - 0.243760I$ $b = 0.757420 - 1.122890I$ $c = 1.54158 + 0.36785I$ $d = 1.085300 + 0.470880I$	$-4.29720 - 4.85510I$	$-5.63265 + 5.33490I$
$u = 0.583709 - 0.932517I$ $a = 1.248640 + 0.243760I$ $b = 0.757420 + 1.122890I$ $c = 1.54158 - 0.36785I$ $d = 1.085300 - 0.470880I$	$-4.29720 + 4.85510I$	$-5.63265 - 5.33490I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.628638 + 1.123100I$ $a = -1.232770 - 0.120292I$ $b = -1.30952 - 1.42851I$ $c = 1.55750 - 0.46383I$ $d = 1.118990 - 0.584861I$	$0.71510 + 8.68076I$	$-0.47305 - 6.48182I$
$u = -0.628638 - 1.123100I$ $a = -1.232770 + 0.120292I$ $b = -1.30952 + 1.42851I$ $c = 1.55750 + 0.46383I$ $d = 1.118990 + 0.584861I$	$0.71510 - 8.68076I$	$-0.47305 + 6.48182I$
$u = 1.114960 + 0.705316I$ $a = 0.111878 - 1.272940I$ $b = -1.46155 - 1.34018I$ $c = -1.62042 - 1.03068I$ $d = -1.163710 + 0.575900I$	$-2.61225 + 10.89710I$	$-3.23641 - 8.50579I$
$u = 1.114960 - 0.705316I$ $a = 0.111878 + 1.272940I$ $b = -1.46155 + 1.34018I$ $c = -1.62042 + 1.03068I$ $d = -1.163710 - 0.575900I$	$-2.61225 - 10.89710I$	$-3.23641 + 8.50579I$
$u = -0.072034 + 0.667244I$ $a = -0.502161 - 0.640166I$ $b = -0.246691 + 0.049771I$ $c = 1.286910 - 0.134822I$ $d = 0.710407 - 0.203370I$	$-1.32552 + 1.22673I$	$-3.58366 - 5.47914I$
$u = -0.072034 - 0.667244I$ $a = -0.502161 + 0.640166I$ $b = -0.246691 - 0.049771I$ $c = 1.286910 + 0.134822I$ $d = 0.710407 + 0.203370I$	$-1.32552 - 1.22673I$	$-3.58366 + 5.47914I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.241950 + 0.516338I$ $a = 0.276604 + 0.673540I$ $b = -1.46152 + 0.68811I$ $c = 0.128975 + 0.165024I$ $d = -0.379493 + 0.913957I$	$7.80660 - 4.21764I$	$6.24313 + 1.77538I$
$u = -1.241950 - 0.516338I$ $a = 0.276604 - 0.673540I$ $b = -1.46152 - 0.68811I$ $c = 0.128975 - 0.165024I$ $d = -0.379493 - 0.913957I$	$7.80660 + 4.21764I$	$6.24313 - 1.77538I$
$u = 1.391220 + 0.215371I$ $a = -0.043768 - 1.017560I$ $b = -0.031342 + 0.273386I$ $c = -0.726247 - 0.431148I$ $d = -0.892218 + 0.798617I$	$9.74824 + 5.99256I$	$5.35093 - 5.49640I$
$u = 1.391220 - 0.215371I$ $a = -0.043768 + 1.017560I$ $b = -0.031342 - 0.273386I$ $c = -0.726247 + 0.431148I$ $d = -0.892218 - 0.798617I$	$9.74824 - 5.99256I$	$5.35093 + 5.49640I$
$u = -1.18800 + 0.79635I$ $a = -0.064734 - 1.301180I$ $b = 1.97753 - 1.24306I$ $c = -1.73926 + 0.83388I$ $d = -1.219920 - 0.612443I$	$2.5538 - 15.5977I$	$0.09598 + 9.40344I$
$u = -1.18800 - 0.79635I$ $a = -0.064734 + 1.301180I$ $b = 1.97753 + 1.24306I$ $c = -1.73926 - 0.83388I$ $d = -1.219920 + 0.612443I$	$2.5538 + 15.5977I$	$0.09598 - 9.40344I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.497291$		
$a = 0.142445$		
$b = 0.642422$	1.20822	9.19790
$c = 1.09653$		
$d = -0.266152$		

II. $\boldsymbol{I^u_2 = \langle -u^7a + u^7 + \cdots + 2a - 3,\ 2u^6a + 5u^7 + \cdots + 6a - 12,\ -u^7a + 2u^7 + \cdots + b + 2a,\ 3u^7a - 4u^7 + \cdots - 6a + 8,\ u^8 - 3u^7 + \cdots - 2u + 2\rangle}$

(i) Arc colorings

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

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^6a - \frac{5}{2}u^7 + \cdots - 3a + 6 \\ u^7a - u^7 + \cdots - 2a + 3 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} a \\ u^7a - 2u^7 + \cdots - 2a + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^7a - \frac{3}{2}u^7 + \cdots - a + 3 \\ u^7a - u^7 + \cdots - 2a + 3 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^6a + 2u^7 + \cdots + 3a - 4 \\ -u^7a + 3u^6a + \cdots + 2a - 2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^7a - \frac{3}{2}u^7 + \cdots - a + \frac{5}{2}u \\ -u^6 + u^5 + u^4 - 3u^3 + au + 2u^2 - 3 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} \frac{1}{2}u^7 - \frac{3}{2}u^6 + \cdots + 2a - 1 \\ -u^7 + 2u^6 + \cdots + 2u - 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^7a - 2u^7 + \cdots - 3a + u \\ u^7a - u^6a + \cdots + u - 4 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^7a - 2u^7 + \cdots - 3a + u \\ u^7a - u^6a + \cdots + u - 4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2u^7 + 4u^5 - 6u^4 - 4u^3 + 6u^2 - 8u - 4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_6 c_9	$u^{16} - u^{15} + \cdots + 4u - 4$
c_2, c_8	$u^{16} + 7u^{15} + \cdots + 40u + 16$
c_3, c_7	$(u^8 - 3u^7 + 3u^6 + 2u^5 - 8u^4 + 9u^3 - 3u^2 - 2u + 2)^2$
c_5, c_{10}, c_{11}	$(u^8 + u^7 - 4u^6 - 3u^5 + 5u^4 + u^3 - u^2 + 3u - 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_6 c_9	$y^{16} - 7y^{15} + \cdots - 40y + 16$
c_2, c_8	$y^{16} + y^{15} + \cdots - 544y + 256$
c_3, c_7	$(y^8 - 3y^7 + 5y^6 - 4y^5 + 2y^4 - 13y^3 + 13y^2 - 16y + 4)^2$
c_5, c_{10}, c_{11}	$(y^8 - 9y^7 + 32y^6 - 53y^5 + 31y^4 + 15y^3 - 15y^2 - 7y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.821613 + 0.567011I$ $a = 0.327841 - 1.281680I$ $b = -0.32411 - 2.07852I$ $c = 1.67002 + 0.21655I$ $d = 1.227620 + 0.270214I$	$-4.77492 + 2.26376I$	$-6.05872 - 4.53378I$
$u = 0.821613 + 0.567011I$ $a = 1.55977 - 0.26895I$ $b = -0.408126 - 1.151440I$ $c = -1.53003 - 1.99355I$ $d = -1.076280 + 0.402850I$	$-4.77492 + 2.26376I$	$-6.05872 - 4.53378I$
$u = 0.821613 - 0.567011I$ $a = 0.327841 + 1.281680I$ $b = -0.32411 + 2.07852I$ $c = 1.67002 - 0.21655I$ $d = 1.227620 - 0.270214I$	$-4.77492 - 2.26376I$	$-6.05872 + 4.53378I$
$u = 0.821613 - 0.567011I$ $a = 1.55977 + 0.26895I$ $b = -0.408126 + 1.151440I$ $c = -1.53003 + 1.99355I$ $d = -1.076280 - 0.402850I$	$-4.77492 - 2.26376I$	$-6.05872 + 4.53378I$
$u = 0.432344 + 1.079150I$ $a = 1.115680 - 0.168353I$ $b = 1.27697 - 0.76242I$ $c = 0.918952 - 0.461716I$ $d = 0.365525 - 0.776365I$	$2.93531 - 3.55755I$	$2.52739 + 2.62489I$
$u = 0.432344 + 1.079150I$ $a = -0.603271 + 0.193035I$ $b = -0.50994 + 1.48491I$ $c = 1.45767 + 0.43671I$ $d = 0.993914 + 0.569061I$	$2.93531 - 3.55755I$	$2.52739 + 2.62489I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.432344 - 1.079150I$ $a = 1.115680 + 0.168353I$ $b = 1.27697 + 0.76242I$ $c = 0.918952 + 0.461716I$ $d = 0.365525 + 0.776365I$	$2.93531 + 3.55755I$	$2.52739 - 2.62489I$
$u = 0.432344 - 1.079150I$ $a = -0.603271 - 0.193035I$ $b = -0.50994 - 1.48491I$ $c = 1.45767 - 0.43671I$ $d = 0.993914 - 0.569061I$	$2.93531 + 3.55755I$	$2.52739 - 2.62489I$
$u = -1.38845$ $a = 0.099908 + 0.914602I$ $b = -0.636148 - 0.242515I$ $c = -0.435105 + 0.253742I$ $d = -0.754559 - 0.841472I$	10.1546	6.33750
$u = -1.38845$ $a = 0.099908 - 0.914602I$ $b = -0.636148 + 0.242515I$ $c = -0.435105 - 0.253742I$ $d = -0.754559 + 0.841472I$	10.1546	6.33750
$u = 1.215250 + 0.684012I$ $a = 0.067480 - 1.248660I$ $b = -1.57665 - 0.90527I$ $c = 0.226769 - 0.309183I$ $d = -0.270006 - 0.967768I$	$5.44991 + 9.88301I$	$3.28252 - 6.06963I$
$u = 1.215250 + 0.684012I$ $a = -0.355893 + 0.630356I$ $b = 1.56027 + 1.09581I$ $c = -1.52513 - 0.84692I$ $d = -1.157570 + 0.635502I$	$5.44991 + 9.88301I$	$3.28252 - 6.06963I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.215250 - 0.684012I$ $a = 0.067480 + 1.248660I$ $b = -1.57665 + 0.90527I$ $c = 0.226769 + 0.309183I$ $d = -0.270006 + 0.967768I$	$5.44991 - 9.88301I$	$3.28252 + 6.06963I$
$u = 1.215250 - 0.684012I$ $a = -0.355893 - 0.630356I$ $b = 1.56027 - 1.09581I$ $c = -1.52513 + 0.84692I$ $d = -1.157570 - 0.635502I$	$5.44991 - 9.88301I$	$3.28252 + 6.06963I$
$u = -0.549965$ $a = -1.11644$ $b = -2.20354$ $c = 1.59660$ $d = 1.12630$	-2.57083	2.16010
$u = -0.549965$ $a = -2.30659$ $b = 0.439006$ $c = 3.83712$ $d = -0.783583$	-2.57083	2.16010

III. $I_3^u = \langle u^5 - u^3 + d + u,\ u^5 - 2u^3 + c + u,\ -u^4a + u^4 + \cdots + b - a,\ 2u^5a - u^5 + \cdots + a^2 + a,\ u^6 + u^5 - u^4 - 2u^3 + u + 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.002190 + 0.295542I$ $a = 0.228720 - 1.004780I$ $b = 0.103539 - 0.942817I$ $c = 0.315740 + 0.200172I$ $d = -0.428243 - 0.664531I$	$1.89061 + 0.92430I$	$3.71672 - 0.79423I$
$u = 1.002190 + 0.295542I$ $a = 1.69020 - 0.12901I$ $b = -1.18901 - 0.78206I$ $c = 0.315740 + 0.200172I$ $d = -0.428243 - 0.664531I$	$1.89061 + 0.92430I$	$3.71672 - 0.79423I$
$u = 1.002190 - 0.295542I$ $a = 0.228720 + 1.004780I$ $b = 0.103539 + 0.942817I$ $c = 0.315740 - 0.200172I$ $d = -0.428243 + 0.664531I$	$1.89061 - 0.92430I$	$3.71672 + 0.79423I$
$u = 1.002190 - 0.295542I$ $a = 1.69020 + 0.12901I$ $b = -1.18901 + 0.78206I$ $c = 0.315740 - 0.200172I$ $d = -0.428243 + 0.664531I$	$1.89061 - 0.92430I$	$3.71672 + 0.79423I$
$u = -0.428243 + 0.664531I$ $a = 0.305248 + 0.125739I$ $b = -0.101098 + 0.828455I$ $c = 1.49099 - 0.22339I$ $d = 1.002190 - 0.295542I$	$-1.89061 + 0.92430I$	$-3.71672 - 0.79423I$
$u = -0.428243 + 0.664531I$ $a = -0.41743 - 1.68310I$ $b = -0.15460 - 3.71488I$ $c = 1.49099 - 0.22339I$ $d = 1.002190 - 0.295542I$	$-1.89061 + 0.92430I$	$-3.71672 - 0.79423I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.428243 - 0.664531I$ $a = 0.305248 - 0.125739I$ $b = -0.101098 - 0.828455I$ $c = 1.49099 + 0.22339I$ $d = 1.002190 + 0.295542I$	$-1.89061 - 0.92430I$	$-3.71672 + 0.79423I$
$u = -0.428243 - 0.664531I$ $a = -0.41743 + 1.68310I$ $b = -0.15460 + 3.71488I$ $c = 1.49099 + 0.22339I$ $d = 1.002190 + 0.295542I$	$-1.89061 - 0.92430I$	$-3.71672 + 0.79423I$
$u = -1.073950 + 0.558752I$ $a = 0.266694 + 0.574266I$ $b = -1.16959 + 0.91104I$ $c = -1.30674 + 1.20014I$ $d = -1.073950 - 0.558752I$	$-5.69302I$	$0. + 5.51057I$
$u = -1.073950 + 0.558752I$ $a = -1.57343 - 0.13663I$ $b = 1.01075 - 1.59090I$ $c = -1.30674 + 1.20014I$ $d = -1.073950 - 0.558752I$	$-5.69302I$	$0. + 5.51057I$
$u = -1.073950 - 0.558752I$ $a = 0.266694 - 0.574266I$ $b = -1.16959 - 0.91104I$ $c = -1.30674 - 1.20014I$ $d = -1.073950 + 0.558752I$	$5.69302I$	$0. - 5.51057I$
$u = -1.073950 - 0.558752I$ $a = -1.57343 + 0.13663I$ $b = 1.01075 + 1.59090I$ $c = -1.30674 - 1.20014I$ $d = -1.073950 + 0.558752I$	$5.69302I$	$0. - 5.51057I$

IV. $I_4^u = \langle -4u^5c - u^5 + \cdots - 10c + 3,\ -3u^5c + 2u^5 + \cdots + c^2 - 2c,\ -u^2 + b,\ -u^2 + a + 1,\ u^6 + u^5 - u^4 - 2u^3 + u + 1\rangle$

(i) Arc colorings

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

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} c \\ 0.363636cu^5 + 0.0909091u^5 + \cdots + 0.909091c - 0.272727 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^2 - 1 \\ u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.363636cu^5 - 0.0909091u^5 + \cdots + 0.0909091c + 0.272727 \\ 0.363636cu^5 + 0.0909091u^5 + \cdots + 0.909091c - 0.272727 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^5 - 2u^3 + u \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.909091cu^5 + 0.272727u^5 + \cdots - 0.272727c + 0.181818 \\ -0.545455cu^5 + 0.363636u^5 + \cdots - 0.363636c - 0.0909091 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -c \\ -0.363636cu^5 - 0.0909091u^5 + \cdots - 0.909091c + 0.272727 \end{pmatrix}$$

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

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

(ii) Obstruction class $= -1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.002190 + 0.295542I$ $a = -0.082955 + 0.592379I$ $b = 0.917045 + 0.592379I$ $c = -0.529240 - 1.308250I$ $d = -0.895235 + 0.524661I$	$1.89061 + 0.92430I$	$3.71672 - 0.79423I$
$u = 1.002190 + 0.295542I$ $a = -0.082955 + 0.592379I$ $b = 0.917045 + 0.592379I$ $c = 1.75231 + 0.11405I$ $d = 1.323480 + 0.139870I$	$1.89061 + 0.92430I$	$3.71672 - 0.79423I$
$u = 1.002190 - 0.295542I$ $a = -0.082955 - 0.592379I$ $b = 0.917045 - 0.592379I$ $c = -0.529240 + 1.308250I$ $d = -0.895235 - 0.524661I$	$1.89061 - 0.92430I$	$3.71672 + 0.79423I$
$u = 1.002190 - 0.295542I$ $a = -0.082955 - 0.592379I$ $b = 0.917045 - 0.592379I$ $c = 1.75231 - 0.11405I$ $d = 1.323480 - 0.139870I$	$1.89061 - 0.92430I$	$3.71672 + 0.79423I$
$u = -0.428243 + 0.664531I$ $a = -1.258210 - 0.569162I$ $b = -0.258209 - 0.569162I$ $c = 0.888685 + 0.176317I$ $d = 0.152828 + 0.487477I$	$-1.89061 + 0.92430I$	$-3.71672 - 0.79423I$
$u = -0.428243 + 0.664531I$ $a = -1.258210 - 0.569162I$ $b = -0.258209 - 0.569162I$ $c = -3.70174 + 2.96124I$ $d = -1.155020 - 0.191936I$	$-1.89061 + 0.92430I$	$-3.71672 - 0.79423I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.428243-0.664531I$ $a=-1.258210+0.569162I$ $b=-0.258209+0.569162I$ $c=\ \ 0.888685-0.176317I$ $d=\ \ 0.152828-0.487477I$	$-1.89061-0.92430I$	$-3.71672+0.79423I$
$u=-0.428243-0.664531I$ $a=-1.258210+0.569162I$ $b=-0.258209+0.569162I$ $c=-3.70174-2.96124I$ $d=-1.155020+0.191936I$	$-1.89061-0.92430I$	$-3.71672+0.79423I$
$u=-1.073950+0.558752I$ $a=-0.158836-1.200140I$ $b=\ \ 0.84116-1.20014I$ $c=\ \ 0.314939+0.139392I$ $d=-0.282166+0.828798I$	$-\,5.69302I$	$0.+5.51057I$
$u=-1.073950+0.558752I$ $a=-0.158836-1.200140I$ $b=\ \ 0.84116-1.20014I$ $c=\ \ 1.77504-0.22203I$ $d=\ \ 1.356120-0.270046I$	$-\,5.69302I$	$0.+5.51057I$
$u=-1.073950-0.558752I$ $a=-0.158836+1.200140I$ $b=\ \ 0.84116+1.20014I$ $c=\ \ 0.314939-0.139392I$ $d=-0.282166-0.828798I$	$5.69302I$	$0.-5.51057I$
$u=-1.073950-0.558752I$ $a=-0.158836+1.200140I$ $b=\ \ 0.84116+1.20014I$ $c=\ \ 1.77504+0.22203I$ $d=\ \ 1.356120+0.270046I$	$5.69302I$	$0.-5.51057I$

V. I^u_5 =
$\langle u^5-u^3+d+u,\ u^5-2u^3+c+u,\ -u^2+b,\ -u^2+a+1,\ u^6+u^5-u^4-2u^3+u+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.002190 + 0.295542I$ $a = -0.082955 + 0.592379I$ $b = 0.917045 + 0.592379I$ $c = 0.315740 + 0.200172I$ $d = -0.428243 - 0.664531I$	$1.89061 + 0.92430I$	$3.71672 - 0.79423I$
$u = 1.002190 - 0.295542I$ $a = -0.082955 - 0.592379I$ $b = 0.917045 - 0.592379I$ $c = 0.315740 - 0.200172I$ $d = -0.428243 + 0.664531I$	$1.89061 - 0.92430I$	$3.71672 + 0.79423I$
$u = -0.428243 + 0.664531I$ $a = -1.258210 - 0.569162I$ $b = -0.258209 - 0.569162I$ $c = 1.49099 - 0.22339I$ $d = 1.002190 - 0.295542I$	$-1.89061 + 0.92430I$	$-3.71672 - 0.79423I$
$u = -0.428243 - 0.664531I$ $a = -1.258210 + 0.569162I$ $b = -0.258209 + 0.569162I$ $c = 1.49099 + 0.22339I$ $d = 1.002190 + 0.295542I$	$-1.89061 - 0.92430I$	$-3.71672 + 0.79423I$
$u = -1.073950 + 0.558752I$ $a = -0.158836 - 1.200140I$ $b = 0.84116 - 1.20014I$ $c = -1.30674 + 1.20014I$ $d = -1.073950 - 0.558752I$	$-5.69302I$	$0. + 5.51057I$
$u = -1.073950 - 0.558752I$ $a = -0.158836 + 1.200140I$ $b = 0.84116 + 1.20014I$ $c = -1.30674 - 1.20014I$ $d = -1.073950 + 0.558752I$	$5.69302I$	$0. - 5.51057I$

VI. $I_1^v = \langle a,\ d-1,\ c-a-1,\ b-1,\ v+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = -1.00000$ $a = 0$ $b = 1.00000$ $c = 1.00000$ $d = 1.00000$	-3.28987	-12.0000

VII. $I_2^v = \langle a,\ d,\ c-1,\ b+1,\ v-1 \rangle$

(i) Arc colorings

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

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_1 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 1.00000$		
$a = 0$		
$b = -1.00000$	0	0
$c = 1.00000$		
$d = 0$		

VIII. $I_3^v = \langle c,\ d-1,\ b,\ a-1,\ v-1 \rangle$

(i) Arc colorings

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

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

$$a_{11} = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^v		$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$v =$	1.00000		
$a =$	1.00000		
$b =$	0	0	0
$c =$	0		
$d =$	1.00000		

IX. $I_4^v = \langle c,\ d-1,\ av+c+v-1,\ bv+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -a^2 - v^2 - 2a - 5$

(iv) u-Polynomials at the component : It cannot be defined for a positive dimension component.

(v) Riley Polynomials at the component : It cannot be defined for a positive dimension component.

(iv) Complex Volumes and Cusp Shapes

Solution to I_4^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = \cdots$		
$a = \cdots$		
$b = \cdots$	-1.64493	$-3.92396 - 0.35058I$
$c = \cdots$		
$d = \cdots$		

X. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_6	$u(u-1)^2(u^6-u^5-u^4+2u^3-u+1)^3$ $\cdot(u^{12}+u^{11}-4u^{10}-2u^9+7u^8-u^7-5u^6+5u^5-u^4-3u^3+2u^2+1)$ $\cdot(u^{16}-u^{15}+\cdots+4u-4)(u^{19}-2u^{18}+\cdots+3u-1)$
c_2	$u(u+1)^2(u^6+3u^5+5u^4+4u^3+2u^2+u+1)^3$ $\cdot(u^{12}+9u^{11}+\cdots-4u+1)(u^{16}+7u^{15}+\cdots+40u+16)$ $\cdot(u^{19}+8u^{18}+\cdots+19u+1)$
c_3, c_7	$u^3(u^6+u^5-u^4-2u^3+u+1)^5$ $\cdot(u^8-3u^7+3u^6+2u^5-8u^4+9u^3-3u^2-2u+2)^2$ $\cdot(u^{19}+2u^{18}+\cdots+4u^2-8)$
c_4, c_9	$u(u+1)^2(u^6-u^5-u^4+2u^3-u+1)^3$ $\cdot(u^{12}+u^{11}-4u^{10}-2u^9+7u^8-u^7-5u^6+5u^5-u^4-3u^3+2u^2+1)$ $\cdot(u^{16}-u^{15}+\cdots+4u-4)(u^{19}-2u^{18}+\cdots+3u-1)$
c_5, c_{10}, c_{11}	$u(u-1)(u+1)(u^6-u^5-u^4+2u^3-u+1)$ $\cdot(u^8+u^7-4u^6-3u^5+5u^4+u^3-u^2+3u-1)^2$ $\cdot(u^{12}+u^{11}-4u^{10}-2u^9+7u^8-u^7-5u^6+5u^5-u^4-3u^3+2u^2+1)^2$ $\cdot(u^{19}+2u^{18}+\cdots-8u-4)$
c_8	$u(u-1)^2(u^6+3u^5+5u^4+4u^3+2u^2+u+1)^3$ $\cdot(u^{12}+9u^{11}+\cdots-4u+1)(u^{16}+7u^{15}+\cdots+40u+16)$ $\cdot(u^{19}+8u^{18}+\cdots+19u+1)$

XI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_6 c_9	$y(y-1)^2(y^6-3y^5+5y^4-4y^3+2y^2-y+1)^3$ $\cdot(y^{12}-9y^{11}+\cdots+4y+1)(y^{16}-7y^{15}+\cdots-40y+16)$ $\cdot(y^{19}-8y^{18}+\cdots+19y-1)$
c_2, c_8	$y(y-1)^2(y^6+y^5+5y^4+6y^2+3y+1)^3$ $\cdot(y^{12}-13y^{11}+\cdots-12y+1)(y^{16}+y^{15}+\cdots-544y+256)$ $\cdot(y^{19}+12y^{18}+\cdots+195y-1)$
c_3, c_7	$y^3(y^6-3y^5+5y^4-4y^3+2y^2-y+1)^5$ $\cdot(y^8-3y^7+5y^6-4y^5+2y^4-13y^3+13y^2-16y+4)^2$ $\cdot(y^{19}-6y^{18}+\cdots+64y-64)$
c_5, c_{10}, c_{11}	$y(y-1)^2(y^6-3y^5+5y^4-4y^3+2y^2-y+1)$ $\cdot(y^8-9y^7+32y^6-53y^5+31y^4+15y^3-15y^2-7y+1)^2$ $\cdot((y^{12}-9y^{11}+\cdots+4y+1)^2)(y^{19}-18y^{18}+\cdots+88y-16)$