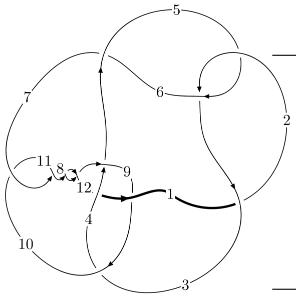
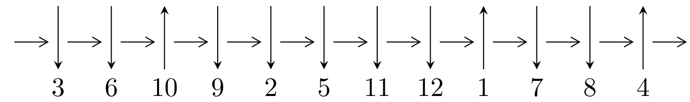
$12a_{0440}$ $(K12a_{0440})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 8.17973 \times 10^{78} u^{78} - 3.32534 \times 10^{79} u^{77} + \cdots + 1.08264 \times 10^{78} b + 1.17493 \times 10^{79},$$
$$7.38204 \times 10^{76} u^{78} + 1.20719 \times 10^{79} u^{77} + \cdots + 2.16527 \times 10^{78} a - 2.53946 \times 10^{79},\ u^{79} - 5u^{78} + \cdots + 9u - 1$$
$$I_2^u = \langle b,\ a^3 + a^2 + 2a + 1,\ u - 1\rangle$$
$$I_3^u = \langle b + u,\ a + u + 1,\ u^2 + u - 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 84 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.

$\boldsymbol{I_1^u = \langle 8.18\times 10^{78}u^{78} - 3.33\times 10^{79}u^{77} + \cdots + 1.08\times 10^{78}b + 1.17\times 10^{79},\ 7.38\times 10^{76}u^{78} + 1.21\times 10^{79}u^{77} + \cdots + 2.17\times 10^{78}a - 2.54\times 10^{79},\ u^{79} - 5u^{78} + \cdots + 9u - 1\rangle}$

(i) Arc colorings

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

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

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

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

$$a_4 = \begin{pmatrix} -0.0340929u^{78} - 5.57525u^{77} + \cdots - 79.3261u + 11.7282 \\ -7.55538u^{78} + 30.7152u^{77} + \cdots + 80.5660u - 10.8525 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 8.72790u^{78} - 40.8993u^{77} + \cdots - 174.062u + 24.6495 \\ -7.44447u^{78} + 31.6128u^{77} + \cdots + 76.5696u - 9.71049 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -10.5701u^{78} + 37.8812u^{77} + \cdots + 73.4125u - 11.9931 \\ -7.43744u^{78} + 25.5627u^{77} + \cdots + 41.0173u - 4.39937 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 4.78292u^{78} - 22.0655u^{77} + \cdots - 38.3048u + 4.25699 \\ -1.06013u^{78} + 0.567165u^{77} + \cdots - 17.7043u + 2.68876 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -0.513025u^{78} - 2.90158u^{77} + \cdots - 83.6483u + 13.0441 \\ -8.03431u^{78} + 33.3889u^{77} + \cdots + 76.2438u - 9.53651 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -11.7439u^{78} + 49.5318u^{77} + \cdots + 111.423u - 15.7495 \\ -2.05455u^{78} + 9.78315u^{77} + \cdots + 32.7790u - 3.84880 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 80.7160u^{78} - 362.186u^{77} + \cdots - 1054.12u + 134.511$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{79} + 26u^{78} + \cdots + 39u + 1$
c_2, c_5	$u^{79} + 4u^{78} + \cdots - 13u - 1$
c_3	$u^{79} + u^{78} + \cdots - 1072u + 71$
c_4	$u^{79} + 3u^{78} + \cdots + 108u + 43$
c_7, c_8, c_{10} c_{11}	$u^{79} + 5u^{78} + \cdots + 9u + 1$
c_9	$u^{79} - 4u^{78} + \cdots - 16u + 4$
c_{12}	$u^{79} + 7u^{78} + \cdots + 20u - 8$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{79} + 58y^{78} + \cdots - 337y - 1$
c_2, c_5	$y^{79} - 26y^{78} + \cdots + 39y - 1$
c_3	$y^{79} - 75y^{78} + \cdots + 614980y - 5041$
c_4	$y^{79} - 87y^{78} + \cdots + 1126052y - 1849$
c_7, c_8, c_{10} c_{11}	$y^{79} - 93y^{78} + \cdots + 81y - 1$
c_9	$y^{79} - 18y^{78} + \cdots + 488y - 16$
c_{12}	$y^{79} + 19y^{78} + \cdots + 720y - 64$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.866803 + 0.533665I$ $a = -0.0297098 - 0.0022778I$ $b = -0.441116 - 0.602987I$	$-4.07309 - 0.36413I$	0
$u = 0.866803 - 0.533665I$ $a = -0.0297098 + 0.0022778I$ $b = -0.441116 + 0.602987I$	$-4.07309 + 0.36413I$	0
$u = -0.788989 + 0.582780I$ $a = 0.187892 - 0.000787I$ $b = -0.17742 - 1.57226I$	$2.77854 + 7.24987I$	0
$u = -0.788989 - 0.582780I$ $a = 0.187892 + 0.000787I$ $b = -0.17742 + 1.57226I$	$2.77854 - 7.24987I$	0
$u = -0.826444 + 0.598529I$ $a = -0.161790 - 0.057817I$ $b = 0.10767 + 1.55410I$	$1.83680 + 13.25190I$	0
$u = -0.826444 - 0.598529I$ $a = -0.161790 + 0.057817I$ $b = 0.10767 - 1.55410I$	$1.83680 - 13.25190I$	0
$u = -0.853346 + 0.449925I$ $a = 0.0578767 + 0.0709751I$ $b = 0.263441 + 1.345450I$	$-4.45438 + 7.50984I$	0
$u = -0.853346 - 0.449925I$ $a = 0.0578767 - 0.0709751I$ $b = 0.263441 - 1.345450I$	$-4.45438 - 7.50984I$	0
$u = 0.636803 + 0.681178I$ $a = -0.205565 - 0.221493I$ $b = -0.155312 - 0.659709I$	$-0.43638 - 4.87894I$	0
$u = 0.636803 - 0.681178I$ $a = -0.205565 + 0.221493I$ $b = -0.155312 + 0.659709I$	$-0.43638 + 4.87894I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.17006$ $a = -0.220626$ $b = 0.350149$	-2.29502	0
$u = 0.514546 + 0.651061I$ $a = 0.226947 + 0.377376I$ $b = 0.077277 + 0.523891I$	$-0.067693 + 0.265761I$	0
$u = 0.514546 - 0.651061I$ $a = 0.226947 - 0.377376I$ $b = 0.077277 - 0.523891I$	$-0.067693 - 0.265761I$	0
$u = -0.114852 + 0.812432I$ $a = 1.029070 + 0.541721I$ $b = -0.410388 - 0.393922I$	$3.99517 - 8.58385I$	0
$u = -0.114852 - 0.812432I$ $a = 1.029070 - 0.541721I$ $b = -0.410388 + 0.393922I$	$3.99517 + 8.58385I$	0
$u = -0.718534 + 0.395646I$ $a = 0.034558 - 0.356407I$ $b = -0.42088 - 1.46065I$	$-0.60334 + 4.40814I$	0
$u = -0.718534 - 0.395646I$ $a = 0.034558 + 0.356407I$ $b = -0.42088 + 1.46065I$	$-0.60334 - 4.40814I$	0
$u = -0.151437 + 0.772666I$ $a = -1.080720 - 0.571184I$ $b = 0.325154 + 0.460637I$	$4.71159 - 2.74858I$	0
$u = -0.151437 - 0.772666I$ $a = -1.080720 + 0.571184I$ $b = 0.325154 - 0.460637I$	$4.71159 + 2.74858I$	0
$u = -0.747171 + 0.215526I$ $a = 0.399822 + 0.577326I$ $b = 0.62169 + 1.40665I$	$-3.74765 + 0.59468I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.747171 - 0.215526I$ $a = 0.399822 - 0.577326I$ $b = 0.62169 - 1.40665I$	$-3.74765 - 0.59468I$	0
$u = 1.120250 + 0.498783I$ $a = -0.004779 + 0.192620I$ $b = -0.730479 - 0.456211I$	$0.26087 + 4.05570I$	0
$u = 1.120250 - 0.498783I$ $a = -0.004779 - 0.192620I$ $b = -0.730479 + 0.456211I$	$0.26087 - 4.05570I$	0
$u = 1.157870 + 0.428882I$ $a = -0.048722 - 0.212728I$ $b = 0.715991 + 0.330451I$	$0.72655 - 1.44588I$	0
$u = 1.157870 - 0.428882I$ $a = -0.048722 + 0.212728I$ $b = 0.715991 - 0.330451I$	$0.72655 + 1.44588I$	0
$u = -0.620939 + 0.363470I$ $a = 1.64470 + 0.21723I$ $b = 0.740983 - 1.001040I$	$2.97369 + 6.23589I$	$-6.00000 - 9.23175I$
$u = -0.620939 - 0.363470I$ $a = 1.64470 - 0.21723I$ $b = 0.740983 + 1.001040I$	$2.97369 - 6.23589I$	$-6.00000 + 9.23175I$
$u = 0.052448 + 0.681727I$ $a = 0.825797 + 0.735148I$ $b = -0.171743 - 0.089114I$	$-1.71576 - 3.77103I$	$-9.94460 + 7.06655I$
$u = 0.052448 - 0.681727I$ $a = 0.825797 - 0.735148I$ $b = -0.171743 + 0.089114I$	$-1.71576 + 3.77103I$	$-9.94460 - 7.06655I$
$u = 0.654189 + 0.184431I$ $a = -0.538618 - 0.070989I$ $b = 0.391553 + 0.549679I$	$-1.260360 - 0.423717I$	$-7.99674 + 0.91931I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.654189 - 0.184431I$ $a = -0.538618 + 0.070989I$ $b = 0.391553 - 0.549679I$	$-1.260360 + 0.423717I$	$-7.99674 - 0.91931I$
$u = -0.529989 + 0.397570I$ $a = -1.67202 - 0.34888I$ $b = -0.596201 + 0.881402I$	$3.95414 + 0.38627I$	$-1.85947 - 3.38777I$
$u = -0.529989 - 0.397570I$ $a = -1.67202 + 0.34888I$ $b = -0.596201 - 0.881402I$	$3.95414 - 0.38627I$	$-1.85947 + 3.38777I$
$u = 0.639852 + 0.144046I$ $a = 3.08474 + 0.58209I$ $b = -1.381130 + 0.226724I$	$1.84996 - 3.15841I$	$9.47520 - 9.12090I$
$u = 0.639852 - 0.144046I$ $a = 3.08474 - 0.58209I$ $b = -1.381130 - 0.226724I$	$1.84996 + 3.15841I$	$9.47520 + 9.12090I$
$u = 0.654308$ $a = 3.62045$ $b = -1.65895$	-2.22969	67.2950
$u = 0.588102 + 0.171365I$ $a = -2.84290 - 0.61949I$ $b = 1.353460 - 0.186397I$	$1.92105 + 2.39883I$	$3.66261 - 13.09776I$
$u = 0.588102 - 0.171365I$ $a = -2.84290 + 0.61949I$ $b = 1.353460 + 0.186397I$	$1.92105 - 2.39883I$	$3.66261 + 13.09776I$
$u = -0.320160 + 0.383969I$ $a = 1.020170 - 0.857951I$ $b = -0.61660 - 1.40696I$	$4.53679 + 2.47928I$	$-0.68036 - 6.13798I$
$u = -0.320160 - 0.383969I$ $a = 1.020170 + 0.857951I$ $b = -0.61660 + 1.40696I$	$4.53679 - 2.47928I$	$-0.68036 + 6.13798I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.490007$ $a = 2.37907$ $b = 1.24966$	-2.28886	9.23230
$u = -0.114853 + 0.474161I$ $a = -1.27092 - 1.05752I$ $b = -0.161350 + 0.312486I$	$1.14890 - 1.37318I$	$0.36469 + 1.97759I$
$u = -0.114853 - 0.474161I$ $a = -1.27092 + 1.05752I$ $b = -0.161350 - 0.312486I$	$1.14890 + 1.37318I$	$0.36469 - 1.97759I$
$u = 1.53031 + 0.01709I$ $a = 0.00320 + 2.92027I$ $b = -0.08616 + 2.87859I$	$-1.61422 - 3.29569I$	0
$u = 1.53031 - 0.01709I$ $a = 0.00320 - 2.92027I$ $b = -0.08616 - 2.87859I$	$-1.61422 + 3.29569I$	0
$u = 1.54794 + 0.07507I$ $a = -0.887875 - 0.463306I$ $b = -0.137758 - 0.593721I$	$-3.01572 - 1.95455I$	0
$u = 1.54794 - 0.07507I$ $a = -0.887875 + 0.463306I$ $b = -0.137758 + 0.593721I$	$-3.01572 + 1.95455I$	0
$u = -0.211055 + 0.373484I$ $a = -1.43515 + 0.89082I$ $b = 0.69504 + 1.26985I$	$4.11116 - 3.52834I$	$-1.181145 - 0.111847I$
$u = -0.211055 - 0.373484I$ $a = -1.43515 - 0.89082I$ $b = 0.69504 - 1.26985I$	$4.11116 + 3.52834I$	$-1.181145 + 0.111847I$
$u = 1.58169$ $a = 1.57467$ $b = 1.01714$	-9.58431	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.58216 + 0.03642I$ $a = 1.85708 + 0.98106I$ $b = 3.32141 + 0.99145I$	$-5.54467 - 1.67662I$	0
$u = -1.58216 - 0.03642I$ $a = 1.85708 - 0.98106I$ $b = 3.32141 - 0.99145I$	$-5.54467 + 1.67662I$	0
$u = 1.58698 + 0.08661I$ $a = 0.905854 + 0.707004I$ $b = 0.165459 + 0.939592I$	$-4.56560 - 7.81339I$	0
$u = 1.58698 - 0.08661I$ $a = 0.905854 - 0.707004I$ $b = 0.165459 - 0.939592I$	$-4.56560 + 7.81339I$	0
$u = -1.58072 + 0.17789I$ $a = 0.586609 - 1.128980I$ $b = 0.46188 - 1.34959I$	$-7.17267 + 2.64825I$	0
$u = -1.58072 - 0.17789I$ $a = 0.586609 + 1.128980I$ $b = 0.46188 + 1.34959I$	$-7.17267 - 2.64825I$	0
$u = -1.60470 + 0.04263I$ $a = -2.06138 - 0.83331I$ $b = -3.78591 - 0.82320I$	$-5.95012 + 3.87436I$	0
$u = -1.60470 - 0.04263I$ $a = -2.06138 + 0.83331I$ $b = -3.78591 + 0.82320I$	$-5.95012 - 3.87436I$	0
$u = 1.61720 + 0.10797I$ $a = -0.04874 + 2.47310I$ $b = -0.48218 + 2.99880I$	$-8.61560 - 6.27258I$	0
$u = 1.61720 - 0.10797I$ $a = -0.04874 - 2.47310I$ $b = -0.48218 - 2.99880I$	$-8.61560 + 6.27258I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.62182+0.05898I$ $a=0.73604-1.67622I$ $b=1.04916-2.39235I$	$-9.23214+1.34124I$	0
$u=-1.62182-0.05898I$ $a=0.73604+1.67622I$ $b=1.04916+2.39235I$	$-9.23214-1.34124I$	0
$u=-1.61031+0.20630I$ $a=-0.489420+1.128370I$ $b=-0.21406+1.41657I$	$-8.02726+8.18238I$	0
$u=-1.61031-0.20630I$ $a=-0.489420-1.128370I$ $b=-0.21406-1.41657I$	$-8.02726-8.18238I$	0
$u=-1.62518$ $a=-3.46972$ $b=-5.99252$	-10.2714	0
$u=1.62760+0.06695I$ $a=0.28314-2.51515I$ $b=0.48132-3.01262I$	$-11.98070-1.70600I$	0
$u=1.62760-0.06695I$ $a=0.28314+2.51515I$ $b=0.48132+3.01262I$	$-11.98070+1.70600I$	0
$u=1.63827+0.17196I$ $a=0.15508+2.31534I$ $b=-0.57948+3.08235I$	$-5.46017-10.12170I$	0
$u=1.63827-0.17196I$ $a=0.15508-2.31534I$ $b=-0.57948-3.08235I$	$-5.46017+10.12170I$	0
$u=1.65503+0.12700I$ $a=0.01629-2.29305I$ $b=0.47525-3.05821I$	$-13.0774-9.7323I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.65503 - 0.12700I$ $a = 0.01629 + 2.29305I$ $b = 0.47525 + 3.05821I$	$-13.0774 + 9.7323I$	0
$u = 1.65248 + 0.17831I$ $a = -0.16298 - 2.26633I$ $b = 0.57652 - 3.12315I$	$-6.5902 - 16.2413I$	0
$u = 1.65248 - 0.17831I$ $a = -0.16298 + 2.26633I$ $b = 0.57652 + 3.12315I$	$-6.5902 + 16.2413I$	0
$u = -1.67198 + 0.13267I$ $a = -0.42070 + 1.35733I$ $b = -0.28865 + 2.00232I$	$-12.88690 + 2.88771I$	0
$u = -1.67198 - 0.13267I$ $a = -0.42070 - 1.35733I$ $b = -0.28865 - 2.00232I$	$-12.88690 - 2.88771I$	0
$u = -1.72195 + 0.03637I$ $a = -0.13162 + 1.56155I$ $b = -0.10120 + 2.52020I$	$-10.21030 - 2.29473I$	0
$u = -1.72195 - 0.03637I$ $a = -0.13162 - 1.56155I$ $b = -0.10120 - 2.52020I$	$-10.21030 + 2.29473I$	0
$u = 0.159298 + 0.045390I$ $a = -3.50317 - 1.96300I$ $b = 0.632024 + 0.233803I$	$-1.37886 - 0.33747I$	$-8.08157 + 0.11304I$
$u = 0.159298 - 0.045390I$ $a = -3.50317 + 1.96300I$ $b = 0.632024 - 0.233803I$	$-1.37886 + 0.33747I$	$-8.08157 - 0.11304I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -7a^2 - 5a - 17$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -0.215080 + 1.307140I$ $b = 0$	$1.37919 + 2.82812I$	$-4.28809 - 2.59975I$
$u = 1.00000$ $a = -0.215080 - 1.307140I$ $b = 0$	$1.37919 - 2.82812I$	$-4.28809 + 2.59975I$
$u = 1.00000$ $a = -0.569840$ $b = 0$	-2.75839	-16.4240

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -17$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.618034$ $a = -1.61803$ $b = -0.618034$	-2.63189	-17.0000
$u = -1.61803$ $a = 0.618034$ $b = 1.61803$	-10.5276	-17.0000

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^2)(u^3-u^2+2u-1)(u^{79}+26u^{78}+\cdots+39u+1)$
c_2	$((u-1)^2)(u^3+u^2-1)(u^{79}+4u^{78}+\cdots-13u-1)$
c_3	$(u^2-u-1)(u^3+u^2+2u+1)(u^{79}+u^{78}+\cdots-1072u+71)$
c_4	$(u^2-u-1)(u^3+u^2+2u+1)(u^{79}+3u^{78}+\cdots+108u+43)$
c_5	$((u+1)^2)(u^3-u^2+1)(u^{79}+4u^{78}+\cdots-13u-1)$
c_6	$((u+1)^2)(u^3+u^2+2u+1)(u^{79}+26u^{78}+\cdots+39u+1)$
c_7, c_8	$((u-1)^3)(u^2+u-1)(u^{79}+5u^{78}+\cdots+9u+1)$
c_9	$u^2(u-1)^3(u^{79}-4u^{78}+\cdots-16u+4)$
c_{10}, c_{11}	$((u+1)^3)(u^2-u-1)(u^{79}+5u^{78}+\cdots+9u+1)$
c_{12}	$u^3(u-1)^2(u^{79}+7u^{78}+\cdots+20u-8)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_6	$((y-1)^2)(y^3+3y^2+2y-1)(y^{79}+58y^{78}+\cdots-337y-1)$
c_2, c_5	$((y-1)^2)(y^3-y^2+2y-1)(y^{79}-26y^{78}+\cdots+39y-1)$
c_3	$(y^2-3y+1)(y^3+3y^2+2y-1)(y^{79}-75y^{78}+\cdots+614980y-5041)$
c_4	$(y^2-3y+1)(y^3+3y^2+2y-1)(y^{79}-87y^{78}+\cdots+1126052y-1849)$
c_7, c_8, c_{10} c_{11}	$((y-1)^3)(y^2-3y+1)(y^{79}-93y^{78}+\cdots+81y-1)$
c_9	$y^2(y-1)^3(y^{79}-18y^{78}+\cdots+488y-16)$
c_{12}	$y^3(y-1)^2(y^{79}+19y^{78}+\cdots+720y-64)$