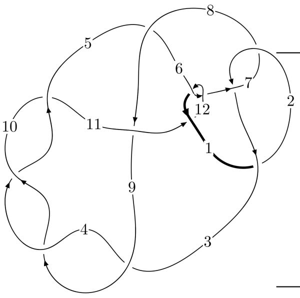
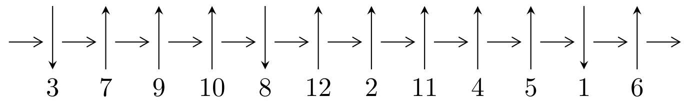
$12a_{0569}$ $(K12a_{0569})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -3u^{33} + 5u^{32} + \cdots + b - 3,\ 7u^{33} - 11u^{32} + \cdots + 2a + 9,\ u^{34} - 3u^{33} + \cdots - 5u - 2 \rangle$$
$$I_2^u = \langle -21u^{24}a - 357u^{24} + \cdots + 85a - 335,\ -2u^{23}a - 2u^{24} + \cdots + a^2 - a,\ u^{25} + u^{24} + \cdots + u - 1 \rangle$$
$$I_3^u = \langle u^7 - 4u^5 + u^4 + 4u^3 - 2u^2 + b - u,\ -u^5 - u^4 + 3u^3 + 2u^2 + a - u,\ u^8 - 5u^6 + 7u^4 - 2u^2 + 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 92 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. $I_1^u = \langle -3u^{33}+5u^{32}+\cdots+b-3,\ 7u^{33}-11u^{32}+\cdots+2a+9,\ u^{34}-3u^{33}+\cdots-5u-2\rangle$

(i) Arc colorings

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

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

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

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

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

$$a_2 = \begin{pmatrix} -\frac{7}{2}u^{33}+\frac{11}{2}u^{32}+\cdots-\frac{29}{2}u-\frac{9}{2} \\ 3u^{33}-5u^{32}+\cdots+11u+3 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -5.50000u^{33}+8.50000u^{32}+\cdots-20.5000u-6.50000 \\ 5u^{33}-8u^{32}+\cdots+17u+5 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^6+3u^4-2u^2+1 \\ u^8-4u^6+4u^4 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^{11}-6u^9+12u^7-10u^5+5u^3 \\ -u^{13}+7u^{11}-17u^9+16u^7-4u^5-u^3+u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -\frac{3}{2}u^{33}+\frac{5}{2}u^{32}+\cdots-\frac{13}{2}u-\frac{3}{2} \\ 2u^{33}-3u^{32}+\cdots+9u+3 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} \frac{7}{2}u^{33}-\frac{11}{2}u^{32}+\cdots+\frac{27}{2}u+\frac{11}{2} \\ -3u^{33}+5u^{32}+\cdots-10u-3 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= 12u^{33}-12u^{32}-218u^{31}+192u^{30}+1764u^{29}-1284u^{28}-8408u^{27}+4518u^{26}+26308u^{25}-8142u^{24}-56882u^{23}+2928u^{22}+86532u^{21}+19602u^{20}-91108u^{19}-48412u^{18}+61428u^{17}+58604u^{16}-19212u^{15}-42828u^{14}-6604u^{13}+18558u^{12}+10772u^{11}-3466u^{10}-5728u^{9}-1018u^{8}+1686u^{7}+1004u^{6}-148u^{5}-386u^{4}-132u^{3}+52u^{2}+68u+34$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{11}	$u^{34} + 14u^{33} + \cdots + 2u + 1$
c_2, c_6, c_7 c_{12}	$u^{34} + 7u^{32} + \cdots + 2u - 1$
c_3, c_4, c_9 c_{10}	$u^{34} + 3u^{33} + \cdots + 5u - 2$
c_5	$u^{34} - 15u^{33} + \cdots - 4575u + 358$
c_8	$u^{34} + 9u^{33} + \cdots - 281u - 136$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$y^{34} + 22y^{33} + \cdots - 102y + 1$
c_2, c_6, c_7 c_{12}	$y^{34} + 14y^{33} + \cdots + 2y + 1$
c_3, c_4, c_9 c_{10}	$y^{34} - 39y^{33} + \cdots - 21y + 4$
c_5	$y^{34} + 9y^{33} + \cdots - 2328229y + 128164$
c_8	$y^{34} - 3y^{33} + \cdots - 79233y + 18496$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.877399 + 0.216772I$ $a = 0.475747 - 0.156573I$ $b = 0.73016 + 1.40055I$	$1.81473 - 6.46317I$	$9.54481 + 4.22755I$
$u = 0.877399 - 0.216772I$ $a = 0.475747 + 0.156573I$ $b = 0.73016 - 1.40055I$	$1.81473 + 6.46317I$	$9.54481 - 4.22755I$
$u = -0.708573 + 0.517031I$ $a = -0.145662 + 0.387973I$ $b = 0.22304 - 2.36773I$	$-0.14844 - 13.04060I$	$6.35227 + 10.72030I$
$u = -0.708573 - 0.517031I$ $a = -0.145662 - 0.387973I$ $b = 0.22304 + 2.36773I$	$-0.14844 + 13.04060I$	$6.35227 - 10.72030I$
$u = 0.780460 + 0.363894I$ $a = -0.627024 - 0.012240I$ $b = 0.031716 - 1.019530I$	$4.40948 + 4.16383I$	$12.6794 - 7.1623I$
$u = 0.780460 - 0.363894I$ $a = -0.627024 + 0.012240I$ $b = 0.031716 + 1.019530I$	$4.40948 - 4.16383I$	$12.6794 + 7.1623I$
$u = -0.736699 + 0.432721I$ $a = 0.353503 - 0.411057I$ $b = -0.48051 + 1.43982I$	$3.92336 - 2.16093I$	$12.40932 + 2.19070I$
$u = -0.736699 - 0.432721I$ $a = 0.353503 + 0.411057I$ $b = -0.48051 - 1.43982I$	$3.92336 + 2.16093I$	$12.40932 - 2.19070I$
$u = -0.562396 + 0.535053I$ $a = -0.351346 + 0.308190I$ $b = -1.167160 - 0.153798I$	$-3.10387 + 1.61500I$	$3.93469 - 1.70541I$
$u = -0.562396 - 0.535053I$ $a = -0.351346 - 0.308190I$ $b = -1.167160 + 0.153798I$	$-3.10387 - 1.61500I$	$3.93469 + 1.70541I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.369153+0.566173I$ $a=\ 0.060405-1.357450I$ $b=\ 0.522127-0.471400I$	$-3.66613-5.39835I$	$2.14176+8.12985I$
$u=-0.369153-0.566173I$ $a=\ 0.060405+1.357450I$ $b=\ 0.522127+0.471400I$	$-3.66613+5.39835I$	$2.14176-8.12985I$
$u=\ 0.478774+0.474535I$ $a=\ 0.006193-0.459110I$ $b=\ 0.318164+0.001013I$	$-1.82601+1.67416I$	$6.00203-5.31904I$
$u=\ 0.478774-0.474535I$ $a=\ 0.006193+0.459110I$ $b=\ 0.318164-0.001013I$	$-1.82601-1.67416I$	$6.00203+5.31904I$
$u=-0.184105+0.612147I$ $a=-2.40151-0.24206I$ $b=-0.085419-0.531958I$	$-1.68891+9.20421I$	$3.04718-5.89874I$
$u=-0.184105-0.612147I$ $a=-2.40151+0.24206I$ $b=-0.085419+0.531958I$	$-1.68891-9.20421I$	$3.04718+5.89874I$
$u=\ 1.43714+0.08661I$ $a=\ 0.678840+0.278085I$ $b=-0.085956-1.097670I$	$2.03333+7.62639I$	0
$u=\ 1.43714-0.08661I$ $a=\ 0.678840-0.278085I$ $b=-0.085956+1.097670I$	$2.03333-7.62639I$	0
$u=-0.050097+0.546766I$ $a=\ 1.46207-0.24634I$ $b=\ 0.040124+0.397505I$	$1.94188-1.14446I$	$7.91735+3.10614I$
$u=-0.050097-0.546766I$ $a=\ 1.46207+0.24634I$ $b=\ 0.040124-0.397505I$	$1.94188+1.14446I$	$7.91735-3.10614I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.53119+0.11501I$ $a=\ 0.777108+0.261273I$ $b=-1.053720-0.389785I$	$4.89311-3.68703I$	0
$u=-1.53119-0.11501I$ $a=\ 0.777108-0.261273I$ $b=-1.053720+0.389785I$	$4.89311+3.68703I$	0
$u=\ 1.54361$ $a=-0.986884$ $b=\ 0.729443$	7.42344	0
$u=\ 1.54714+0.14618I$ $a=-1.43226+0.61040I$ $b=\ 1.95694-0.15000I$	$3.92568+0.82031I$	0
$u=\ 1.54714-0.14618I$ $a=-1.43226-0.61040I$ $b=\ 1.95694+0.15000I$	$3.92568-0.82031I$	0
$u=-0.432002$ $a=\ 0.604501$ $b=-0.356295$	0.622618	16.1500
$u=\ 1.60778+0.15231I$ $a=\ 1.23471+3.38333I$ $b=-0.71168-4.36160I$	$7.6999+15.5437I$	0
$u=\ 1.60778-0.15231I$ $a=\ 1.23471-3.38333I$ $b=-0.71168+4.36160I$	$7.6999-15.5437I$	0
$u=\ 1.61580+0.12438I$ $a=-1.19491-2.06212I$ $b=\ 0.95223+2.61552I$	$11.94790+4.25345I$	0
$u=\ 1.61580-0.12438I$ $a=-1.19491+2.06212I$ $b=\ 0.95223-2.61552I$	$11.94790-4.25345I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.62557 + 0.09964I$ $a = -0.15988 + 2.10696I$ $b = 0.28288 - 2.81306I$	$12.65520 - 5.90157I$	0
$u = -1.62557 - 0.09964I$ $a = -0.15988 - 2.10696I$ $b = 0.28288 + 2.81306I$	$12.65520 + 5.90157I$	0
$u = -1.63252 + 0.05614I$ $a = 1.20521 - 2.66840I$ $b = -1.65951 + 3.54397I$	$10.38340 + 5.46156I$	0
$u = -1.63252 - 0.05614I$ $a = 1.20521 + 2.66840I$ $b = -1.65951 - 3.54397I$	$10.38340 - 5.46156I$	0

II. $I_2^u = \langle -21u^{24}a - 357u^{24} + \cdots + 85a - 335,\ -2u^{23}a - 2u^{24} + \cdots + a^2 - a,\ u^{25} + u^{24} + \cdots + u - 1\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} a \\ 0.0589888au^{24} + 1.00281u^{24} + \cdots - 0.238764a + 0.941011 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.0477528au^{24} + 0.811798u^{24} + \cdots + 0.997191a - 0.0477528 \\ 0.0112360au^{24} + 0.191011u^{24} + \cdots - 0.235955a + 0.988764 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^6 + 3u^4 - 2u^2 + 1 \\ u^8 - 4u^6 + 4u^4 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^{11} - 6u^9 + 12u^7 - 10u^5 + 5u^3 \\ -u^{13} + 7u^{11} - 17u^9 + 16u^7 - 4u^5 - u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.0477528au^{24} + 0.188202u^{24} + \cdots - 0.997191a + 1.04775 \\ -0.0112360au^{24} + 0.808989u^{24} + \cdots + 0.235955a - 0.988764 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.0477528au^{24} + 0.188202u^{24} + \cdots + 1.00281a + 0.0477528 \\ 0.0477528au^{24} + 0.811798u^{24} + \cdots - 1.00281a + 0.952247 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 4u^{23} - 56u^{21} + 328u^{19} - 4u^{18} - 1040u^{17} + 44u^{16} + 1936u^{15} - 192u^{14} - 2164u^{13} + 420u^{12} + 1440u^{11} - 484u^{10} - 508u^9 + 296u^8 - 4u^7 - 100u^6 + 64u^5 + 4u^4 - 20u^3 + 4u^2 - 4u + 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{11}	$u^{50} + 27u^{49} + \cdots + 35u + 4$
c_2, c_6, c_7 c_{12}	$u^{50} + u^{49} + \cdots + 5u + 2$
c_3, c_4, c_9 c_{10}	$(u^{25} - u^{24} + \cdots + u + 1)^2$
c_5	$(u^{25} + 5u^{24} + \cdots - 47u - 11)^2$
c_8	$(u^{25} + 7u^{24} + \cdots + 41u + 7)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$y^{50} - 9y^{49} + \cdots + 1407y + 16$
c_2, c_6, c_7 c_{12}	$y^{50} + 27y^{49} + \cdots + 35y + 4$
c_3, c_4, c_9 c_{10}	$(y^{25} - 29y^{24} + \cdots + y - 1)^2$
c_5	$(y^{25} + 11y^{24} + \cdots - 827y - 121)^2$
c_8	$(y^{25} - 5y^{24} + \cdots + 197y - 49)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.718272 + 0.485243I$ $a = -0.496142 - 0.419262I$ $b = 0.26577 + 1.44202I$	$2.29194 + 7.50021I$	$9.62573 - 7.29113I$
$u = 0.718272 + 0.485243I$ $a = -0.100137 + 0.365766I$ $b = -0.06988 - 2.11914I$	$2.29194 + 7.50021I$	$9.62573 - 7.29113I$
$u = 0.718272 - 0.485243I$ $a = -0.496142 + 0.419262I$ $b = 0.26577 - 1.44202I$	$2.29194 - 7.50021I$	$9.62573 + 7.29113I$
$u = 0.718272 - 0.485243I$ $a = -0.100137 - 0.365766I$ $b = -0.06988 + 2.11914I$	$2.29194 - 7.50021I$	$9.62573 + 7.29113I$
$u = -0.816872 + 0.280683I$ $a = 0.751695 - 0.110614I$ $b = -0.004403 - 0.561403I$	$3.64682 + 1.11527I$	$12.41631 + 0.71281I$
$u = -0.816872 + 0.280683I$ $a = -0.229043 - 0.316380I$ $b = -0.73086 + 1.46356I$	$3.64682 + 1.11527I$	$12.41631 + 0.71281I$
$u = -0.816872 - 0.280683I$ $a = 0.751695 + 0.110614I$ $b = -0.004403 + 0.561403I$	$3.64682 - 1.11527I$	$12.41631 - 0.71281I$
$u = -0.816872 - 0.280683I$ $a = -0.229043 + 0.316380I$ $b = -0.73086 - 1.46356I$	$3.64682 - 1.11527I$	$12.41631 - 0.71281I$
$u = -0.664564 + 0.449435I$ $a = 0.455137 + 0.809467I$ $b = -0.62549 - 2.26185I$	$-3.14595 - 4.18290I$	$4.98515 + 7.72660I$
$u = -0.664564 + 0.449435I$ $a = -0.833552 + 0.255403I$ $b = -1.15382 - 0.82719I$	$-3.14595 - 4.18290I$	$4.98515 + 7.72660I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.664564 - 0.449435I$ $a = 0.455137 - 0.809467I$ $b = -0.62549 + 2.26185I$	$-3.14595 + 4.18290I$	$4.98515 - 7.72660I$
$u = -0.664564 - 0.449435I$ $a = -0.833552 - 0.255403I$ $b = -1.15382 + 0.82719I$	$-3.14595 + 4.18290I$	$4.98515 - 7.72660I$
$u = 0.629613 + 0.295912I$ $a = 1.103490 + 0.019629I$ $b = 0.691062 - 1.047430I$	$-2.09040 + 0.82124I$	$8.96410 - 1.46331I$
$u = 0.629613 + 0.295912I$ $a = -0.169580 - 1.235130I$ $b = 1.03458 + 1.49781I$	$-2.09040 + 0.82124I$	$8.96410 - 1.46331I$
$u = 0.629613 - 0.295912I$ $a = 1.103490 - 0.019629I$ $b = 0.691062 + 1.047430I$	$-2.09040 - 0.82124I$	$8.96410 + 1.46331I$
$u = 0.629613 - 0.295912I$ $a = -0.169580 + 1.235130I$ $b = 1.03458 - 1.49781I$	$-2.09040 - 0.82124I$	$8.96410 + 1.46331I$
$u = 0.433714 + 0.460017I$ $a = 0.310449 - 0.823732I$ $b = 0.084915 - 0.370987I$	$-1.87609 + 1.61686I$	$4.87509 - 4.54712I$
$u = 0.433714 + 0.460017I$ $a = -0.354969 - 0.143817I$ $b = 0.517702 + 0.309879I$	$-1.87609 + 1.61686I$	$4.87509 - 4.54712I$
$u = 0.433714 - 0.460017I$ $a = 0.310449 + 0.823732I$ $b = 0.084915 + 0.370987I$	$-1.87609 - 1.61686I$	$4.87509 + 4.54712I$
$u = 0.433714 - 0.460017I$ $a = -0.354969 + 0.143817I$ $b = 0.517702 - 0.309879I$	$-1.87609 - 1.61686I$	$4.87509 + 4.54712I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.142727 + 0.579000I$ $a = -1.227520 + 0.034036I$ $b = 0.026860 + 0.617172I$	$0.61424 - 3.87050I$	$6.00448 + 2.43861I$
$u = 0.142727 + 0.579000I$ $a = 2.25381 - 0.36959I$ $b = 0.014633 - 0.246499I$	$0.61424 - 3.87050I$	$6.00448 + 2.43861I$
$u = 0.142727 - 0.579000I$ $a = -1.227520 - 0.034036I$ $b = 0.026860 - 0.617172I$	$0.61424 + 3.87050I$	$6.00448 - 2.43861I$
$u = 0.142727 - 0.579000I$ $a = 2.25381 + 0.36959I$ $b = 0.014633 + 0.246499I$	$0.61424 + 3.87050I$	$6.00448 - 2.43861I$
$u = -0.209074 + 0.473774I$ $a = -0.39992 - 1.91880I$ $b = 0.211890 - 0.974935I$	$-4.45458 + 0.92486I$	$-0.08147 - 1.66278I$
$u = -0.209074 + 0.473774I$ $a = -2.62374 - 0.86746I$ $b = 0.619265 - 0.124151I$	$-4.45458 + 0.92486I$	$-0.08147 - 1.66278I$
$u = -0.209074 - 0.473774I$ $a = -0.39992 + 1.91880I$ $b = 0.211890 + 0.974935I$	$-4.45458 - 0.92486I$	$-0.08147 + 1.66278I$
$u = -0.209074 - 0.473774I$ $a = -2.62374 + 0.86746I$ $b = 0.619265 + 0.124151I$	$-4.45458 - 0.92486I$	$-0.08147 + 1.66278I$
$u = 1.48298$ $a = 1.09851 + 1.36235I$ $b = -0.26943 - 1.89202I$	0.787691	3.78220
$u = 1.48298$ $a = 1.09851 - 1.36235I$ $b = -0.26943 + 1.89202I$	0.787691	3.78220

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.49660 + 0.07007I$ $a = -0.198609 + 0.768663I$ $b = -0.401251 - 1.286810I$	$4.41001 - 3.32898I$	$8.74899 + 3.47484I$
$u = -1.49660 + 0.07007I$ $a = 1.298030 + 0.149609I$ $b = -1.096220 - 0.011479I$	$4.41001 - 3.32898I$	$8.74899 + 3.47484I$
$u = -1.49660 - 0.07007I$ $a = -0.198609 - 0.768663I$ $b = -0.401251 + 1.286810I$	$4.41001 + 3.32898I$	$8.74899 - 3.47484I$
$u = -1.49660 - 0.07007I$ $a = 1.298030 - 0.149609I$ $b = -1.096220 + 0.011479I$	$4.41001 + 3.32898I$	$8.74899 - 3.47484I$
$u = -1.59018 + 0.09388I$ $a = 1.13331 + 1.34552I$ $b = -2.13417 - 1.44076I$	$5.52546 - 2.31852I$	$10.07988 - 0.26267I$
$u = -1.59018 + 0.09388I$ $a = 2.17950 - 2.41711I$ $b = -2.37114 + 2.78140I$	$5.52546 - 2.31852I$	$10.07988 - 0.26267I$
$u = -1.59018 - 0.09388I$ $a = 1.13331 - 1.34552I$ $b = -2.13417 + 1.44076I$	$5.52546 + 2.31852I$	$10.07988 + 0.26267I$
$u = -1.59018 - 0.09388I$ $a = 2.17950 + 2.41711I$ $b = -2.37114 - 2.78140I$	$5.52546 + 2.31852I$	$10.07988 + 0.26267I$
$u = 1.59510 + 0.12778I$ $a = -1.45878 + 1.14196I$ $b = 2.53044 - 0.90497I$	$4.53379 + 6.30957I$	$7.83367 - 5.57691I$
$u = 1.59510 + 0.12778I$ $a = 0.17314 + 3.89558I$ $b = 0.21333 - 4.54298I$	$4.53379 + 6.30957I$	$7.83367 - 5.57691I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.59510 - 0.12778I$ $a = -1.45878 - 1.14196I$ $b = 2.53044 + 0.90497I$	$4.53379 - 6.30957I$	$7.83367 + 5.57691I$
$u = 1.59510 - 0.12778I$ $a = 0.17314 - 3.89558I$ $b = 0.21333 + 4.54298I$	$4.53379 - 6.30957I$	$7.83367 + 5.57691I$
$u = -1.61122 + 0.14112I$ $a = 0.98524 - 1.89455I$ $b = -0.56722 + 2.33541I$	$10.2089 - 9.8448I$	$11.88321 + 5.59341I$
$u = -1.61122 + 0.14112I$ $a = -0.89838 + 3.28439I$ $b = 0.51623 - 4.20300I$	$10.2089 - 9.8448I$	$11.88321 + 5.59341I$
$u = -1.61122 - 0.14112I$ $a = 0.98524 + 1.89455I$ $b = -0.56722 - 2.33541I$	$10.2089 + 9.8448I$	$11.88321 - 5.59341I$
$u = -1.61122 - 0.14112I$ $a = -0.89838 - 3.28439I$ $b = 0.51623 + 4.20300I$	$10.2089 + 9.8448I$	$11.88321 - 5.59341I$
$u = 1.62760 + 0.07696I$ $a = 0.05235 + 1.49265I$ $b = -0.36051 - 2.03840I$	$12.01820 + 0.23028I$	$13.77375 + 0.13265I$
$u = 1.62760 + 0.07696I$ $a = -1.30429 - 2.61429I$ $b = 1.55773 + 3.42070I$	$12.01820 + 0.23028I$	$13.77375 + 0.13265I$
$u = 1.62760 - 0.07696I$ $a = 0.05235 - 1.49265I$ $b = -0.36051 + 2.03840I$	$12.01820 - 0.23028I$	$13.77375 - 0.13265I$
$u = 1.62760 - 0.07696I$ $a = -1.30429 + 2.61429I$ $b = 1.55773 - 3.42070I$	$12.01820 - 0.23028I$	$13.77375 - 0.13265I$

III. $\boldsymbol{I^u_3 = \langle u^7 - 4u^5 + u^4 + 4u^3 - 2u^2 + b - u,\ -u^5 - u^4 + 3u^3 + 2u^2 + a - u,\ u^8 - 5u^6 + 7u^4 - 2u^2 + 1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^5 + u^4 - 3u^3 - 2u^2 + u \\ -u^7 + 4u^5 - u^4 - 4u^3 + 2u^2 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^5 + u^4 - 3u^3 - 2u^2 + 2u \\ -u^7 + 4u^5 - u^4 - 4u^3 + 2u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^6 + 3u^4 - 2u^2 + 1 \\ u^6 - 3u^4 + 2u^2 - 1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^5 + 2u^3 + u \\ u^5 - 3u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^6 - u^5 + 4u^4 + 3u^3 - 4u^2 - u + 1 \\ u^5 - 3u^3 + u - 1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^5 + u^4 - 3u^3 - 3u^2 + 2u + 1 \\ -u^7 + 4u^5 - 4u^3 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^6 + 16u^4 - 16u^2 + 4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.506844 + 0.395123I$ $a = 0.368534 - 1.072150I$ $b = 0.858652 + 0.115465I$	$-3.50087 + 1.41510I$	$0.17326 - 4.90874I$
$u = 0.506844 - 0.395123I$ $a = 0.368534 + 1.072150I$ $b = 0.858652 - 0.115465I$	$-3.50087 - 1.41510I$	$0.17326 + 4.90874I$
$u = -0.506844 + 0.395123I$ $a = -1.072150 + 0.368534I$ $b = -0.155036 - 1.325220I$	$-3.50087 - 1.41510I$	$0.17326 + 4.90874I$
$u = -0.506844 - 0.395123I$ $a = -1.072150 - 0.368534I$ $b = -0.155036 + 1.325220I$	$-3.50087 + 1.41510I$	$0.17326 - 4.90874I$
$u = 1.55249 + 0.10488I$ $a = -0.05948 + 1.76310I$ $b = 0.70068 - 1.80642I$	$3.50087 + 3.16396I$	$3.82674 - 2.56480I$
$u = 1.55249 - 0.10488I$ $a = -0.05948 - 1.76310I$ $b = 0.70068 + 1.80642I$	$3.50087 - 3.16396I$	$3.82674 + 2.56480I$
$u = -1.55249 + 0.10488I$ $a = 1.76310 - 0.05948I$ $b = -2.40430 + 0.01617I$	$3.50087 - 3.16396I$	$3.82674 + 2.56480I$
$u = -1.55249 - 0.10488I$ $a = 1.76310 + 0.05948I$ $b = -2.40430 - 0.01617I$	$3.50087 + 3.16396I$	$3.82674 - 2.56480I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_{11}	$((u-1)^8)(u^{34}+14u^{33}+\cdots+2u+1)(u^{50}+27u^{49}+\cdots+35u+4)$
c_2, c_6, c_7 c_{12}	$((u^2+1)^4)(u^{34}+7u^{32}+\cdots+2u-1)(u^{50}+u^{49}+\cdots+5u+2)$
c_3, c_4, c_9 c_{10}	$(u^8-5u^6+7u^4-2u^2+1)(u^{25}-u^{24}+\cdots+u+1)^2$ $\cdot(u^{34}+3u^{33}+\cdots+5u-2)$
c_5	$(u^8-u^6+3u^4-2u^2+1)(u^{25}+5u^{24}+\cdots-47u-11)^2$ $\cdot(u^{34}-15u^{33}+\cdots-4575u+358)$
c_8	$((u^4-u^3+u^2+1)^2)(u^{25}+7u^{24}+\cdots+41u+7)^2$ $\cdot(u^{34}+9u^{33}+\cdots-281u-136)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$((y-1)^8)(y^{34}+22y^{33}+\cdots-102y+1)(y^{50}-9y^{49}+\cdots+1407y+16)$
c_2, c_6, c_7 c_{12}	$((y+1)^8)(y^{34}+14y^{33}+\cdots+2y+1)(y^{50}+27y^{49}+\cdots+35y+4)$
c_3, c_4, c_9 c_{10}	$((y^4-5y^3+7y^2-2y+1)^2)(y^{25}-29y^{24}+\cdots+y-1)^2$ $\cdot(y^{34}-39y^{33}+\cdots-21y+4)$
c_5	$((y^4-y^3+3y^2-2y+1)^2)(y^{25}+11y^{24}+\cdots-827y-121)^2$ $\cdot(y^{34}+9y^{33}+\cdots-2328229y+128164)$
c_8	$((y^4+y^3+3y^2+2y+1)^2)(y^{25}-5y^{24}+\cdots+197y-49)^2$ $\cdot(y^{34}-3y^{33}+\cdots-79233y+18496)$