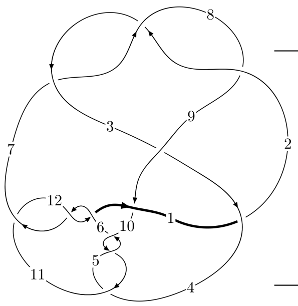
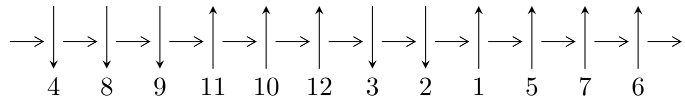
$12a_{1144}$ $(K12a_{1144})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle b - u,\ -u^{31} + u^{30} + \cdots + 32a + 1,\ u^{32} + 20u^{30} + \cdots + 2u + 1\rangle$$
$$I_2^u = \langle -5.88169 \times 10^{23}u^{41} + 2.40634 \times 10^{24}u^{40} + \cdots + 2.85857 \times 10^{25}b - 1.53616 \times 10^{25},$$
$$-\, 2.91738 \times 10^{25}u^{41} + 3.09920 \times 10^{25}u^{40} + \cdots + 2.85857 \times 10^{25}a + 4.18097 \times 10^{25},\ u^{42} - u^{41} + \cdots - 2u +$$
$$I_3^u = \langle b + u,\ a^5 - a^4 + 2a^3 - a^2 + a - 1,\ u^2 + 1\rangle$$

* 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. $\boldsymbol{I^u_1 = \langle b - u,\ -u^{31} + u^{30} + \cdots + 32a + 1,\ u^{32} + 20u^{30} + \cdots + 2u + 1\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.0312500u^{31} - 0.0312500u^{30} + \cdots + 2.96875u - 0.0312500 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.0312500u^{31} - 0.0312500u^{30} + \cdots + 1.96875u - 0.0312500 \\ 0.0312500u^{31} - 0.0312500u^{30} + \cdots + 0.968750u - 0.0312500 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.0312500u^{31} - 0.0312500u^{30} + \cdots - 0.0937500u - 0.0937500 \\ 0.0312500u^{31} - 0.0312500u^{30} + \cdots + 0.968750u - 0.0312500 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} \frac{9}{16}u^{31} - \frac{1}{4}u^{30} + \cdots + \frac{9}{4}u + \frac{21}{16} \\ \frac{3}{8}u^{31} + \frac{1}{4}u^{30} + \cdots + \frac{19}{16}u + \frac{5}{16} \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -\frac{1}{16}u^{31} - \frac{1}{16}u^{30} + \cdots - \frac{7}{8}u - \frac{5}{8} \\ \frac{1}{8}u^{31} - \frac{7}{16}u^{30} + \cdots - \frac{1}{2}u - \frac{17}{16} \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0.0312500u^{31} - 0.0312500u^{30} + \cdots + 1.96875u - 0.0312500 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.0312500u^{31} + 0.0312500u^{30} + \cdots + 0.0937500u + 1.03125 \\ -u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{11}{8}u^{31} - \frac{1}{8}u^{30} + \cdots + 8u + \frac{7}{2}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{32} - 7u^{31} + \cdots - 629u + 136$
c_2, c_7, c_8	$u^{32} - 3u^{31} + \cdots - 9u + 2$
c_3	$u^{32} + 3u^{31} + \cdots - 45u + 10$
c_4, c_5, c_6 c_{10}, c_{11}, c_{12}	$u^{32} + 20u^{30} + \cdots - 2u + 1$
c_9	$u^{32} - 21u^{31} + \cdots - 31521u + 3794$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{32} + 9y^{31} + \cdots + 185079y + 18496$
c_2, c_7, c_8	$y^{32} + 29y^{31} + \cdots + 3y + 4$
c_3	$y^{32} + y^{31} + \cdots + 1795y + 100$
c_4, c_5, c_6 c_{10}, c_{11}, c_{12}	$y^{32} + 40y^{31} + \cdots + 10y + 1$
c_9	$y^{32} + 9y^{31} + \cdots + 46718595y + 14394436$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.606629+0.369922I$ $a=-1.66986+0.58326I$ $b=-0.606629+0.369922I$	$5.08010-7.21382I$	$6.51491+8.36258I$
$u=-0.606629-0.369922I$ $a=-1.66986-0.58326I$ $b=-0.606629-0.369922I$	$5.08010+7.21382I$	$6.51491-8.36258I$
$u=0.629670+0.175324I$ $a=1.56872+0.28026I$ $b=0.629670+0.175324I$	$6.58025-1.12952I$	$10.00433-1.13663I$
$u=0.629670-0.175324I$ $a=1.56872-0.28026I$ $b=0.629670-0.175324I$	$6.58025+1.12952I$	$10.00433+1.13663I$
$u=0.546847+0.354433I$ $a=1.56713+0.62149I$ $b=0.546847+0.354433I$	$-0.24655+3.89301I$	$1.84831-8.81175I$
$u=0.546847-0.354433I$ $a=1.56713-0.62149I$ $b=0.546847-0.354433I$	$-0.24655-3.89301I$	$1.84831+8.81175I$
$u=-0.046705+1.401200I$ $a=-0.34108-1.47427I$ $b=-0.046705+1.401200I$	$-0.35213-5.09138I$	$-0.46090+3.41418I$
$u=-0.046705-1.401200I$ $a=-0.34108+1.47427I$ $b=-0.046705-1.401200I$	$-0.35213+5.09138I$	$-0.46090-3.41418I$
$u=0.02438+1.43670I$ $a=0.155902-1.256460I$ $b=0.02438+1.43670I$	$-6.57448+2.07353I$	$-3.81450-3.36266I$
$u=0.02438-1.43670I$ $a=0.155902+1.256460I$ $b=0.02438-1.43670I$	$-6.57448-2.07353I$	$-3.81450+3.36266I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.353670+0.399081I$ $a=-1.25094+0.96324I$ $b=-0.353670+0.399081I$	$1.33414-1.26458I$	$2.44160+5.52381I$
$u=-0.353670-0.399081I$ $a=-1.25094-0.96324I$ $b=-0.353670-0.399081I$	$1.33414+1.26458I$	$2.44160-5.52381I$
$u=-0.103781+0.515513I$ $a=-0.57149+1.83224I$ $b=-0.103781+0.515513I$	$4.24971+4.08144I$	$5.01801-1.73350I$
$u=-0.103781-0.515513I$ $a=-0.57149-1.83224I$ $b=-0.103781-0.515513I$	$4.24971-4.08144I$	$5.01801+1.73350I$
$u=-0.477770+0.219464I$ $a=-1.326770+0.440538I$ $b=-0.477770+0.219464I$	$0.940582-0.674762I$	$6.97731+2.54975I$
$u=-0.477770-0.219464I$ $a=-1.326770-0.440538I$ $b=-0.477770-0.219464I$	$0.940582+0.674762I$	$6.97731-2.54975I$
$u=-0.26977+1.48889I$ $a=-1.178040-0.476261I$ $b=-0.26977+1.48889I$	$-4.22469-5.46260I$	0
$u=-0.26977-1.48889I$ $a=-1.178040+0.476261I$ $b=-0.26977-1.48889I$	$-4.22469+5.46260I$	0
$u=\ 0.146914+0.429589I$ $a=\ 0.64149+1.38146I$ $b=\ 0.146914+0.429589I$	$-0.98864-1.13789I$	$-1.40453+1.40100I$
$u=\ 0.146914-0.429589I$ $a=\ 0.64149-1.38146I$ $b=\ 0.146914-0.429589I$	$-0.98864+1.13789I$	$-1.40453-1.40100I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=0.28852+1.54432I$ $a=1.092720-0.277920I$ $b=0.28852+1.54432I$	$-11.21850+6.79287I$	0
$u=0.28852-1.54432I$ $a=1.092720+0.277920I$ $b=0.28852-1.54432I$	$-11.21850-6.79287I$	0
$u=0.34148+1.53474I$ $a=1.241970-0.181115I$ $b=0.34148+1.53474I$	$-7.3512+14.7885I$	0
$u=0.34148-1.53474I$ $a=1.241970+0.181115I$ $b=0.34148-1.53474I$	$-7.3512-14.7885I$	0
$u=-0.32266+1.54438I$ $a=-1.177440-0.201810I$ $b=-0.32266+1.54438I$	$-12.7964-10.9677I$	0
$u=-0.32266-1.54438I$ $a=-1.177440+0.201810I$ $b=-0.32266-1.54438I$	$-12.7964+10.9677I$	0
$u=0.24178+1.58208I$ $a=0.886317-0.267032I$ $b=0.24178+1.58208I$	$-11.98810+6.51283I$	0
$u=0.24178-1.58208I$ $a=0.886317+0.267032I$ $b=0.24178-1.58208I$	$-11.98810-6.51283I$	0
$u=-0.19813+1.59690I$ $a=-0.728237-0.294996I$ $b=-0.19813+1.59690I$	$-14.7686-2.5621I$	0
$u=-0.19813-1.59690I$ $a=-0.728237+0.294996I$ $b=-0.19813-1.59690I$	$-14.7686+2.5621I$	0

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$0.15953 + 1.60567I$		
$a =$	$0.589601 - 0.320624I$	$-10.18300 - 1.30058I$	0
$b =$	$0.15953 + 1.60567I$		
$u =$	$0.15953 - 1.60567I$		
$a =$	$0.589601 + 0.320624I$	$-10.18300 + 1.30058I$	0
$b =$	$0.15953 - 1.60567I$		

II.

$\boldsymbol{I_2^u = \langle -5.88\times 10^{23}u^{41}+2.41\times 10^{24}u^{40}+\cdots+2.86\times 10^{25}b-1.54\times 10^{25},\ -2.92\times 10^{25}u^{41}+3.10\times 10^{25}u^{40}+\cdots+2.86\times 10^{25}a+4.18\times 10^{25},\ u^{42}-u^{41}+\cdots-2u+1\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1.02058u^{41} - 1.08418u^{40} + \cdots - 17.0532u - 1.46261 \\ 0.0205757u^{41} - 0.0841800u^{40} + \cdots - 3.05321u + 0.537389 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^2+1 \\ u^4+2u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.982739u^{41} - 0.799526u^{40} + \cdots - 16.2270u - 1.88182 \\ 0.0674687u^{41} - 0.121292u^{40} + \cdots - 2.75800u + 0.420716 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1.03523u^{41} - 1.08688u^{40} + \cdots - 19.2542u - 0.861618 \\ 0.0146583u^{41} - 0.00269680u^{40} + \cdots - 1.20099u + 0.600993 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.0215507u^{41} + 0.0984422u^{40} + \cdots - 16.5835u + 5.10219 \\ 0.359884u^{41} - 0.273709u^{40} + \cdots - 2.93547u + 1.06141 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1.19912u^{41} - 1.61059u^{40} + \cdots - 21.6738u + 1.42196 \\ 0.150022u^{41} - 0.407409u^{40} + \cdots + 3.68385u + 0.0765627 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^{41} - u^{40} + \cdots - 14u - 2 \\ 0.0205757u^{41} - 0.0841800u^{40} + \cdots - 3.05321u + 0.537389 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.537389u^{41} + 0.557965u^{40} + \cdots - 10.9961u - 0.978429 \\ -0.0636043u^{41} + 0.0576870u^{40} + \cdots + 0.578540u + 0.979424 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{72222077540047874114658048}{28585672337950454401808201}u^{41} + \frac{29500521900029629423443720}{28585672337950454401808201}u^{40} + \cdots - \frac{299812736301611137792225292}{28585672337950454401808201}u + \frac{106417593374116830733331718}{28585672337950454401808201}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{21} - 5u^{20} + \cdots - 11u + 3)^2$
c_2, c_7, c_8	$(u^{21} + u^{20} + \cdots - u - 1)^2$
c_3	$(u^{21} - u^{20} + \cdots - 3u - 1)^2$
c_4, c_5, c_6 c_{10}, c_{11}, c_{12}	$u^{42} + u^{41} + \cdots + 2u + 1$
c_9	$(u^{21} + 7u^{20} + \cdots + 3u - 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{21}+3y^{20}+\cdots-41y-9)^2$
c_2, c_7, c_8	$(y^{21}+19y^{20}+\cdots+3y-1)^2$
c_3	$(y^{21}-y^{20}+\cdots+3y-1)^2$
c_4, c_5, c_6 c_{10}, c_{11}, c_{12}	$y^{42}+35y^{41}+\cdots-32y+1$
c_9	$(y^{21}+15y^{20}+\cdots+27y-1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.142789 + 0.981947I$ $a = -0.400579 + 1.077330I$ $b = -0.255559 + 0.080028I$	$4.29768 + 4.29720I$	$6.75143 - 3.93304I$
$u = 0.142789 - 0.981947I$ $a = -0.400579 - 1.077330I$ $b = -0.255559 - 0.080028I$	$4.29768 - 4.29720I$	$6.75143 + 3.93304I$
$u = 0.803564 + 0.620127I$ $a = -0.854334 - 0.849675I$ $b = -0.07438 - 1.45158I$	$-4.65974 + 2.68588I$	$-1.85070 - 3.67518I$
$u = 0.803564 - 0.620127I$ $a = -0.854334 + 0.849675I$ $b = -0.07438 + 1.45158I$	$-4.65974 - 2.68588I$	$-1.85070 + 3.67518I$
$u = -0.892757 + 0.485854I$ $a = 1.04420 - 0.99396I$ $b = 0.18002 - 1.46427I$	$-6.19421 - 6.51836I$	$-3.49661 + 6.69162I$
$u = -0.892757 - 0.485854I$ $a = 1.04420 + 0.99396I$ $b = 0.18002 + 1.46427I$	$-6.19421 + 6.51836I$	$-3.49661 - 6.69162I$
$u = 0.816854 + 0.532908I$ $a = -0.987760 - 0.874778I$ $b = -0.12904 - 1.43500I$	$-4.44976 + 2.73152I$	$-0.80842 - 2.00184I$
$u = 0.816854 - 0.532908I$ $a = -0.987760 + 0.874778I$ $b = -0.12904 + 1.43500I$	$-4.44976 - 2.73152I$	$-0.80842 + 2.00184I$
$u = 0.920413 + 0.451372I$ $a = -1.08540 - 1.03931I$ $b = -0.20956 - 1.46882I$	$-0.91901 + 10.18330I$	$1.25382 - 7.21296I$
$u = 0.920413 - 0.451372I$ $a = -1.08540 + 1.03931I$ $b = -0.20956 + 1.46882I$	$-0.91901 - 10.18330I$	$1.25382 + 7.21296I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.769634 + 0.726428I$ $a = 0.688478 - 0.808047I$ $b = 0.00133 - 1.45662I$	$-6.94955 + 0.90110I$	$-5.44354 - 1.25880I$
$u = -0.769634 - 0.726428I$ $a = 0.688478 + 0.808047I$ $b = 0.00133 + 1.45662I$	$-6.94955 - 0.90110I$	$-5.44354 + 1.25880I$
$u = -0.405760 + 0.979630I$ $a = 0.166067 - 0.368101I$ $b = -0.194828 - 1.239410I$	$0.10785 - 2.26276I$	$-0.12423 + 3.11409I$
$u = -0.405760 - 0.979630I$ $a = 0.166067 + 0.368101I$ $b = -0.194828 + 1.239410I$	$0.10785 + 2.26276I$	$-0.12423 - 3.11409I$
$u = -0.064971 + 1.059860I$ $a = 0.213265 + 0.829397I$ $b = 0.155643 - 0.110588I$	$-1.26832 - 1.59690I$	$3.13274 + 4.73829I$
$u = -0.064971 - 1.059860I$ $a = 0.213265 - 0.829397I$ $b = 0.155643 + 0.110588I$	$-1.26832 + 1.59690I$	$3.13274 - 4.73829I$
$u = 0.211058 + 1.064720I$ $a = 0.031919 - 0.161023I$ $b = 0.211058 - 1.064720I$	-4.11368	$-8.21539 + 0.I$
$u = 0.211058 - 1.064720I$ $a = 0.031919 + 0.161023I$ $b = 0.211058 + 1.064720I$	-4.11368	$-8.21539 + 0.I$
$u = 0.758158 + 0.793503I$ $a = -0.585546 - 0.804617I$ $b = 0.04392 - 1.46343I$	$-1.96895 - 4.48385I$	$-0.56586 + 2.47352I$
$u = 0.758158 - 0.793503I$ $a = -0.585546 + 0.804617I$ $b = 0.04392 + 1.46343I$	$-1.96895 + 4.48385I$	$-0.56586 - 2.47352I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.726368 + 0.367752I$ $a = 1.28493 - 0.77998I$ $b = 0.189110 - 1.334780I$	$1.85425 - 1.80763I$	$4.25907 + 2.73625I$
$u = -0.726368 - 0.367752I$ $a = 1.28493 + 0.77998I$ $b = 0.189110 + 1.334780I$	$1.85425 + 1.80763I$	$4.25907 - 2.73625I$
$u = -0.194828 + 1.239410I$ $a = -0.281989 - 0.192252I$ $b = -0.405760 - 0.979630I$	$0.10785 + 2.26276I$	$0. - 3.11409I$
$u = -0.194828 - 1.239410I$ $a = -0.281989 + 0.192252I$ $b = -0.405760 + 0.979630I$	$0.10785 - 2.26276I$	$0. + 3.11409I$
$u = 0.189110 + 1.334780I$ $a = -0.830423 + 0.366693I$ $b = -0.726368 - 0.367752I$	$1.85425 + 1.80763I$	0
$u = 0.189110 - 1.334780I$ $a = -0.830423 - 0.366693I$ $b = -0.726368 + 0.367752I$	$1.85425 - 1.80763I$	0
$u = -0.12904 + 1.43500I$ $a = 0.879014 + 0.158365I$ $b = 0.816854 - 0.532908I$	$-4.44976 - 2.73152I$	0
$u = -0.12904 - 1.43500I$ $a = 0.879014 - 0.158365I$ $b = 0.816854 + 0.532908I$	$-4.44976 + 2.73152I$	0
$u = -0.07438 + 1.45158I$ $a = 0.838772 + 0.066973I$ $b = 0.803564 - 0.620127I$	$-4.65974 - 2.68588I$	0
$u = -0.07438 - 1.45158I$ $a = 0.838772 - 0.066973I$ $b = 0.803564 + 0.620127I$	$-4.65974 + 2.68588I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.00133 + 1.45662I$ $a = -0.770259 - 0.039909I$ $b = -0.769634 - 0.726428I$	$-6.94955 - 0.90110I$	0
$u = 0.00133 - 1.45662I$ $a = -0.770259 + 0.039909I$ $b = -0.769634 + 0.726428I$	$-6.94955 + 0.90110I$	0
$u = 0.04392 + 1.46343I$ $a = 0.737670 - 0.110790I$ $b = 0.758158 - 0.793503I$	$-1.96895 + 4.48385I$	0
$u = 0.04392 - 1.46343I$ $a = 0.737670 + 0.110790I$ $b = 0.758158 + 0.793503I$	$-1.96895 - 4.48385I$	0
$u = 0.18002 + 1.46427I$ $a = -0.975469 + 0.186914I$ $b = -0.892757 - 0.485854I$	$-6.19421 + 6.51836I$	0
$u = 0.18002 - 1.46427I$ $a = -0.975469 - 0.186914I$ $b = -0.892757 + 0.485854I$	$-6.19421 - 6.51836I$	0
$u = -0.20956 + 1.46882I$ $a = 1.015610 + 0.215863I$ $b = 0.920413 - 0.451372I$	$-0.91901 - 10.18330I$	0
$u = -0.20956 - 1.46882I$ $a = 1.015610 - 0.215863I$ $b = 0.920413 + 0.451372I$	$-0.91901 + 10.18330I$	0
$u = -0.255559 + 0.080028I$ $a = 3.70633 + 2.09787I$ $b = 0.142789 + 0.981947I$	$4.29768 + 4.29720I$	$6.75143 - 3.93304I$
$u = -0.255559 - 0.080028I$ $a = 3.70633 - 2.09787I$ $b = 0.142789 - 0.981947I$	$4.29768 - 4.29720I$	$6.75143 + 3.93304I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.155643 + 0.110588I$ $a = -4.33450 + 1.97373I$ $b = -0.064971 - 1.059860I$	$-1.26832 + 1.59690I$	$3.13274 - 4.73829I$
$u = 0.155643 - 0.110588I$ $a = -4.33450 - 1.97373I$ $b = -0.064971 + 1.059860I$	$-1.26832 - 1.59690I$	$3.13274 + 4.73829I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.000000I$ $a = -0.339110 + 0.822375I$ $b = -1.000000I$	$-2.96077 + 1.53058I$	$-3.48489 - 4.43065I$
$u = 1.000000I$ $a = -0.339110 - 0.822375I$ $b = -1.000000I$	$-2.96077 - 1.53058I$	$-3.48489 + 4.43065I$
$u = 1.000000I$ $a = 0.766826$ $b = -1.000000I$	-0.888787	-2.51890
$u = 1.000000I$ $a = 0.455697 + 1.200150I$ $b = -1.000000I$	$2.58269 - 4.40083I$	$0.74431 + 3.49859I$
$u = 1.000000I$ $a = 0.455697 - 1.200150I$ $b = -1.000000I$	$2.58269 + 4.40083I$	$0.74431 - 3.49859I$
$u = -1.000000I$ $a = -0.339110 + 0.822375I$ $b = 1.000000I$	$-2.96077 + 1.53058I$	$-3.48489 - 4.43065I$
$u = -1.000000I$ $a = -0.339110 - 0.822375I$ $b = 1.000000I$	$-2.96077 - 1.53058I$	$-3.48489 + 4.43065I$
$u = -1.000000I$ $a = 0.766826$ $b = 1.000000I$	-0.888787	-2.51890
$u = -1.000000I$ $a = 0.455697 + 1.200150I$ $b = 1.000000I$	$2.58269 - 4.40083I$	$0.74431 + 3.49859I$
$u = -1.000000I$ $a = 0.455697 - 1.200150I$ $b = 1.000000I$	$2.58269 + 4.40083I$	$0.74431 - 3.49859I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^5+u^4+2u^3+u^2+u+1)^2)(u^{21}-5u^{20}+\cdots-11u+3)^2$ $\cdot(u^{32}-7u^{31}+\cdots-629u+136)$
c_2, c_7, c_8	$(u^{10}+5u^8+8u^6+3u^4-u^2+1)(u^{21}+u^{20}+\cdots-u-1)^2$ $\cdot(u^{32}-3u^{31}+\cdots-9u+2)$
c_3	$(u^{10}+u^8+8u^6+3u^4+3u^2+1)(u^{21}-u^{20}+\cdots-3u-1)^2$ $\cdot(u^{32}+3u^{31}+\cdots-45u+10)$
c_4, c_5, c_6 c_{10}, c_{11}, c_{12}	$((u^2+1)^5)(u^{32}+20u^{30}+\cdots-2u+1)(u^{42}+u^{41}+\cdots+2u+1)$
c_9	$(u^{10}-3u^8+4u^6-u^4-u^2+1)(u^{21}+7u^{20}+\cdots+3u-1)^2$ $\cdot(u^{32}-21u^{31}+\cdots-31521u+3794)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^5+3y^4+4y^3+y^2-y-1)^2)(y^{21}+3y^{20}+\cdots-41y-9)^2$ $\cdot(y^{32}+9y^{31}+\cdots+185079y+18496)$
c_2, c_7, c_8	$((y^5+5y^4+8y^3+3y^2-y+1)^2)(y^{21}+19y^{20}+\cdots+3y-1)^2$ $\cdot(y^{32}+29y^{31}+\cdots+3y+4)$
c_3	$((y^5+y^4+8y^3+3y^2+3y+1)^2)(y^{21}-y^{20}+\cdots+3y-1)^2$ $\cdot(y^{32}+y^{31}+\cdots+1795y+100)$
c_4, c_5, c_6 c_{10}, c_{11}, c_{12}	$((y+1)^{10})(y^{32}+40y^{31}+\cdots+10y+1)(y^{42}+35y^{41}+\cdots-32y+1)$
c_9	$((y^5-3y^4+4y^3-y^2-y+1)^2)(y^{21}+15y^{20}+\cdots+27y-1)^2$ $\cdot(y^{32}+9y^{31}+\cdots+46718595y+14394436)$