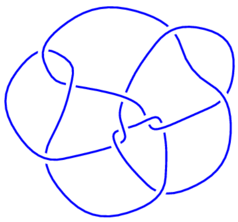
$11a_{232}$ $(K11a_{232})$



[1]

Arc Sequences

$$\rightarrow \underset{7}{\downarrow} \rightarrow \underset{1}{\downarrow} \rightarrow \underset{9}{\downarrow} \rightarrow \underset{11}{\uparrow} \rightarrow \underset{3}{\uparrow} \rightarrow \underset{10}{\uparrow} \rightarrow \underset{2}{\downarrow} \rightarrow \underset{4}{\downarrow} \rightarrow \underset{6}{\uparrow} \rightarrow \underset{8}{\uparrow} \rightarrow \underset{5}{\uparrow} \rightarrow$$

Solving Sequence

$$4{,}11 \underset{c_4}{\rightarrow} 5{,}8 \underset{c_8}{\longrightarrow} 9 \underset{c_{11}}{\longrightarrow} 1 \underset{c_3}{\longrightarrow} 3 \underset{c_5}{\longrightarrow} 6 \underset{c_2}{\longrightarrow} 2 \underset{c_7}{\longrightarrow} 7 \underset{c_{10}}{\longrightarrow} 10 \gg c_1, c_6, c_9$$

Representation Ideals

$$I = \bigcap_{i=1}^{4} I_i^u \bigcap I_1^v$$

$$\begin{aligned}
I_1^u &= \langle u^2 - 2,\ b + 1,\ 6a - u - 2\rangle \\
I_2^u &= \langle 16a^4 - 16a^3 + 20a^2 - 8a + 1,\ 16a^3 - 12a^2 + b + 18a - 4,\ 16a^3 - 12a^2 + 18a + u - 4\rangle \\
I_3^u &= \langle u^{28} + 3u^{27} + \cdots - 170u - 26, \\
&\quad 5.85513 \times 10^{37}u^{27} + 1.83250 \times 10^{38}u^{26} + \cdots + 5.88612 \times 10^{39}b - 7.33958 \times 10^{39}, \\
&\quad 1.64827 \times 10^{39}u^{27} + 7.18697 \times 10^{39}u^{26} + \cdots + 3.06078 \times 10^{41}a - 1.00476 \times 10^{42}\rangle \\
I_4^u &= \langle b^{40} + b^{39} + \cdots + 62b - 17,\ 1.46509 \times 10^{38}u + 8.83675 \times 10^{38}b^{39} + \cdots + 5.29308 \times 10^{40}b - 1.09806 \times 10^{40}, \\
&\quad - 2.24360 \times 10^{39}b^{39} + 4.19937 \times 10^{38}b^{38} + \cdots + 1.46509 \times 10^{38}a + 3.47528 \times 10^{40}\rangle
\end{aligned}$$

$$I_1^v = \langle v + 1,\ b - 1,\ a\rangle$$

There are 5 irreducible components with 75 representations.

[1]The knot diagram image is adapter from "C. Livingston and A. H. Moore, KnotInfo: Table of Knot Invariants, http://www.indiana.edu/ knotinfo"

I. $I_1^u = \langle u^2 - 2,\ b + 1,\ 6a - u - 2 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.41421$ $a=\ \ 0.0976311$ $b=-1.00000$	-1.64493	4.00000
$u=\ \ 1.41421$ $a=\ \ 0.569036$ $b=-1.00000$	-1.64493	4.00000

II. $\boldsymbol{I^u_2 =}$
$\boldsymbol{\langle 16a^4-16a^3+20a^2-8a+1,\ 16a^3-12a^2+b+18a-4,\ 16a^3-12a^2+18a+u-4\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} a \\ -16a^3+12a^2-18a+4 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 4a^3-2a^2+4a \\ 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ -16a^3+12a^2-18a+4 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 16a^3-12a^2+18a-4 \\ -16a^3+12a^2-18a+4 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -16a^3+12a^2-16a+4 \\ -32a^3+24a^2-36a+8 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 4a^3-2a^2+4a \\ -4a^3+2a^2-4a+1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -16a^3+12a^2-16a+3 \\ -16a^3+8a^2-16a+3 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 8a^3-4a^2+8a-1 \\ -8a^3+4a^2-8a+3 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} a \\ -16a^3+12a^2-19a+4 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} a \\ -16a^3+12a^2-19a+4 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes =**unknown**

(iv) Complex Volumes and Cusp Shapes

Solution to I_2^u		$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$1.00000I$		
$a =$	$0.250000 - 0.066987I$	$-2.02988I$	$2.00000 + 3.46410I$
$b =$	$1.00000I$		
$u =$	$-1.00000I$		
$a =$	$0.250000 + 0.066987I$	$2.02988I$	$2.00000 - 3.46410I$
$b =$	$-1.00000I$		
$u =$	$1.00000I$		
$a =$	$0.250000 - 0.933013I$	$2.02988I$	$2.00000 - 3.46410I$
$b =$	$1.00000I$		
$u =$	$-1.00000I$		
$a =$	$0.250000 + 0.933013I$	$-2.02988I$	$2.00000 + 3.46410I$
$b =$	$-1.00000I$		

III. $\boldsymbol{I_3^u =}$
$\boldsymbol{\langle u^{28}+3u^{27}+\cdots-170u-26,\ 5.86\times10^{37}u^{27}+1.83\times10^{38}u^{26}+\cdots+5.89\times10^{39}b-7.34\times10^{39},\ 1.65\times10^{39}u^{27}+7.19\times10^{39}u^{26}+\cdots+3.06\times10^{41}a-1.00\times10^{42}\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-0.00538513u^{27}-0.0234809u^{26}+\cdots+6.87773u+3.28271\\-0.00994736u^{27}-0.0311326u^{26}+\cdots+7.16726u+1.24693\end{pmatrix}$$
$$a_5 = \begin{pmatrix}0.0327754u^{27}+0.0922086u^{26}+\cdots-16.1192u-1.47903\\0.00785800u^{27}+0.0214895u^{26}+\cdots-2.02934u+0.353269\end{pmatrix}$$
$$a_8 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-u\\u\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-0.00487741u^{27}-0.0297811u^{26}+\cdots+11.6089u+5.68071\\-0.0179247u^{27}-0.0563509u^{26}+\cdots+12.0029u+2.33594\end{pmatrix}$$
$$a_3 = \begin{pmatrix}u^2+1\\-u^2\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0.0393429u^{27}+0.109272u^{26}+\cdots-18.5927u-1.38439\\0.00861601u^{27}+0.0246568u^{26}+\cdots-1.92311u+0.398645\end{pmatrix}$$
$$a_2 = \begin{pmatrix}0.0689732u^{27}+0.205863u^{26}+\cdots-37.0897u-6.30200\\0.0271802u^{27}+0.0697906u^{26}+\cdots-10.5271u-0.752393\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0.0721183u^{27}+0.201481u^{26}+\cdots-34.7119u-3.86342\\0.0177257u^{27}+0.0501261u^{26}+\cdots-4.14030u+0.592855\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-0.00538513u^{27}-0.0234809u^{26}+\cdots+6.87773u+3.28271\\-0.00820213u^{27}-0.0251389u^{26}+\cdots+5.78192u+1.05647\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-0.00538513u^{27}-0.0234809u^{26}+\cdots+6.87773u+3.28271\\-0.00820213u^{27}-0.0251389u^{26}+\cdots+5.78192u+1.05647\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.79695$ $a=-0.455425$ $b=\ \ 1.16749$	-0.740696	13.3632
$u=-1.262863-0.217604I$ $a=-0.804721+0.692034I$ $b=\ \ 1.320306-0.365382I$	$6.13143-10.28482I$	$5.46409+7.36805I$
$u=-1.262863+0.217604I$ $a=-0.804721-0.692034I$ $b=\ \ 1.320306+0.365382I$	$6.13143+10.28482I$	$5.46409-7.36805I$
$u=-0.76458-1.59693I$ $a=\ \ 0.212160-0.429771I$ $b=-1.343249-0.043119I$	$10.03541+2.66746I$	$10.12620-2.06407I$
$u=-0.76458+1.59693I$ $a=\ \ 0.212160+0.429771I$ $b=-1.343249+0.043119I$	$10.03541-2.66746I$	$10.12620+2.06407I$
$u=-0.564972-0.419726I$ $a=\ \ 0.500481+1.106724I$ $b=\ \ 0.619030-0.625848I$	$-2.54273-3.94340I$	$-3.92883+8.11948I$
$u=-0.564972+0.419726I$ $a=\ \ 0.500481-1.106724I$ $b=\ \ 0.619030+0.625848I$	$-2.54273+3.94340I$	$-3.92883-8.11948I$
$u=-0.51262-1.48286I$ $a=-0.182478-1.234989I$ $b=-1.45739+0.55230I$	$11.5116-16.4523I$	$6.49151+8.57137I$
$u=-0.51262+1.48286I$ $a=-0.182478+1.234989I$ $b=-1.45739-0.55230I$	$11.5116+16.4523I$	$6.49151-8.57137I$
$u=-0.47948-1.61552I$ $a=-0.242338-0.760643I$ $b=-1.278995+0.337291I$	$5.51780-7.86345I$	$5.31743+6.29867I$

Solution to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.47948 + 1.61552I$ $a = -0.242338 + 0.760643I$ $b = -1.278995 - 0.337291I$	$5.51780 + 7.86345I$	$5.31743 - 6.29867I$
$u = -0.237420 - 1.011876I$ $a = 0.180441 + 0.427403I$ $b = -0.449964 - 0.955908I$	$-0.873376 + 0.763619I$	$-0.834378 + 1.006413I$
$u = -0.237420 + 1.011876I$ $a = 0.180441 - 0.427403I$ $b = -0.449964 + 0.955908I$	$-0.873376 - 0.763619I$	$-0.834378 - 1.006413I$
$u = -0.165189 - 0.201586I$ $a = 2.20087 - 0.36216I$ $b = 0.197638 - 0.798678I$	$-1.59476 + 1.80480I$	$-5.09710 - 1.86642I$
$u = -0.165189 + 0.201586I$ $a = 2.20087 + 0.36216I$ $b = 0.197638 + 0.798678I$	$-1.59476 - 1.80480I$	$-5.09710 + 1.86642I$
$u = -0.039307 - 1.237679I$ $a = 0.065832 + 0.775949I$ $b = -0.11349 - 1.56139I$	$1.50736 - 2.52809I$	$9.13783 + 4.03367I$
$u = -0.039307 + 1.237679I$ $a = 0.065832 - 0.775949I$ $b = -0.11349 + 1.56139I$	$1.50736 + 2.52809I$	$9.13783 - 4.03367I$
$u = 0.073787 - 0.991855I$ $a = -0.190019 + 0.931245I$ $b = -0.138862 - 0.028897I$	$1.72032 + 2.04511I$	$7.95707 - 3.99629I$
$u = 0.073787 + 0.991855I$ $a = -0.190019 - 0.931245I$ $b = -0.138862 + 0.028897I$	$1.72032 - 2.04511I$	$7.95707 + 3.99629I$
$u = 0.246070 - 0.616533I$ $a = -0.453758 + 0.557396I$ $b = -0.351747 - 0.453003I$	$0.183505 + 1.179084I$	$2.03457 - 5.91305I$

Solution to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.246070 + 0.616533I$ $a = -0.453758 - 0.557396I$ $b = -0.351747 + 0.453003I$	$0.183505 - 1.179084I$	$2.03457 + 5.91305I$
$u = 0.52803 - 1.50973I$ $a = 0.095378 - 1.118223I$ $b = 1.47134 + 0.46584I$	$13.2391 + 10.1973I$	$8.61620 - 4.40012I$
$u = 0.52803 + 1.50973I$ $a = 0.095378 + 1.118223I$ $b = 1.47134 - 0.46584I$	$13.2391 - 10.1973I$	$8.61620 + 4.40012I$
$u = 0.64640 - 1.61358I$ $a = -0.122411 - 0.622211I$ $b = 1.399258 + 0.113511I$	$12.33885 + 4.05891I$	$10.87964 - 3.34376I$
$u = 0.64640 + 1.61358I$ $a = -0.122411 + 0.622211I$ $b = 1.399258 - 0.113511I$	$12.33885 - 4.05891I$	$10.87964 + 3.34376I$
$u = 1.11268$ $a = -0.111178$ $b = 0.737049$	-2.48664	-6.62101
$u = 1.374273 - 0.188673I$ $a = 0.793095 + 0.432189I$ $b = -1.326136 - 0.226084I$	$7.76911 + 3.65914I$	$8.46465 - 3.07912I$
$u = 1.374273 + 0.188673I$ $a = 0.793095 - 0.432189I$ $b = -1.326136 + 0.226084I$	$7.76911 - 3.65914I$	$8.46465 + 3.07912I$

IV.

$\boldsymbol{I_4^u = \langle b^{40}+b^{39}+\cdots+62b-17,\ 1.47\times10^{38}u+8.84\times10^{38}b^{39}+\cdots+5.29\times10^{40}b-1.10\times10^{40},\ -2.24\times10^{39}b^{39}+4.20\times10^{38}b^{38}+\cdots+1.47\times10^{38}a+3.48\times10^{40}\rangle}$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 15.3137b^{39} - 2.86628b^{38} + \cdots + 1042.14b - 237.205 \\ b \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 18.1799b^{39} - 2.65297b^{38} + \cdots + 1186.65b - 259.332 \\ -b^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0 \\ -6.03152b^{39} + 0.553556b^{38} + \cdots - 361.279b + 74.9478 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 6.03152b^{39} - 0.553556b^{38} + \cdots + 361.279b - 74.9478 \\ -6.03152b^{39} + 0.553556b^{38} + \cdots - 361.279b + 74.9478 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -5.51925b^{39} + 0.636745b^{38} + \cdots - 344.347b + 71.8536 \\ -b^3 + b \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -9.32536b^{39} + 1.34018b^{38} + \cdots - 615.450b + 134.266 \\ 9.32536b^{39} - 1.34018b^{38} + \cdots + 615.450b - 133.266 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 15.3119b^{39} - 1.61262b^{38} + \cdots + 957.894b - 202.484 \\ -3.20706b^{39} - 0.115380b^{38} + \cdots - 141.669b + 19.2163 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1.22847b^{39} + 0.256411b^{38} + \cdots + 29.1629b - 1.21559 \\ 5.22480b^{39} - 0.852228b^{38} + \cdots + 356.034b - 77.9153 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 5.60191b^{39} - 0.569293b^{38} + \cdots + 343.116b - 73.0724 \\ 1.20951b^{39} - 0.423156b^{38} + \cdots + 108.425b - 25.8667 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 15.3137b^{39} - 2.86628b^{38} + \cdots + 1042.14b - 237.205 \\ -7.30074b^{39} + 1.70611b^{38} + \cdots - 508.014b + 122.126 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 15.3137b^{39} - 2.86628b^{38} + \cdots + 1042.14b - 237.205 \\ -7.30074b^{39} + 1.70611b^{38} + \cdots - 508.014b + 122.126 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.328206 - 1.357608I$ $a = -0.253033 + 1.022991I$ $b = -1.54550 - 0.58408I$	$6.57229 + 10.05773I$	$5.29166 - 7.26612I$
$u = 0.328206 + 1.357608I$ $a = -0.253033 - 1.022991I$ $b = -1.54550 + 0.58408I$	$6.57229 - 10.05773I$	$5.29166 + 7.26612I$
$u = -0.022410 + 1.403753I$ $a = -0.030624 + 0.809502I$ $b = -1.48897 - 0.75285I$	$11.26460 + 2.84648I$	$9.60998 - 2.97861I$
$u = -0.022410 - 1.403753I$ $a = -0.030624 - 0.809502I$ $b = -1.48897 + 0.75285I$	$11.26460 - 2.84648I$	$9.60998 + 2.97861I$
$u = -0.692333 + 0.156175I$ $a = 1.127518 + 0.089027I$ $b = -1.219461 - 0.187157I$	$2.96536 + 0.81573I$	$2.32828 - 1.07888I$
$u = -0.692333 - 0.156175I$ $a = 1.127518 - 0.089027I$ $b = -1.219461 + 0.187157I$	$2.96536 - 0.81573I$	$2.32828 + 1.07888I$
$u = 0.274747 + 1.069603I$ $a = -0.57377 - 2.14238I$ $b = -1.156832 - 0.007308I$	$4.55875 + 2.13456I$	$3.49102 - 2.16962I$
$u = 0.274747 - 1.069603I$ $a = -0.57377 + 2.14238I$ $b = -1.156832 + 0.007308I$	$4.55875 - 2.13456I$	$3.49102 + 2.16962I$
$u = 0.327541 - 1.260029I$ $a = -0.570820 + 1.003560I$ $b = -1.151183 - 0.376978I$	$1.63329 + 3.96853I$	$0.10651 - 3.79787I$
$u = 0.327541 + 1.260029I$ $a = -0.570820 - 1.003560I$ $b = -1.151183 + 0.376978I$	$1.63329 - 3.96853I$	$0.10651 + 3.79787I$

Solution to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.358818$ $a=-0.321007$ $b=-1.13898$	2.60969	-2.76209
$u=-0.201509-0.663357I$ $a=\ \ 2.91895+2.11390I$ $b=-1.044843-0.243936I$	$4.95641-2.35832I$	$5.64775+4.49783I$
$u=-0.201509+0.663357I$ $a=\ \ 2.91895-2.11390I$ $b=-1.044843+0.243936I$	$4.95641+2.35832I$	$5.64775-4.49783I$
$u=-0.198534+1.239653I$ $a=\ \ 0.357530+1.265578I$ $b=-0.598773-0.548760I$	$6.05405+2.16136I$	$7.26252-3.31855I$
$u=-0.198534-1.239653I$ $a=\ \ 0.357530-1.265578I$ $b=-0.598773+0.548760I$	$6.05405-2.16136I$	$7.26252+3.31855I$
$u=-0.295567+1.352046I$ $a=-0.135077+0.965530I$ $b=-0.265136-1.197752I$	$7.72048+4.43308I$	$7.31630-2.52728I$
$u=-0.295567-1.352046I$ $a=-0.135077-0.965530I$ $b=-0.265136+1.197752I$	$7.72048-4.43308I$	$7.31630+2.52728I$
$u=\ \ 0.773104-0.153161I$ $a=\ \ 0.77350+1.55537I$ $b=-0.059958-0.789733I$	$1.80703+6.07240I$	$0.54715-5.87540I$
$u=\ \ 0.773104+0.153161I$ $a=\ \ 0.77350-1.55537I$ $b=-0.059958+0.789733I$	$1.80703-6.07240I$	$0.54715+5.87540I$
$u=\ \ 0.327541+1.260029I$ $a=-0.108388+0.511791I$ $b=-0.046221-0.711923I$	$1.63329-3.96853I$	$0.10651+3.79787I$

Solution to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.327541 - 1.260029I$ $a = -0.108388 - 0.511791I$ $b = -0.046221 + 0.711923I$	$1.63329 + 3.96853I$	$0.10651 - 3.79787I$
$u = 0.328206 + 1.357608I$ $a = 0.261524 + 0.913368I$ $b = 0.094315 - 1.289963I$	$6.57229 - 10.05773I$	$5.29166 + 7.26612I$
$u = 0.328206 - 1.357608I$ $a = 0.261524 - 0.913368I$ $b = 0.094315 + 1.289963I$	$6.57229 + 10.05773I$	$5.29166 - 7.26612I$
$u = -0.692333 - 0.156175I$ $a = -1.24821 + 1.31389I$ $b = 0.245936 - 0.564099I$	$2.96536 - 0.81573I$	$2.32828 + 1.07888I$
$u = -0.692333 + 0.156175I$ $a = -1.24821 - 1.31389I$ $b = 0.245936 + 0.564099I$	$2.96536 + 0.81573I$	$2.32828 - 1.07888I$
$u = 0.274747 - 1.069603I$ $a = -2.08616 - 0.57180I$ $b = 0.509345 - 0.095450I$	$4.55875 - 2.13456I$	$3.49102 + 2.16962I$
$u = 0.274747 + 1.069603I$ $a = -2.08616 + 0.57180I$ $b = 0.509345 + 0.095450I$	$4.55875 + 2.13456I$	$3.49102 - 2.16962I$
$u = 0.772326$ $a = -0.191642 + 0.609036I$ $b = 0.616504 - 0.374474I$	-2.26801	-4.44026
$u = 0.772326$ $a = -0.191642 - 0.609036I$ $b = 0.616504 + 0.374474I$	-2.26801	-4.44026
$u = -0.358818$ $a = -3.85324$ $b = 0.733960$	2.60969	-2.76209

Solution to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.201509 - 0.663357I$ $a = -2.23143 + 3.35640I$ $b = 1.101169 - 0.208325I$	$4.95641 - 2.35832I$	$5.64775 + 4.49783I$
$u = -0.201509 + 0.663357I$ $a = -2.23143 - 3.35640I$ $b = 1.101169 + 0.208325I$	$4.95641 + 2.35832I$	$5.64775 - 4.49783I$
$u = 0.773104 + 0.153161I$ $a = -1.227190 + 0.439064I$ $b = 1.240732 - 0.365535I$	$1.80703 - 6.07240I$	$0.54715 + 5.87540I$
$u = 0.773104 - 0.153161I$ $a = -1.227190 - 0.439064I$ $b = 1.240732 + 0.365535I$	$1.80703 + 6.07240I$	$0.54715 - 5.87540I$
$u = -0.198534 - 1.239653I$ $a = 0.969357 + 0.641940I$ $b = 1.307697 - 0.029974I$	$6.05405 - 2.16136I$	$7.26252 + 3.31855I$
$u = -0.198534 + 1.239653I$ $a = 0.969357 - 0.641940I$ $b = 1.307697 + 0.029974I$	$6.05405 + 2.16136I$	$7.26252 - 3.31855I$
$u = -0.295567 - 1.352046I$ $a = 0.273919 + 0.879482I$ $b = 1.56466 - 0.43256I$	$7.72048 - 4.43308I$	$7.31630 + 2.52728I$
$u = -0.295567 + 1.352046I$ $a = 0.273919 - 0.879482I$ $b = 1.56466 + 0.43256I$	$7.72048 + 4.43308I$	$7.31630 - 2.52728I$
$u = -0.022410 + 1.403753I$ $a = 0.061165 + 0.607750I$ $b = 1.59903 - 0.60741I$	$11.26460 + 2.84648I$	$9.60998 - 2.97861I$
$u = -0.022410 - 1.403753I$ $a = 0.061165 - 0.607750I$ $b = 1.59903 + 0.60741I$	$11.26460 - 2.84648I$	$9.60998 + 2.97861I$

V. $\boldsymbol{I_1^v = \langle v+1,\ b-1,\ a\rangle}$

(i) Arc colorings

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

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

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

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

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

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

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

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

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

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

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

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

VI. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1, c_7	$u(u^2-2)(u^4-u^2+1)$ $(-1+3u^2-5u^3-3u^4+10u^5+2u^6-18u^7+u^8+24u^9-7u^{10}-23u^{11}+10u^{12}+18u^{13}-$ $(u^{28}+3u^{27}+\cdots-14u-10)$
c_2	$u(u+2)^2(u^2+u+1)^2$ $(1+6u+15u^2+47u^3+119u^4+272u^5+536u^6+908u^7+1343u^8+1730u^9+1959u^{10}+19$ $(u^{28}+13u^{27}+\cdots-404u+100)$
c_3, c_8	$u(u^2-2)(u^2+1)^2$ $(-1-2u+u^2-u^3+9u^4+4u^5-2u^6+10u^7-25u^8-2u^9-3u^{10}-31u^{11}+48u^{12}-42u^{13}$ $(u^{28}+3u^{27}+\cdots-170u-26)$
c_4, c_9	$(u-1)(u+1)^2(u^2+1)^2(u^{28}+u^{27}+\cdots+14u+1)$ $(u^{40}+u^{39}+\cdots+62u-17)$
c_5, c_{10}	$(u-1)(9u^2-6u-1)(16u^4-32u^3+20u^2-4u+1)$ $(16u^{28}-48u^{27}+\cdots+4u-1)(u^{40}+5u^{39}+\cdots+3518u+8903)$
c_6, c_{11}	$(u-1)^2(u+1)(u^2+1)^2(u^{28}+u^{27}+\cdots+14u+1)$ $(u^{40}+u^{39}+\cdots+62u-17)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_7	$y(y-2)^2(y^2-y+1)^2$ $(1-6y+15y^2-47y^3+119y^4-272y^5+536y^6-908y^7+1343y^8-1730y^9+1959y^{10}-195$ $(y^{28}-13y^{27}+\cdots+404y+100)$
c_2	$y(y-4)^2(y^2+y+1)^2$ $(1-6y-101y^2-831y^3-3537y^4-8320y^5-1.09\times10^4y^6-5792y^7+4571y^8+1.06\times10^4y$ $(y^{28}+7y^{27}+\cdots-672016y+10000)$
c_3, c_8	$y(y-2)^2(y+1)^4$ $(1-6y-21y^2+37y^3+175y^4-84y^5-756y^6-292y^7+1655y^8+1954y^9-1117y^{10}-3803$ $(y^{28}+17y^{27}+\cdots+8332y+676)$
c_4, c_6, c_9 c_{11}	$(y-1)^3(y+1)^4(y^{28}-19y^{27}+\cdots-94y+1)$ $(y^{40}-29y^{39}+\cdots-2824y+289)$
c_5, c_{10}	$(y-1)(81y^2-54y+1)(256y^4-384y^3+176y^2+24y+1)$ $(256y^{28}-5248y^{27}+\cdots-74y+1)$ $(y^{40}-25y^{39}+\cdots-6761242056y+79263409)$