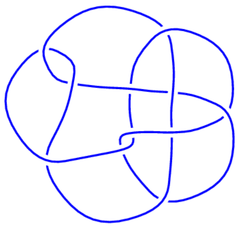
$11n_{94}$ $(K11n_{94})$



[1]

Arc Sequences

$$\rightarrow \downarrow_{5} \rightarrow \downarrow_{1} \rightarrow \downarrow_{9} \rightarrow \uparrow_{10} \rightarrow \downarrow_{2} \rightarrow \uparrow_{4} \rightarrow \downarrow_{3} \rightarrow \uparrow_{1} \rightarrow \downarrow_{7} \rightarrow \uparrow_{6} \rightarrow \uparrow_{9} \rightarrow$$

Solving Sequence

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

Representation Ideals

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

$$I_1^u = \langle a^2 - a - 1,\ b - 1,\ u - 1\rangle$$
$$I_2^u = \langle u^{10} + 2u^9 - 4u^7 - 2u^6 + 4u^5 + 4u^4 - u^3 - u^2 + u + 1,\ u^9 + 2u^8 - 4u^6 - 2u^5 + 4u^4 + 3u^3 - u^2 + b + 1,$$
$$- u^9 - 2u^8 + u^7 + 5u^6 + u^5 - 7u^4 - 3u^3 + 4u^2 + a + u - 2\rangle$$
$$I_3^u = \langle a^{20} - 6a^{18} + \cdots - 4188a + 1201,$$
$$2.95869 \times 10^{32}u - 1.55502 \times 10^{30}a^{19} + \cdots - 3.68425 \times 10^{33}a + 9.60791 \times 10^{32},$$
$$2.95869 \times 10^{32}b - 1.22787 \times 10^{30}a^{19} + \cdots - 1.66732 \times 10^{33}a + 7.60880 \times 10^{32}\rangle$$
$$I_4^u = \langle u^{19} - 5u^{18} + \cdots + 10u^2 - 3,\ 16u^{18} - 65u^{17} + \cdots + 39b + 33,\ -20u^{18} + 91u^{17} + \cdots + 39a - 129\rangle$$

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

There are 5 irreducible components with 52 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. $I^u_1 = \langle a^2 - a - 1,\ b - 1,\ u - 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -0.618034$ $b = 1.00000$	0	5.00000
$u = 1.00000$ $a = 1.61803$ $b = 1.00000$	0	5.00000

II. $\boldsymbol{I_2^u = \langle u^{10} + 2u^9 + \cdots + u + 1,\ u^9 + 2u^8 - 4u^6 - 2u^5 + 4u^4 + 3u^3 - u^2 + b + 1,\ -u^9 - 2u^8 + \cdots + a - 2\rangle}$

(i) Arc colorings

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

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

$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^9 + 2u^8 - u^7 - 5u^6 - u^5 + 7u^4 + 3u^3 - 4u^2 - u + 2 \\ -u^9 - 2u^8 + 4u^6 + 2u^5 - 4u^4 - 3u^3 + u^2 - 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 2u^9 + 4u^8 - u^7 - 9u^6 - 3u^5 + 11u^4 + 6u^3 - 5u^2 - u + 3 \\ -u^9 - 2u^8 + 4u^6 + 2u^5 - 4u^4 - 3u^3 + u^2 - 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^9 + 2u^8 - u^7 - 5u^6 - u^5 + 6u^4 + 3u^3 - 3u^2 - u + 1 \\ -u^8 - u^7 + u^6 + 3u^5 - 3u^3 - u^2 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u^9 - u^8 + 2u^7 + 3u^6 - 3u^5 - 4u^4 + 2u^3 + 3u^2 - 2u \\ u^9 + u^8 - 2u^7 - 3u^6 + 2u^5 + 4u^4 - 2u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^8 + u^7 - u^6 - 3u^5 + u^4 + 3u^3 + u^2 - u + 1 \\ -u^9 - u^8 + u^7 + 2u^6 - u^5 - 2u^4 + u^3 - 2u - 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -2u^9 - 2u^8 + 3u^7 + 6u^6 - 3u^5 - 8u^4 + 4u^2 - u - 1 \\ u^9 + u^8 - u^7 - 3u^6 + 3u^4 + 2u^3 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -2u^9 - 2u^8 + 3u^7 + 6u^6 - 3u^5 - 8u^4 + 4u^2 - u - 1 \\ u^9 + u^8 - u^7 - 3u^6 + 3u^4 + 2u^3 \end{pmatrix}$$

(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
$u = -1.032958 - 0.512793I$ $a = -0.926519 + 0.444783I$ $b = -0.031024 - 0.608247I$	$-1.82490 - 7.04514I$	$-4.29839 + 6.63243I$
$u = -1.032958 + 0.512793I$ $a = -0.926519 - 0.444783I$ $b = -0.031024 + 0.608247I$	$-1.82490 + 7.04514I$	$-4.29839 - 6.63243I$
$u = -0.945660 - 0.933377I$ $a = -1.34045 - 0.96068I$ $b = 2.03589 - 0.22886I$	$8.40249 - 3.42159I$	$1.58287 + 2.15087I$
$u = -0.945660 + 0.933377I$ $a = -1.34045 + 0.96068I$ $b = 2.03589 + 0.22886I$	$8.40249 + 3.42159I$	$1.58287 - 2.15087I$
$u = -0.620721 - 0.483253I$ $a = 0.78365 - 1.55026I$ $b = -0.186622 + 0.818442I$	$-0.43993 + 2.89386I$	$-0.09413 - 2.87221I$
$u = -0.620721 + 0.483253I$ $a = 0.78365 + 1.55026I$ $b = -0.186622 - 0.818442I$	$-0.43993 - 2.89386I$	$-0.09413 + 2.87221I$
$u = 0.517593 - 0.494789I$ $a = -0.808469 + 0.682785I$ $b = 0.250433 + 1.183286I$	$-0.42431 + 4.26902I$	$-1.08356 - 8.09272I$
$u = 0.517593 + 0.494789I$ $a = -0.808469 - 0.682785I$ $b = 0.250433 - 1.183286I$	$-0.42431 - 4.26902I$	$-1.08356 + 8.09272I$
$u = 1.081745 - 0.414901I$ $a = 0.291782 - 0.133729I$ $b = 0.431318 - 0.661100I$	$-2.42349 - 0.47280I$	$-4.60679 + 3.67832I$
$u = 1.081745 + 0.414901I$ $a = 0.291782 + 0.133729I$ $b = 0.431318 + 0.661100I$	$-2.42349 + 0.47280I$	$-4.60679 - 3.67832I$

III.

$\boldsymbol{I^u_3 = \langle a^{20}-6a^{18}+\cdots-4188a+1201,\ 2.96\times 10^{32}u-1.56\times 10^{30}a^{19}+\cdots-3.68\times 10^{33}a+9.61\times 10^{32},\ 2.96\times 10^{32}b-1.23\times 10^{30}a^{19}+\cdots-1.67\times 10^{33}a+7.61\times 10^{32}\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ 0.00525577a^{19} + 0.00765345a^{18} + \cdots + 12.4523a - 3.24736 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ -0.000182324a^{19} - 0.000118475a^{18} + \cdots - 0.207278a + 1.68228 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.000182324a^{19} + 0.000118475a^{18} + \cdots + 0.207278a - 0.682276 \\ -0.000182324a^{19} - 0.000118475a^{18} + \cdots - 0.207278a + 1.68228 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.00525577a^{19} - 0.00765345a^{18} + \cdots - 12.4523a + 3.24736 \\ 0.00273935a^{19} + 0.00105573a^{18} + \cdots + 12.2864a - 5.24550 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} a \\ 0.00415003a^{19} + 0.00812433a^{18} + \cdots + 5.63535a - 2.57168 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.00415003a^{19} - 0.00812433a^{18} + \cdots - 4.63535a + 2.57168 \\ 0.00415003a^{19} + 0.00812433a^{18} + \cdots + 5.63535a - 2.57168 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.00334258a^{19} - 0.00329818a^{18} + \cdots - 8.75448a + 4.89889 \\ 0.00761109a^{19} + 0.0125319a^{18} + \cdots + 14.4711a - 7.68954 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.00812433a^{19} + 0.0147731a^{18} + \cdots + 14.8087a - 3.98419 \\ 0.00457818a^{19} + 0.00486854a^{18} + \cdots + 12.4300a - 4.18396 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.00286856a^{19} + 0.00711960a^{18} + \cdots + 2.35635a - 0.736834 \\ 0.00731753a^{19} + 0.00592427a^{18} + \cdots + 24.7163a - 9.42947 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.00765469a^{19} + 0.00892224a^{18} + \cdots + 19.7027a - 7.41292 \\ 0.0000362362a^{19} - 0.00329152a^{18} + \cdots + 4.36610a - 0.559203 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.00765469a^{19} + 0.00892224a^{18} + \cdots + 19.7027a - 7.41292 \\ 0.0000362362a^{19} - 0.00329152a^{18} + \cdots + 4.36610a - 0.559203 \end{pmatrix}$$

(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
$u = -0.580680 - 0.133301I$ $a = -2.24080 - 1.97323I$ $b = 0.403939 - 0.912038I$	$-1.56776 - 3.93250I$	$-8.27914 + 6.71393I$
$u = -0.580680 + 0.133301I$ $a = -2.24080 + 1.97323I$ $b = 0.403939 + 0.912038I$	$-1.56776 + 3.93250I$	$-8.27914 - 6.71393I$
$u = -1.059926 - 0.922349I$ $a = -1.22140 - 1.07135I$ $b = 2.05160 - 0.78425I$	$8.86503 - 5.36397I$	$3.49612 + 6.50559I$
$u = -1.059926 + 0.922349I$ $a = -1.22140 + 1.07135I$ $b = 2.05160 + 0.78425I$	$8.86503 + 5.36397I$	$3.49612 - 6.50559I$
$u = 0.541733 - 0.670646I$ $a = -1.108004 - 0.503913I$ $b = 0.88831 + 1.63472I$	$1.08979 + 4.58635I$	$4.20678 - 7.42430I$
$u = 0.541733 + 0.670646I$ $a = -1.108004 + 0.503913I$ $b = 0.88831 - 1.63472I$	$1.08979 - 4.58635I$	$4.20678 + 7.42430I$
$u = -0.876556 - 1.026091I$ $a = -1.059400 - 0.874691I$ $b = 2.32466 + 0.31720I$	$9.46664 - 1.75340I$	$5.39474 - 0.85033I$
$u = -0.876556 + 1.026091I$ $a = -1.059400 + 0.874691I$ $b = 2.32466 - 0.31720I$	$9.46664 + 1.75340I$	$5.39474 + 0.85033I$
$u = 0.541733 - 0.670646I$ $a = -0.11061 - 1.52297I$ $b = -0.151145 - 0.151691I$	$1.08979 + 4.58635I$	$4.20678 - 7.42430I$
$u = 0.541733 + 0.670646I$ $a = -0.11061 + 1.52297I$ $b = -0.151145 + 0.151691I$	$1.08979 - 4.58635I$	$4.20678 + 7.42430I$

Solution to I_3^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.975430 + 0.320615I$ $a = 0.583170 - 0.332488I$ $b = -0.819443 + 0.010673I$	$-0.581891 + 0.600845I$	$-1.31849 - 3.40041I$
$u = 0.975430 - 0.320615I$ $a = 0.583170 + 0.332488I$ $b = -0.819443 - 0.010673I$	$-0.581891 - 0.600845I$	$-1.31849 + 3.40041I$
$u = -1.059926 + 0.922349I$ $a = 1.041525 - 0.882518I$ $b = -1.74793 - 0.01501I$	$8.86503 + 5.36397I$	$3.49612 - 6.50559I$
$u = -1.059926 - 0.922349I$ $a = 1.041525 + 0.882518I$ $b = -1.74793 + 0.01501I$	$8.86503 - 5.36397I$	$3.49612 + 6.50559I$
$u = -0.876556 + 1.026091I$ $a = 1.32869 - 0.69669I$ $b = -1.66238 - 0.33815I$	$9.46664 + 1.75340I$	$5.39474 + 0.85033I$
$u = -0.876556 - 1.026091I$ $a = 1.32869 + 0.69669I$ $b = -1.66238 + 0.33815I$	$9.46664 - 1.75340I$	$5.39474 - 0.85033I$
$u = -0.580680 - 0.133301I$ $a = 1.356456 - 0.199192I$ $b = -0.57404 - 1.29815I$	$-1.56776 - 3.93250I$	$-8.27914 + 6.71393I$
$u = -0.580680 + 0.133301I$ $a = 1.356456 + 0.199192I$ $b = -0.57404 + 1.29815I$	$-1.56776 + 3.93250I$	$-8.27914 - 6.71393I$
$u = 0.975430 + 0.320615I$ $a = 1.43037 - 0.39642I$ $b = 0.786422 + 0.695571I$	$-0.581891 + 0.600845I$	$-1.31849 - 3.40041I$
$u = 0.975430 - 0.320615I$ $a = 1.43037 + 0.39642I$ $b = 0.786422 - 0.695571I$	$-0.581891 - 0.600845I$	$-1.31849 + 3.40041I$

IV. $I_4^u = \langle u^{19} - 5u^{18} + \cdots + 10u^2 - 3,\ 16u^{18} - 65u^{17} + \cdots + 39b + 33,\ -20u^{18} + 91u^{17} + \cdots + 39a - 129\rangle$

(i) Arc colorings

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

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

$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.512821u^{18} - 2.33333u^{17} + \cdots + 2.12821u + 3.30769 \\ -0.410256u^{18} + 1.66667u^{17} + \cdots - 1.76923u - 0.846154 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.923077u^{18} - 4u^{17} + \cdots + 3.89744u + 4.15385 \\ -0.410256u^{18} + 1.66667u^{17} + \cdots - 1.76923u - 0.846154 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} \frac{5}{39}u^{18} - u^{17} + \cdots + \frac{50}{39}u + \frac{27}{13} \\ 0.153846u^{18} - 0.794872u^{16} + \cdots - 2.46154u - 0.307692 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1.10256u^{18} - 8u^{17} + \cdots + 7.35897u + 10.4615 \\ -3.94872u^{18} + 18.3333u^{17} + \cdots - 6.15385u - 10.7692 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.307692u^{18} + 2.66667u^{17} + \cdots - 3.41026u - 1.38462 \\ 6.20513u^{18} - 25.6667u^{17} + \cdots + 0.384615u + 11.9231 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1.41026u^{18} - 5.33333u^{17} + \cdots - 1.56410u + 2.84615 \\ -1.12821u^{18} + 3.33333u^{17} + \cdots + 2.38462u + 0.923077 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1.41026u^{18} - 5.33333u^{17} + \cdots - 1.56410u + 2.84615 \\ -1.12821u^{18} + 3.33333u^{17} + \cdots + 2.38462u + 0.923077 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.200483 - 0.502359I$ $a = -0.256728 + 0.089743I$ $b = -0.766723 - 0.224201I$	$-0.51529 - 7.49251I$	$1.46560 + 6.64058I$
$u = -1.200483 + 0.502359I$ $a = -0.256728 - 0.089743I$ $b = -0.766723 + 0.224201I$	$-0.51529 + 7.49251I$	$1.46560 - 6.64058I$
$u = -0.779496 - 0.468978I$ $a = -0.091107 - 0.590275I$ $b = 0.602057 - 0.798290I$	$0.99904 - 3.33102I$	$2.55789 + 7.26755I$
$u = -0.779496 + 0.468978I$ $a = -0.091107 + 0.590275I$ $b = 0.602057 + 0.798290I$	$0.99904 + 3.33102I$	$2.55789 - 7.26755I$
$u = -0.415119 - 0.278912I$ $a = 0.874831 - 0.733477I$ $b = 0.820280 + 0.072764I$	$1.73128 + 0.06651I$	$5.44854 + 0.44003I$
$u = -0.415119 + 0.278912I$ $a = 0.874831 + 0.733477I$ $b = 0.820280 - 0.072764I$	$1.73128 - 0.06651I$	$5.44854 - 0.44003I$
$u = -0.350966 - 0.908273I$ $a = 0.497187 + 0.151368I$ $b = -0.408408 + 0.715459I$	$2.38098 + 2.19136I$	$4.02486 - 1.79521I$
$u = -0.350966 + 0.908273I$ $a = 0.497187 - 0.151368I$ $b = -0.408408 - 0.715459I$	$2.38098 - 2.19136I$	$4.02486 + 1.79521I$
$u = 0.761451$ $a = 1.02355$ $b = -0.185922$	-1.28421	-7.36269
$u = 0.869568 - 1.036963I$ $a = 1.19820 - 0.93760I$ $b = -2.14294 + 0.19617I$	$10.89151 - 6.89079I$	$1.93588 + 3.17270I$

Solution to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.869568 + 1.036963I$ $a = 1.19820 + 0.93760I$ $b = -2.14294 - 0.19617I$	$10.89151 + 6.89079I$	$1.93588 - 3.17270I$
$u = 0.898363 - 0.894383I$ $a = -1.77752 + 0.80237I$ $b = 2.15592 + 0.55152I$	$8.84727 + 4.55297I$	$5.83723 - 8.19473I$
$u = 0.898363 + 0.894383I$ $a = -1.77752 - 0.80237I$ $b = 2.15592 - 0.55152I$	$8.84727 - 4.55297I$	$5.83723 + 8.19473I$
$u = 0.956723 - 0.863236I$ $a = -1.21407 + 1.44574I$ $b = 2.09496 - 0.17987I$	$8.65502 + 1.95883I$	$4.78017 + 2.64502I$
$u = 0.956723 + 0.863236I$ $a = -1.21407 - 1.44574I$ $b = 2.09496 + 0.17987I$	$8.65502 - 1.95883I$	$4.78017 - 2.64502I$
$u = 1.063602 - 0.913849I$ $a = 1.35608 - 1.04713I$ $b = -2.11940 - 0.59325I$	$10.2390 + 14.0065I$	$0.95958 - 7.34096I$
$u = 1.063602 + 0.913849I$ $a = 1.35608 + 1.04713I$ $b = -2.11940 + 0.59325I$	$10.2390 - 14.0065I$	$0.95958 + 7.34096I$
$u = 1.077083 - 0.271096I$ $a = 0.401351 - 0.468581I$ $b = -0.142788 - 0.130045I$	$-2.28578 + 0.47591I$	$-3.82840 - 3.46313I$
$u = 1.077083 + 0.271096I$ $a = 0.401351 + 0.468581I$ $b = -0.142788 + 0.130045I$	$-2.28578 - 0.47591I$	$-3.82840 + 3.46313I$

V. $I^v_1 = \langle b - 1,\ v - 1,\ a \rangle$

(i) Arc colorings

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

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

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

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

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

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

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

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

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

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

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

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

(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	1.64493	6.00000
$a=$	0		
$b=$	1.00000		

VI. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1	$u(u-1)^2$ $(u^{10}-2u^9+u^8+3u^7-2u^6-2u^5+3u^4+2u^3-u^2-2u+1)^2$ $(u^{10}+2u^9-4u^7-2u^6+4u^5+4u^4-u^3-u^2+u+1)$ $(u^{19}+5u^{18}+\cdots-10u^2+3)$
c_2	$u(u+1)^2$ $(1+6u+15u^2+22u^3+35u^4+36u^5+28u^6+15u^7+9u^8+2u^9+u^{10})^2$ $(u^{10}+4u^9+\cdots+3u+1)(u^{19}+5u^{18}+\cdots+60u+9)$
c_3	$(u-1)(u^2+u-1)(u^{10}+u^9+\cdots+u^2+1)$ $(u^{19}+8u^{17}+\cdots-u+5)(u^{20}+2u^{19}+\cdots-301u+457)$
c_4, c_6	$(u-1)(u^2+u-1)(u^{10}+u^8+\cdots-u+1)$ $(u^{19}+u^{18}+\cdots+4u+1)(u^{20}+2u^{19}+\cdots-5u+5)$
c_5	$u(u+1)^2(u^{10}-2u^9+4u^7-2u^6-4u^5+4u^4+u^3-u^2-u+1)$ $(u^{10}-2u^9+u^8+3u^7-2u^6-2u^5+3u^4+2u^3-u^2-2u+1)^2$ $(u^{19}+5u^{18}+\cdots-10u^2+3)$
c_7	$(u+1)(u^2+u-1)(u^{10}+u^9+\cdots+4u+1)$ $(u^{19}+20u^{17}+\cdots+3u-1)(u^{20}+12u^{18}+\cdots+989u+1201)$
c_8	$(u+1)^3$ $(u^{10}+5u^9+11u^8+18u^7+23u^6+21u^5+19u^4+11u^3+7u^2+2u+1)$ $(u^{19}-18u^{17}+\cdots+13u-1)(u^{20}+3u^{19}+\cdots-410u+55)$
c_9	$u^3(u^{10}-3u^9+6u^8-7u^7+9u^6-9u^5+10u^4-6u^3+5u^2-3u+2)^2$ $(u^{10}+5u^9+11u^8+10u^7-5u^6-23u^5-21u^4+u^3+18u^2+15u+5)$ $(u^{19}+14u^{18}+\cdots-30u-3)$
c_{10}	$(u-1)^{22}(u+1)$ $(u^{10}+3u^9-11u^7-14u^6+4u^5+20u^4+14u^3+5u^2+2u+1)$ $(u^{19}+21u^{18}+\cdots-1792u-512)$
c_{11}	$(u-1)^2(u+1)$ $(u^{10}-5u^9+11u^8-18u^7+23u^6-21u^5+19u^4-11u^3+7u^2-2u+1)$ $(u^{19}-18u^{17}+\cdots+13u-1)(u^{20}+3u^{19}+\cdots-410u+55)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_5	$(y)(y-1)^2(y^{10}-4y^9+\cdots-3y+1)$ $(1-6y+15y^2-22y^3+35y^4-36y^5+28y^6-15y^7+9y^8-2y^9+y^{10})^2$ $(y^{19}-5y^{18}+\cdots+60y-9)$
c_2	$(y)(y-1)^2(y^{10}+8y^9+\cdots+13y+1)$ $(1-6y+31y^2+190y^3+319y^4+252y^5+276y^6+205y^7+77y^8+14y^9+y^{10})^2$ $(y^{19}+23y^{18}+\cdots-1872y-81)$
c_3	$(y-1)(y^2-3y+1)$ $(y^{10}+5y^9+11y^8+18y^7+23y^6+21y^5+19y^4+11y^3+7y^2+2y+1)$ $(y^{19}+16y^{18}+\cdots-109y-25)$ $(y^{20}+12y^{19}+\cdots-305391y+208849)$
c_4, c_6	$(y-1)(y^2-3y+1)$ $(y^{10}+2y^9+7y^8+11y^7+19y^6+21y^5+23y^4+18y^3+11y^2+5y+1)$ $(y^{19}-7y^{18}+\cdots+16y-1)(y^{20}+28y^{18}+\cdots-275y+25)$
c_7	$(y-1)(y^2-3y+1)(y^{10}+5y^9+\cdots+2y+1)(y^{19}+40y^{18}+\cdots+7y-1)$ $(y^{20}+24y^{19}+\cdots-10199399y+1442401)$
c_8, c_{11}	$(y-1)^3(y^{10}-3y^9+\cdots+10y+1)(y^{19}-36y^{18}+\cdots+39y-1)$ $(y^{20}-23y^{19}+\cdots-8050y+3025)$
c_9	$y^3(y^{10}-3y^9+\cdots-45y+25)$ $(4+11y+29y^2+46y^3+64y^4+61y^5+49y^6+25y^7+12y^8+3y^9+y^{10})^2$ $(y^{19}+38y^{17}+\cdots+42y-9)$
c_{10}	$(y-1)^{23}(y^{10}-9y^9+\cdots+6y+1)$ $(y^{19}-9y^{18}+\cdots+2162688y-262144)$