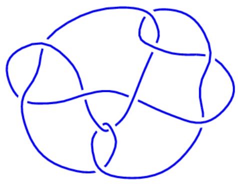
$11a_{128}$ ($K11a_{128}$)



[1]

Arc Sequences

6 1 7 10 2 8 3 5 11 4 9

Solving Sequence

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

Representation Ideals

$$I = \bigcap_{i=1}^{3} I_i^u$$

$$\begin{aligned}
I_1^u &= \langle b^6 - 2b^5 + 8b^4 - 10b^3 + 11b^2 - 4b + 1,\ -14b^5 + 27b^4 - 106b^3 + 127b^2 - 130b + 19a + 25, \\
&\quad - 14b^5 + 27b^4 - 106b^3 + 127b^2 - 111b + 19u + 25\rangle \\
I_2^u &= \langle u^{28} + 6u^{26} + \cdots + 2u + 1,\ u^{27} - u^{26} + \cdots + 8b - 1,\ u^{27} - u^{26} + \cdots + 8a - 1\rangle \\
I_3^u &= \langle u^{42} + u^{41} + \cdots - 2u + 1,\ 1.54829 \times 10^{17} u^{41} - 1.11927 \times 10^{17} u^{40} + \cdots + 3.93707 \times 10^{17} b - 3.62508 \times 10^{17}, \\
&\quad - 4.00955 \times 10^{17} u^{41} - 5.56637 \times 10^{17} u^{40} + \cdots + 3.93707 \times 10^{17} a + 6.76340 \times 10^{17}\rangle
\end{aligned}$$

There are 3 irreducible components with 76 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. $\boldsymbol{I_1^u = \langle b^6 - 2b^5 + 8b^4 - 10b^3 + 11b^2 - 4b + 1,\ -14b^5 + 27b^4 + \cdots + 19a + 25,\ -14b^5 + 19u + \cdots - 111b + 25\rangle}$

(i) Arc colorings

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

$$a_5 = \begin{pmatrix} 0 \\ 0.736842b^5 - 1.42105b^4 + \cdots + 5.84211b - 1.31579 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.736842b^5 - 1.42105b^4 + \cdots + 5.84211b - 1.31579 \\ 0.736842b^5 - 1.42105b^4 + \cdots + 5.84211b - 1.31579 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.736842b^5 - 1.42105b^4 + \cdots + 6.84211b - 1.31579 \\ b \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1.47368b^5 - 2.84211b^4 + \cdots + 12.6842b - 2.63158 \\ 0.736842b^5 - 1.42105b^4 + \cdots + 6.84211b - 1.31579 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.736842b^5 - 1.42105b^4 + \cdots + 6.84211b - 1.31579 \\ -0.736842b^5 + 1.42105b^4 + \cdots - 5.84211b + 1.31579 \end{pmatrix}$$

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

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

$$a_{11} = \begin{pmatrix} 0.105263b^5 - 0.631579b^4 + \cdots + 3.26316b - 2.47368 \\ -0.0526316b^5 + 0.315789b^4 + \cdots - 1.63158b + 0.736842 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.631579b^5 + 0.789474b^4 + \cdots - 3.57895b - 0.157895 \\ -0.526316b^5 + 1.15789b^4 + \cdots - 4.31579b + 1.36842 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.0526316b^5 - 0.315789b^4 + \cdots + 1.63158b - 1.73684 \\ 0.0526316b^5 - 0.315789b^4 + \cdots + 1.63158b - 0.736842 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.0526316b^5 - 0.315789b^4 + \cdots + 1.63158b - 1.73684 \\ 0.0526316b^5 - 0.315789b^4 + \cdots + 1.63158b - 0.736842 \end{pmatrix}$$

(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
$u =$	$1.00000I$		
$a =$	$0.215080 - 1.307141I$	$-6.31400 - 2.82812I$	$-7.50976 + 2.97945I$
$b =$	$0.21508 - 2.30714I$		
$u =$	$-1.00000I$		
$a =$	$0.215080 + 1.307141I$	$-6.31400 + 2.82812I$	$-7.50976 - 2.97945I$
$b =$	$0.21508 + 2.30714I$		
$u =$	$-1.00000I$		
$a =$	$0.215080 - 1.307141I$	$-6.31400 - 2.82812I$	$-7.50976 + 2.97945I$
$b =$	$0.215080 - 0.307141I$		
$u =$	$1.00000I$		
$a =$	$0.215080 + 1.307141I$	$-6.31400 + 2.82812I$	$-7.50976 - 2.97945I$
$b =$	$0.215080 + 0.307141I$		
$u =$	$1.00000I$		
$a =$	0.569840	-2.17641	-0.980489
$b =$	$0.569840 - 1.000000I$		
$u =$	$-1.00000I$		
$a =$	0.569840	-2.17641	-0.980489
$b =$	$0.569840 + 1.000000I$		

II.

$$\boldsymbol{I_2^u = \langle u^{28}+6u^{26}+\cdots+2u+1,\ u^{27}-u^{26}+\cdots+8b-1,\ u^{27}-u^{26}+\cdots+8a-1\rangle}$$

(i) Arc colorings

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

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

$$a_6 = \begin{pmatrix}u\\u\end{pmatrix}$$

$$a_8 = \begin{pmatrix}-\frac{1}{8}u^{27}+\frac{1}{8}u^{26}+\cdots+\frac{17}{8}u+\frac{1}{8}\\-\frac{1}{8}u^{27}+\frac{1}{8}u^{26}+\cdots+\frac{9}{8}u+\frac{1}{8}\end{pmatrix}$$

$$a_7 = \begin{pmatrix}-\frac{1}{8}u^{27}+\frac{1}{8}u^{26}+\cdots+\frac{9}{8}u+\frac{1}{8}\\-\frac{1}{8}u^{27}+\frac{1}{8}u^{26}+\cdots+\frac{9}{8}u+\frac{1}{8}\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-\frac{1}{8}u^{27}+\frac{1}{8}u^{26}+\cdots+\frac{17}{8}u+\frac{1}{8}\\u^5+u^3+u\end{pmatrix}$$

$$a_1 = \begin{pmatrix}u^2+1\\u^2\end{pmatrix}$$

$$a_3 = \begin{pmatrix}u^4+u^2+1\\u^4\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}\frac{9}{8}u^{27}+\frac{5}{8}u^{26}+\cdots+\frac{25}{8}u+\frac{15}{8}\\\frac{1}{8}u^{27}+\frac{1}{8}u^{26}+\cdots+\frac{3}{8}u+\frac{1}{8}\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-\frac{1}{8}u^{27}-\frac{9}{8}u^{26}+\cdots-\frac{11}{8}u-\frac{21}{8}\\\frac{1}{4}u^{27}-\frac{1}{2}u^{26}+\cdots-\frac{13}{4}u^2-\frac{3}{4}\end{pmatrix}$$

$$a_4 = \begin{pmatrix}-\frac{1}{8}u^{27}-\frac{1}{8}u^{26}+\cdots-\frac{3}{8}u+\frac{7}{8}\\-\frac{1}{8}u^{27}-\frac{1}{8}u^{26}+\cdots-\frac{3}{8}u-\frac{1}{8}\end{pmatrix}$$

$$a_4 = \begin{pmatrix}-\frac{1}{8}u^{27}-\frac{1}{8}u^{26}+\cdots-\frac{3}{8}u+\frac{7}{8}\\-\frac{1}{8}u^{27}-\frac{1}{8}u^{26}+\cdots-\frac{3}{8}u-\frac{1}{8}\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.715634 - 0.398949I$ $a = -1.133994 - 0.671063I$ $b = -0.418360 - 0.272114I$	$0.030119 + 0.482942I$	$2.45869 - 2.54239I$
$u = -0.715634 + 0.398949I$ $a = -1.133994 + 0.671063I$ $b = -0.418360 + 0.272114I$	$0.030119 - 0.482942I$	$2.45869 + 2.54239I$
$u = -0.626024 - 1.122834I$ $a = 0.456478 + 0.830671I$ $b = 1.08250 + 1.95350I$	$2.17277 + 9.75277I$	$3.46320 - 8.11852I$
$u = -0.626024 + 1.122834I$ $a = 0.456478 - 0.830671I$ $b = 1.08250 - 1.95350I$	$2.17277 - 9.75277I$	$3.46320 + 8.11852I$
$u = -0.616775 - 0.724242I$ $a = -0.799240 - 0.536603I$ $b = -0.182465 + 0.187638I$	$0.69719 + 2.24985I$	$1.09419 - 3.47682I$
$u = -0.616775 + 0.724242I$ $a = -0.799240 + 0.536603I$ $b = -0.182465 - 0.187638I$	$0.69719 - 2.24985I$	$1.09419 + 3.47682I$
$u = -0.606810 - 1.011994I$ $a = -0.143798 + 0.406651I$ $b = 0.46301 + 1.41865I$	$0.54803 + 3.32331I$	$2.18088 - 2.29510I$
$u = -0.606810 + 1.011994I$ $a = -0.143798 - 0.406651I$ $b = 0.46301 - 1.41865I$	$0.54803 - 3.32331I$	$2.18088 + 2.29510I$
$u = -0.605210 - 1.183848I$ $a = 0.69235 + 1.24308I$ $b = 1.29756 + 2.42692I$	$-3.5733 + 15.6943I$	$-1.82098 - 10.41623I$
$u = -0.605210 + 1.183848I$ $a = 0.69235 - 1.24308I$ $b = 1.29756 - 2.42692I$	$-3.5733 - 15.6943I$	$-1.82098 + 10.41623I$

Solution to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.416029-1.025633I$ $a=-1.25099+1.16757I$ $b=-0.83496+2.19321I$	$-6.63635-0.10967I$	$-3.90050-2.81899I$
$u=-0.416029+1.025633I$ $a=-1.25099-1.16757I$ $b=-0.83496-2.19321I$	$-6.63635+0.10967I$	$-3.90050+2.81899I$
$u=-0.273295-0.395938I$ $a=-0.648670-0.710904I$ $b=-0.375375-0.314966I$	$0.225861+1.065080I$	$3.10010-6.65254I$
$u=-0.273295+0.395938I$ $a=-0.648670+0.710904I$ $b=-0.375375+0.314966I$	$0.225861-1.065080I$	$3.10010+6.65254I$
$u=-0.023188-0.692895I$ $a=-0.21917-2.31562I$ $b=-0.19598-1.62273I$	$-4.98395+2.93184I$	$0.79314-3.40006I$
$u=-0.023188+0.692895I$ $a=-0.21917+2.31562I$ $b=-0.19598+1.62273I$	$-4.98395-2.93184I$	$0.79314+3.40006I$
$u=\ 0.436495-1.052558I$ $a=\ 0.98977+1.30251I$ $b=\ 0.55328+2.35507I$	$-7.02411-5.90283I$	$-4.75289+7.68964I$
$u=\ 0.436495+1.052558I$ $a=\ 0.98977-1.30251I$ $b=\ 0.55328-2.35507I$	$-7.02411+5.90283I$	$-4.75289-7.68964I$
$u=\ 0.570794-1.089035I$ $a=-0.012873+0.939368I$ $b=-0.58367+2.02840I$	$-1.89491-7.14346I$	$-3.37367+6.75053I$
$u=\ 0.570794+1.089035I$ $a=-0.012873-0.939368I$ $b=-0.58367-2.02840I$	$-1.89491+7.14346I$	$-3.37367-6.75053I$

Solution to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.588545 - 1.173308I$ $a = -0.547182 + 1.285085I$ $b = -1.13573 + 2.45839I$	$-4.61324 - 9.81937I$	$-3.57047 + 5.81179I$
$u = 0.588545 + 1.173308I$ $a = -0.547182 - 1.285085I$ $b = -1.13573 - 2.45839I$	$-4.61324 + 9.81937I$	$-3.57047 - 5.81179I$
$u = 0.724810 - 0.770942I$ $a = 0.540745 - 0.669595I$ $b = -0.184065 + 0.101347I$	$2.05272 - 7.06945I$	$3.67598 + 8.34686I$
$u = 0.724810 + 0.770942I$ $a = 0.540745 + 0.669595I$ $b = -0.184065 - 0.101347I$	$2.05272 + 7.06945I$	$3.67598 - 8.34686I$
$u = 0.759562 - 0.603461I$ $a = 0.884256 - 0.855471I$ $b = 0.124694 - 0.252009I$	$5.48513 - 0.99092I$	$8.59434 + 2.33645I$
$u = 0.759562 + 0.603461I$ $a = 0.884256 + 0.855471I$ $b = 0.124694 + 0.252009I$	$5.48513 + 0.99092I$	$8.59434 - 2.33645I$
$u = 0.802758 - 0.434476I$ $a = 1.19232 - 0.81357I$ $b = 0.389560 - 0.379095I$	$1.06471 + 4.87874I$	$4.05798 - 2.77982I$
$u = 0.802758 + 0.434476I$ $a = 1.19232 + 0.81357I$ $b = 0.389560 + 0.379095I$	$1.06471 - 4.87874I$	$4.05798 + 2.77982I$

III.
$\boldsymbol{I^u_3 = \langle u^{42}+u^{41}+\cdots-2u+1,\ 1.55\times10^{17}u^{41}-1.12\times10^{17}u^{40}+\cdots+3.94\times10^{17}b-3.63\times10^{17},\ -4.01\times10^{17}u^{41}-5.57\times10^{17}u^{40}+\cdots+3.94\times10^{17}a+6.76\times10^{17}\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_5 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_6 = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_8 = \begin{pmatrix}1.01841u^{41}+1.41384u^{40}+\cdots+0.0240846u-1.71788\\-0.393259u^{41}+0.284290u^{40}+\cdots-4.10329u+0.920756\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1.24208u^{41}+1.39637u^{40}+\cdots+2.94799u-2.46982\\-0.599671u^{41}-0.276564u^{40}+\cdots-3.33085u+0.525329\end{pmatrix}$$
$$a_9 = \begin{pmatrix}1.01841u^{41}+1.41384u^{40}+\cdots+0.0240846u-1.71788\\-0.599671u^{41}-0.276564u^{40}+\cdots-4.33085u+0.525329\end{pmatrix}$$
$$a_1 = \begin{pmatrix}u^2+1\\u^2\end{pmatrix}$$
$$a_3 = \begin{pmatrix}u^4+u^2+1\\u^4\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0.892006u^{41}+0.830955u^{40}+\cdots+0.0876778u+2.45842\\0.336845u^{41}+0.551659u^{40}+\cdots-0.756094u-1.16179\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-1.49818u^{41}-1.16444u^{40}+\cdots-2.85092u+0.862154\\-1.17150u^{41}-1.61732u^{40}+\cdots+4.73858u-1.05647\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-0.597649u^{41}-0.820584u^{40}+\cdots+0.00420958u-1.66211\\-0.0723201u^{41}+0.304415u^{40}+\cdots-0.992957u+1.61808\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-0.597649u^{41}-0.820584u^{40}+\cdots+0.00420958u-1.66211\\-0.0723201u^{41}+0.304415u^{40}+\cdots-0.992957u+1.61808\end{pmatrix}$$

(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
$u=-0.900670-0.302277I$ $a=\ \ 1.34149+1.13349I$ $b=\ \ 0.0564147+0.0656580I$	$-0.91901-10.18327I$	$1.25382+7.21296I$
$u=-0.900670+0.302277I$ $a=\ \ 1.34149-1.13349I$ $b=\ \ 0.0564147-0.0656580I$	$-0.91901+10.18327I$	$1.25382-7.21296I$
$u=-0.843980-0.412000I$ $a=\ \ 0.930675+0.853878I$ $b=-0.231860-0.090723I$	$4.29768-4.29720I$	$6.75143+3.93304I$
$u=-0.843980+0.412000I$ $a=\ \ 0.930675-0.853878I$ $b=-0.231860+0.090723I$	$4.29768+4.29720I$	$6.75143-3.93304I$
$u=-0.742093-0.573520I$ $a=\ \ 0.409653+0.305483I$ $b=-0.519302-0.446402I$	$1.85425+1.80763I$	$4.25907-2.73625I$
$u=-0.742093+0.573520I$ $a=\ \ 0.409653-0.305483I$ $b=-0.519302+0.446402I$	$1.85425-1.80763I$	$4.25907+2.73625I$
$u=-0.580018-1.088564I$ $a=-0.536256-1.147322I$ $b=-0.63703-1.80618I$	$-1.96895+4.48385I$	$-0.56586-2.47352I$
$u=-0.580018+1.088564I$ $a=-0.536256+1.147322I$ $b=-0.63703+1.80618I$	$-1.96895-4.48385I$	$-0.56586+2.47352I$
$u=-0.528906-0.927109I$ $a=-0.215231-0.814450I$ $b=-0.51824-1.32816I$	$0.10785+2.26276I$	$-0.12423-3.11409I$
$u=-0.528906+0.927109I$ $a=-0.215231+0.814450I$ $b=-0.51824+1.32816I$	$0.10785-2.26276I$	$-0.12423+3.11409I$

Solution to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.478722 - 1.037957I$ $a = \ \ 0.484761 + 1.175829I$ $b = -0.60347 + 2.22371I$	$-6.19421 + 6.51836I$	$-3.49661 - 6.69162I$
$u = -0.478722 + 1.037957I$ $a = \ \ 0.484761 - 1.175829I$ $b = -0.60347 - 2.22371I$	$-6.19421 - 6.51836I$	$-3.49661 + 6.69162I$
$u = -0.384983 - 0.893506I$ $a = \ \ 0.687761 + 0.528818I$ $b = -0.23915 + 1.81327I$	$-1.26832 + 1.59690I$	$3.13274 - 4.73829I$
$u = -0.384983 + 0.893506I$ $a = \ \ 0.687761 - 0.528818I$ $b = -0.23915 - 1.81327I$	$-1.26832 - 1.59690I$	$3.13274 + 4.73829I$
$u = -0.315798 - 0.452715I$ $a = \ \ 1.53552 - 0.87844I$ $b = \ \ 0.230146 + 1.347207I$	$-4.44976 - 2.73152I$	$-0.80842 + 2.00184I$
$u = -0.315798 + 0.452715I$ $a = \ \ 1.53552 + 0.87844I$ $b = \ \ 0.230146 - 1.347207I$	$-4.44976 + 2.73152I$	$-0.80842 - 2.00184I$
$u = -0.243106 - 1.291403I$ $a = -0.936398 + 0.589088I$ $b = -1.79901 + 1.08349I$	$-6.19421 - 6.51836I$	$-3.49661 + 6.69162I$
$u = -0.243106 + 1.291403I$ $a = -0.936398 - 0.589088I$ $b = -1.79901 - 1.08349I$	$-6.19421 + 6.51836I$	$-3.49661 - 6.69162I$
$u = -0.135211 - 1.234016I$ $a = -0.673322 + 0.094557I$ $b = -1.281255 + 0.554795I$	$-1.26832 - 1.59690I$	$3.13274 + 4.73829I$
$u = -0.135211 + 1.234016I$ $a = -0.673322 - 0.094557I$ $b = -1.281255 - 0.554795I$	$-1.26832 + 1.59690I$	$3.13274 - 4.73829I$

Solution to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.125880 - 1.108301I$ $a = 0.202559 - 0.993967I$ $b = 0.300567 - 1.056508I$	$-4.65974 + 2.68588I$	$-1.85070 - 3.67518I$
$u = -0.125880 + 1.108301I$ $a = 0.202559 + 0.993967I$ $b = 0.300567 + 1.056508I$	$-4.65974 - 2.68588I$	$-1.85070 + 3.67518I$
$u = 0.046915 - 1.192484I$ $a = -0.378848 - 0.725228I$ $b = -0.614790 - 0.627707I$	$-4.44976 + 2.73152I$	$-0.80842 - 2.00184I$
$u = 0.046915 + 1.192484I$ $a = -0.378848 + 0.725228I$ $b = -0.614790 + 0.627707I$	$-4.44976 - 2.73152I$	$-0.80842 + 2.00184I$
$u = 0.239332 - 1.082515I$ $a = 0.099449 + 0.449814I$ $b = 0.77283 + 1.33054I$	-4.11368	-8.21539
$u = 0.239332 + 1.082515I$ $a = 0.099449 - 0.449814I$ $b = 0.77283 - 1.33054I$	-4.11368	-8.21539
$u = 0.264739 - 1.262700I$ $a = 0.788129 + 0.678550I$ $b = 1.65606 + 1.24069I$	$-6.94955 + 0.90110I$	$-5.44354 - 1.25880I$
$u = 0.264739 + 1.262700I$ $a = 0.788129 - 0.678550I$ $b = 1.65606 - 1.24069I$	$-6.94955 - 0.90110I$	$-5.44354 + 1.25880I$
$u = 0.325064 - 0.154969I$ $a = -2.94400 - 1.09780I$ $b = -0.238192 + 1.050528I$	$-4.65974 - 2.68588I$	$-1.85070 + 3.67518I$
$u = 0.325064 + 0.154969I$ $a = -2.94400 + 1.09780I$ $b = -0.238192 - 1.050528I$	$-4.65974 + 2.68588I$	$-1.85070 - 3.67518I$

Solution to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.444142 - 1.066232I$ $a = -0.297076 + 1.123019I$ $b = 0.74472 + 2.11869I$	$-6.94955 - 0.90110I$	$-5.44354 + 1.25880I$
$u = 0.444142 + 1.066232I$ $a = -0.297076 - 1.123019I$ $b = 0.74472 - 2.11869I$	$-6.94955 + 0.90110I$	$-5.44354 - 1.25880I$
$u = 0.613478 - 1.100457I$ $a = 0.654330 - 1.151369I$ $b = 0.75361 - 1.86084I$	$-0.91901 - 10.18327I$	$1.25382 + 7.21296I$
$u = 0.613478 + 1.100457I$ $a = 0.654330 + 1.151369I$ $b = 0.75361 + 1.86084I$	$-0.91901 + 10.18327I$	$1.25382 - 7.21296I$
$u = 0.638288 - 0.999696I$ $a = 0.587821 - 0.809119I$ $b = 0.83584 - 1.51020I$	$4.29768 - 4.29720I$	$6.75143 + 3.93304I$
$u = 0.638288 + 0.999696I$ $a = 0.587821 + 0.809119I$ $b = 0.83584 + 1.51020I$	$4.29768 + 4.29720I$	$6.75143 - 3.93304I$
$u = 0.656782 - 0.830369I$ $a = 0.266523 - 0.365919I$ $b = 0.767167 - 1.028986I$	$1.85425 + 1.80763I$	$4.25907 - 2.73625I$
$u = 0.656782 + 0.830369I$ $a = 0.266523 + 0.365919I$ $b = 0.767167 + 1.028986I$	$1.85425 - 1.80763I$	$4.25907 + 2.73625I$
$u = 0.690143 - 0.400372I$ $a = -1.091605 + 0.280031I$ $b = 0.153747 - 0.418522I$	$0.10785 + 2.26276I$	$-0.12423 - 3.11409I$
$u = 0.690143 + 0.400372I$ $a = -1.091605 - 0.280031I$ $b = 0.153747 + 0.418522I$	$0.10785 - 2.26276I$	$-0.12423 + 3.11409I$

Solution to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.860486 - 0.285796I$ $a = -1.41594 + 0.98148I$ $b = -0.0888019 - 0.0452489I$	$-1.96895 + 4.48385I$	$-0.56586 - 2.47352I$
$u = 0.860486 + 0.285796I$ $a = -1.41594 - 0.98148I$ $b = -0.0888019 + 0.0452489I$	$-1.96895 - 4.48385I$	$-0.56586 + 2.47352I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1, c_3, c_5 c_7	$(u^2+1)^3(u^{28}+6u^{26}+\cdots+2u+1)(u^{42}+u^{41}+\cdots-2u+1)$
c_2	$(u+1)^6(u^{28}+12u^{27}+\cdots+10u+1)(u^{42}+23u^{41}+\cdots+22u^2+1)$
c_4	$(u^6+u^4+2u^2+1)(u^{28}+3u^{27}+\cdots+u+2)(u^{42}-2u^{41}+\cdots-2u+1)$
c_6	$(u-1)^6(u^{28}+12u^{27}+\cdots+10u+1)(u^{42}+23u^{41}+\cdots+22u^2+1)$
c_8	$(u^6-3u^4+2u^2+1)$ $(3-11u+27u^2-30u^3-19u^4+135u^5-288u^6+438u^7-535u^8+527u^9-429u^{10}+328u^1$ $(u^{28}+15u^{27}+\cdots+785u+86)$
c_9	$(u^3+u^2+2u+1)^2(u^{28}+9u^{27}+\cdots+19u+4)$ $(u^{42}+14u^{41}+\cdots-6u+1)$
c_{10}	$(u^6+u^4+2u^2+1)(u^{28}+3u^{27}+\cdots+u+2)(u^{42}-2u^{41}+\cdots-2u+1)$
c_{11}	$(u^3-u^2+2u-1)^2(u^{28}+9u^{27}+\cdots+19u+4)$ $(u^{42}+14u^{41}+\cdots-6u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_3, c_5 c_7	$(y+1)^6(y^{28}+12y^{27}+\cdots+10y+1)(y^{42}+23y^{41}+\cdots+22y^2+1)$
c_2, c_6	$(y-1)^6(y^{28}+16y^{27}+\cdots+30y+1)(y^{42}-9y^{41}+\cdots+44y+1)$
c_4, c_{10}	$(y^3+y^2+2y+1)^2(y^{28}+9y^{27}+\cdots+19y+4)$ $(y^{42}+14y^{41}+\cdots-6y+1)$
c_8	$(y^3-3y^2+2y+1)^2$ $(-9-41y+45y^2+684y^3+665y^4+871y^5+972y^6+656y^7-235y^8+1577y^9-879y^{10}-32$ $(y^{28}-3y^{27}+\cdots+53715y+7396)$
c_9, c_{11}	$(y^3+3y^2+2y-1)^2(y^{28}+21y^{27}+\cdots+111y+16)$ $(y^{42}+30y^{41}+\cdots-54y+1)$