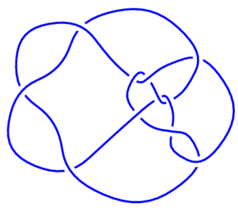
$11a_{353}$ ($K11a_{353}$)



[1]

Arc Sequences

$\rightarrow\downarrow 8 \rightarrow\downarrow 6 \rightarrow\downarrow 9 \rightarrow\downarrow 1 \rightarrow\downarrow 10 \rightarrow\downarrow 2 \rightarrow\downarrow 11 \rightarrow\downarrow 3 \rightarrow\downarrow 4 \rightarrow\downarrow 7 \rightarrow\downarrow 5 \rightarrow$

Solving Sequence

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

Representation Ideals

$$I = \bigcap_{i=1}^{5} I_i^u$$

$$\begin{aligned}
I_1^u &= \langle u - 1,\ a + 1,\ 2b + 1\rangle \\
I_2^u &= \langle 4b^2 + 4b - 1,\ a + 1,\ u + 1\rangle \\
I_3^u &= \langle a^4 - a^2 + 1,\ -a^3 + u,\ a^3 + a^2 + 3b - 5a - 2\rangle \\
I_4^u &= \langle u^{28} + u^{27} + \cdots - 2u - 1, \\
&\quad 221044616913u^{27} + 290155714074u^{26} + \cdots + 952258493696a - 2321054567783, \\
&\quad - 792700470455u^{27} - 225798479966u^{26} + \cdots + 19045169873392b + 1298199346297\rangle \\
I_5^u &= \langle u^{40} - 3u^{39} + \cdots - 16u + 13, \\
&\quad - 3.76258 \times 10^{32}u^{39} + 8.77507 \times 10^{31}u^{38} + \cdots + 1.02068 \times 10^{33}b - 1.25131 \times 10^{34}, \\
&\quad 2.55200 \times 10^{33}u^{39} - 6.60767 \times 10^{33}u^{38} + \cdots + 1.32688 \times 10^{34}a - 3.80580 \times 10^{34}\rangle
\end{aligned}$$

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. $I^u_1 = \langle u-1,\ a+1,\ 2b+1\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix}0\\1\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-1\\-\frac{1}{2}\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-1\\-\frac{3}{2}\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-1\\-\frac{1}{2}\end{pmatrix}$$
$$a_1 = \begin{pmatrix}\frac{1}{2}\\-\frac{1}{4}\end{pmatrix}$$
$$a_6 = \begin{pmatrix}1\\1\end{pmatrix}$$
$$a_3 = \begin{pmatrix}2\\1\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-1\\-\frac{1}{2}\end{pmatrix}$$
$$a_5 = \begin{pmatrix}\frac{3}{2}\\\frac{5}{4}\end{pmatrix}$$
$$a_4 = \begin{pmatrix}2\\1\end{pmatrix}$$
$$a_4 = \begin{pmatrix}2\\1\end{pmatrix}$$

(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
$u = \ \ 1.00000$ $a = -1.00000$ $b = -0.500000$	-3.28987	-7.50000

II. $I_2^u = \langle 4b^2 + 4b - 1,\ a + 1,\ u + 1 \rangle$

(i) Arc colorings

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

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

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

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

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

$$a_1 = \begin{pmatrix} b+1 \\ b-\frac{1}{4} \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 2 \\ 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 4b+3 \\ b+1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -b-2 \\ -0.75 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -2b-3 \\ -b-\frac{1}{2} \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -2b-3 \\ -b-\frac{1}{2} \end{pmatrix}$$

(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
$u = -1.00000$ $a = -1.00000$ $b = -1.20711$	-8.22467	-20.0000
$u = -1.00000$ $a = -1.00000$ $b = 0.207107$	-8.22467	-20.0000

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

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ a^3 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} a \\ -\frac{1}{3}a^3 - \frac{1}{3}a^2 + \frac{5}{3}a + \frac{2}{3} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} a \\ -\frac{1}{3}a^3 - \frac{1}{3}a^2 + \frac{2}{3}a + \frac{2}{3} \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} -a^3 + a \\ \frac{1}{3}a^3 - \frac{2}{3}a^2 + \frac{1}{3}a + \frac{1}{3} \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{1}{3}a^3 - \frac{1}{3}a^2 + \frac{1}{3}a + \frac{2}{3} \\ \frac{2}{3}a^3 - \frac{1}{3}a^2 - \frac{2}{3}a + \frac{2}{3} \end{pmatrix}$$

$$a_6 = \begin{pmatrix} a^3 \\ a^3 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} -a^3 + a \\ -\frac{2}{3}a^3 - \frac{2}{3}a^2 + \frac{4}{3}a + \frac{1}{3} \end{pmatrix}$$

$$a_5 = \begin{pmatrix} \frac{1}{3}a^3 - \frac{2}{3}a^2 + \frac{1}{3}a + \frac{1}{3} \\ -\frac{4}{3}a^2 + \frac{1}{3} \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -a^2 + 1 \\ -\frac{1}{3}a^3 - \frac{2}{3}a^2 - \frac{1}{3}a + \frac{1}{3} \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -a^2 + 1 \\ -\frac{1}{3}a^3 - \frac{2}{3}a^2 - \frac{1}{3}a + \frac{1}{3} \end{pmatrix}$$

(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
$u = \quad - 1.00000I$ $a = -0.866025 - 0.500000I$ $b = -0.943376 - 0.788675I$	$3.28987 + 2.02988I$	$-6.00000 - 3.46410I$
$u = \quad 1.00000I$ $a = -0.866025 + 0.500000I$ $b = -0.943376 + 0.788675I$	$3.28987 - 2.02988I$	$-6.00000 + 3.46410I$
$u = \quad - 1.00000I$ $a = 0.866025 - 0.500000I$ $b = 1.94338 - 0.21132I$	$3.28987 - 2.02988I$	$-6.00000 + 3.46410I$
$u = \quad 1.00000I$ $a = 0.866025 + 0.500000I$ $b = 1.94338 + 0.21132I$	$3.28987 + 2.02988I$	$-6.00000 - 3.46410I$

IV.
$\boldsymbol{I_4^u = \langle u^{28}+u^{27}+\cdots-2u-1,\ 2.21\times10^{11}u^{27}+2.90\times10^{11}u^{26}+\cdots+9.52\times10^{11}a-2.32\times10^{12},\ -7.93\times10^{11}u^{27}-2.26\times10^{11}u^{26}+\cdots+1.90\times10^{12}b+1.30\times10^{12}\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.232127u^{27} - 0.304703u^{26} + \cdots - 3.30997u + 2.43742 \\ 0.416221u^{27} + 0.118559u^{26} + \cdots + 1.53325u - 0.681642 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.232127u^{27} - 0.304703u^{26} + \cdots - 3.30997u + 2.43742 \\ 0.231896u^{27} + 0.203248u^{26} + \cdots + 1.15597u - 0.754218 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.722887u^{27} - 0.240821u^{26} + \cdots - 4.85080u + 1.53399 \\ 0.225086u^{27} + 0.236383u^{26} + \cdots + 1.82237u - 0.648348 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.464023u^{27} - 0.507951u^{26} + \cdots - 4.46594u + 3.19164 \\ 0.172306u^{27} + 0.100247u^{26} + \cdots + 1.72388u - 0.972307 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.954582u^{27} - 0.561026u^{26} + \cdots - 7.04483u + 2.50931 \\ 0.0710282u^{27} + 0.137612u^{26} + \cdots + 1.45714u - 0.792144 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.754218u^{27} + 0.522322u^{26} + \cdots + 6.43192u - 2.66441 \\ -0.218089u^{27} - 0.277679u^{26} + \cdots - 0.866064u + 1.00409 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.710290u^{27} + 0.342533u^{26} + \cdots + 8.69552u - 3.12843 \\ -0.290148u^{27} - 0.350011u^{26} + \cdots - 1.49376u + 1.17639 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.710290u^{27} + 0.342533u^{26} + \cdots + 8.69552u - 3.12843 \\ -0.290148u^{27} - 0.350011u^{26} + \cdots - 1.49376u + 1.17639 \end{pmatrix}$$

(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
$u=-1.33082$ $a=-0.501080$ $b=-0.703758$	-6.93788	-10.0440
$u=-1.27260-0.62076I$ $a=-0.566121+0.549832I$ $b=-0.280520-0.219653I$	$-8.94292+2.37104I$	$-16.4575-4.6309I$
$u=-1.27260+0.62076I$ $a=-0.566121-0.549832I$ $b=-0.280520+0.219653I$	$-8.94292-2.37104I$	$-16.4575+4.6309I$
$u=-0.739750$ $a=\ \ 0.308737$ $b=-0.924542$	-6.49503	-15.0761
$u=-0.576628-1.229497I$ $a=\ \ 0.849293-0.625389I$ $b=\ \ 2.00726-1.06121I$	$2.41139-11.80855I$	$-9.11501+8.63273I$
$u=-0.576628+1.229497I$ $a=\ \ 0.849293+0.625389I$ $b=\ \ 2.00726+1.06121I$	$2.41139+11.80855I$	$-9.11501-8.63273I$
$u=-0.565343-0.834957I$ $a=\ \ 1.050140-0.437151I$ $b=\ \ 1.59065-1.49259I$	$-7.22525-3.79352I$	$-14.6297+6.8044I$
$u=-0.565343+0.834957I$ $a=\ \ 1.050140+0.437151I$ $b=\ \ 1.59065+1.49259I$	$-7.22525+3.79352I$	$-14.6297-6.8044I$
$u=-0.443360-0.614385I$ $a=-1.00472+1.43117I$ $b=-0.409452+0.398810I$	$-2.17233-1.46597I$	$-11.44165+4.82002I$
$u=-0.443360+0.614385I$ $a=-1.00472-1.43117I$ $b=-0.409452-0.398810I$	$-2.17233+1.46597I$	$-11.44165-4.82002I$

Solution to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.413566-1.107252I$ $a=-0.798773-0.659393I$ $b=-1.74410-0.24157I$	$5.21251-5.27743I$	$-6.65035+6.45030I$
$u=-0.413566+1.107252I$ $a=-0.798773+0.659393I$ $b=-1.74410+0.24157I$	$5.21251+5.27743I$	$-6.65035-6.45030I$
$u=-0.250785$ $a=\ 3.43847$ $b=-1.30494$	-6.66293	-13.6174
$u=\ 0.125014-0.759051I$ $a=\ 1.47338+0.23743I$ $b=\ 1.44810+0.44829I$	$2.21675+2.65344I$	$-14.3737-6.7757I$
$u=\ 0.125014+0.759051I$ $a=\ 1.47338-0.23743I$ $b=\ 1.44810-0.44829I$	$2.21675-2.65344I$	$-14.3737+6.7757I$
$u=\ 0.274821$ $a=\ 0.917979$ $b=-0.224037$	-0.508062	-19.5922
$u=\ 0.296911-0.949247I$ $a=-0.872821+1.014864I$ $b=-1.67813+0.48220I$	$2.99004-0.45030I$	$-10.69982-4.65118I$
$u=\ 0.296911+0.949247I$ $a=-0.872821-1.014864I$ $b=-1.67813-0.48220I$	$2.99004+0.45030I$	$-10.69982+4.65118I$
$u=\ 0.487268-1.106835I$ $a=\ 0.968574+0.641704I$ $b=\ 1.85380+1.13963I$	$1.23650+6.41971I$	$-10.13891-5.40596I$
$u=\ 0.487268+1.106835I$ $a=\ 0.968574-0.641704I$ $b=\ 1.85380-1.13963I$	$1.23650-6.41971I$	$-10.13891+5.40596I$

Solution to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.555730 - 1.199456I$ $a = -0.671335 + 0.521804I$ $b = -1.71336 + 0.10860I$	$-0.48195 + 10.01536I$	$-10.05091 - 6.46543I$
$u = 0.555730 + 1.199456I$ $a = -0.671335 - 0.521804I$ $b = -1.71336 - 0.10860I$	$-0.48195 - 10.01536I$	$-10.05091 + 6.46543I$
$u = 0.569801 - 0.943146I$ $a = -0.490194 - 1.232726I$ $b = 0.033629 - 0.390422I$	$-6.49386 + 5.21032I$	$-14.7449 - 6.2628I$
$u = 0.569801 + 0.943146I$ $a = -0.490194 + 1.232726I$ $b = 0.033629 + 0.390422I$	$-6.49386 - 5.21032I$	$-14.7449 + 6.2628I$
$u = 0.67592 - 1.27886I$ $a = 0.797288 + 0.577860I$ $b = 2.14615 + 1.03761I$	$-3.7021 + 16.1510I$	$-12.8937 - 8.8766I$
$u = 0.67592 + 1.27886I$ $a = 0.797288 - 0.577860I$ $b = 2.14615 - 1.03761I$	$-3.7021 - 16.1510I$	$-12.8937 + 8.8766I$
$u = 1.084116 - 0.332892I$ $a = -0.816759 - 0.413766I$ $b = -0.425394 + 0.068144I$	$-3.53318 - 0.46316I$	$-13.8889 + 10.1726I$
$u = 1.084116 + 0.332892I$ $a = -0.816759 + 0.413766I$ $b = -0.425394 - 0.068144I$	$-3.53318 + 0.46316I$	$-13.8889 - 10.1726I$

V. I^u_5 =
$\langle u^{40}-3u^{39}+\cdots-16u+13,\ -3.76\times10^{32}u^{39}+8.78\times10^{31}u^{38}+\cdots+1.02\times10^{33}b-1.25\times10^{34},\ 2.55\times10^{33}u^{39}-6.61\times10^{33}u^{38}+\cdots+1.33\times10^{34}a-3.81\times10^{34}\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-0.192331u^{39}+0.497986u^{38}+\cdots-8.51738u+2.86824\\0.368636u^{39}-0.0859731u^{38}+\cdots-8.69230u+12.2597\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-0.192331u^{39}+0.497986u^{38}+\cdots-8.51738u+2.86824\\0.551011u^{39}-0.585572u^{38}+\cdots-7.45612u+13.2868\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_8 = \begin{pmatrix}0.0570880u^{39}-0.210178u^{38}+\cdots+1.31801u-2.25705\\0.682063u^{39}-1.47618u^{38}+\cdots-0.398077u+6.27477\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-0.641501u^{39}+2.61722u^{38}+\cdots-20.9827u+11.6808\\12.5542u^{39}-34.9248u^{38}+\cdots+143.372u+12.7987\end{pmatrix}$$
$$a_6 = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}u^2+1\\u^2\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0.0859023u^{39}-0.251901u^{38}+\cdots+3.62263u-2.89947\\0.765800u^{39}-1.85834u^{38}+\cdots+3.12660u+3.99109\end{pmatrix}$$
$$a_5 = \begin{pmatrix}0.631022u^{39}-1.33792u^{38}+\cdots-0.351315u+8.02593\\1.66472u^{39}-16.7390u^{38}+\cdots+189.659u-152.107\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-0.124411u^{39}+0.398166u^{38}+\cdots-2.48210u+0.766635\\0.684909u^{39}-0.915620u^{38}+\cdots-3.65756u+13.0927\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-0.124411u^{39}+0.398166u^{38}+\cdots-2.48210u+0.766635\\0.684909u^{39}-0.915620u^{38}+\cdots-3.65756u+13.0927\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_5^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.966472-0.204987I$ $a=\ \ 1.062267-0.722994I$ $b=\ \ 0.221672+0.177889I$	$-0.72067+6.27316I$	$-12.10015-6.54347I$
$u=-0.966472+0.204987I$ $a=\ \ 1.062267+0.722994I$ $b=\ \ 0.221672-0.177889I$	$-0.72067-6.27316I$	$-12.10015+6.54347I$
$u=-0.78685-1.24207I$ $a=-0.729482+0.508679I$ $b=-1.68543+0.80883I$	$-6.73027-9.64430I$	$-15.6547+6.2054I$
$u=-0.78685+1.24207I$ $a=-0.729482-0.508679I$ $b=-1.68543-0.80883I$	$-6.73027+9.64430I$	$-15.6547-6.2054I$
$u=-0.539846-1.156749I$ $a=\ \ 0.545893+0.352549I$ $b=\ \ 1.174275-0.319453I$	$-3.49387-4.79919I$	$-12.69810+3.09464I$
$u=-0.539846+1.156749I$ $a=\ \ 0.545893-0.352549I$ $b=\ \ 1.174275+0.319453I$	$-3.49387+4.79919I$	$-12.69810-3.09464I$
$u=-0.536847-1.066783I$ $a=\ \ 0.635978-0.406316I$ $b=\ \ 1.61232+0.12503I$	$4.54605-1.94645I$	$-5.05320+4.81876I$
$u=-0.536847+1.066783I$ $a=\ \ 0.635978+0.406316I$ $b=\ \ 1.61232-0.12503I$	$4.54605+1.94645I$	$-5.05320-4.81876I$
$u=-0.531514-0.736461I$ $a=\ \ 0.43783-1.34728I$ $b=-0.656171+0.173872I$	$-7.52808-0.63661I$	$-16.9604-0.1699I$
$u=-0.531514+0.736461I$ $a=\ \ 0.43783+1.34728I$ $b=-0.656171-0.173872I$	$-7.52808+0.63661I$	$-16.9604+0.1699I$

Solution to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.457374 - 0.019438I$ $a = 0.13605 - 1.57227I$ $b = 0.641245 + 0.159917I$	$2.37392 - 1.80448I$	$-8.82463 + 3.70058I$
$u = -0.457374 + 0.019438I$ $a = 0.13605 + 1.57227I$ $b = 0.641245 - 0.159917I$	$2.37392 + 1.80448I$	$-8.82463 - 3.70058I$
$u = -0.402724 - 0.973230I$ $a = -0.795000 + 0.874208I$ $b = -1.47973 + 0.78488I$	$-1.14846 - 2.14390I$	$-13.45592 + 0.24308I$
$u = -0.402724 + 0.973230I$ $a = -0.795000 - 0.874208I$ $b = -1.47973 - 0.78488I$	$-1.14846 + 2.14390I$	$-13.45592 - 0.24308I$
$u = -0.265345 - 1.338092I$ $a = -0.220507 - 0.622815I$ $b = -0.615569 - 0.777760I$	$4.54605 + 1.94645I$	$-5.05320 - 4.81876I$
$u = -0.265345 + 1.338092I$ $a = -0.220507 + 0.622815I$ $b = -0.615569 + 0.777760I$	$4.54605 - 1.94645I$	$-5.05320 + 4.81876I$
$u = 0.067663 - 1.006844I$ $a = -0.070554 - 1.049855I$ $b = -8.41003 + 8.38834I$	-3.24334	-17.8998
$u = 0.067663 + 1.006844I$ $a = -0.070554 + 1.049855I$ $b = -8.41003 - 8.38834I$	-3.24334	-17.8998
$u = 0.08686 - 1.50116I$ $a = -0.306866 + 0.625312I$ $b = -1.102656 + 0.665990I$	$0.30488 - 4.84109I$	$-11.63163 + 6.37981I$
$u = 0.08686 + 1.50116I$ $a = -0.306866 - 0.625312I$ $b = -1.102656 - 0.665990I$	$0.30488 + 4.84109I$	$-11.63163 - 6.37981I$

Solution to I_5^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.169382 - 1.042147I$ $a = 0.111475 + 0.685868I$ $b = 1.89656 + 1.65584I$	2.31303	-14.9388
$u = 0.169382 + 1.042147I$ $a = 0.111475 - 0.685868I$ $b = 1.89656 - 1.65584I$	2.31303	-14.9388
$u = 0.222487 - 1.085195I$ $a = 0.616770 - 0.211956I$ $b = 1.182329 + 0.143493I$	$2.37392 + 1.80448I$	$-8.82463 - 3.70058I$
$u = 0.222487 + 1.085195I$ $a = 0.616770 + 0.211956I$ $b = 1.182329 - 0.143493I$	$2.37392 - 1.80448I$	$-8.82463 + 3.70058I$
$u = 0.296099 - 1.343353I$ $a = 0.463287 + 0.292122I$ $b = 1.54793 - 0.00842I$	$1.34713 - 0.58469I$	$-9.20205 + 0.00910I$
$u = 0.296099 + 1.343353I$ $a = 0.463287 - 0.292122I$ $b = 1.54793 + 0.00842I$	$1.34713 + 0.58469I$	$-9.20205 - 0.00910I$
$u = 0.541181 - 1.104513I$ $a = -0.201778 + 0.578355I$ $b = -0.033752 + 0.273970I$	$1.34713 + 0.58469I$	$-9.20205 - 0.00910I$
$u = 0.541181 + 1.104513I$ $a = -0.201778 - 0.578355I$ $b = -0.033752 - 0.273970I$	$1.34713 - 0.58469I$	$-9.20205 + 0.00910I$
$u = 0.575083 - 0.580865I$ $a = -1.39659 - 0.72612I$ $b = -1.34777 - 1.04742I$	$-7.52808 - 0.63661I$	$-16.9604 - 0.1699I$
$u = 0.575083 + 0.580865I$ $a = -1.39659 + 0.72612I$ $b = -1.34777 + 1.04742I$	$-7.52808 + 0.63661I$	$-16.9604 + 0.1699I$

Solution to I^u_5	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.592656 - 0.264629I$ $a = 1.38249 + 1.32877I$ $b = -0.095630 + 0.178172I$	$-1.14846 - 2.14390I$	$-13.45592 + 0.24308I$
$u = 0.592656 + 0.264629I$ $a = 1.38249 - 1.32877I$ $b = -0.095630 - 0.178172I$	$-1.14846 + 2.14390I$	$-13.45592 - 0.24308I$
$u = 0.597799 - 1.194488I$ $a = -0.715673 - 0.625396I$ $b = -1.59978 - 0.78704I$	$-0.72067 + 6.27316I$	$-12.10015 - 6.54347I$
$u = 0.597799 + 1.194488I$ $a = -0.715673 + 0.625396I$ $b = -1.59978 + 0.78704I$	$-0.72067 - 6.27316I$	$-12.10015 + 6.54347I$
$u = 0.792130 - 0.867615I$ $a = 0.847143 + 0.277766I$ $b = 1.345935 - 0.150156I$	$0.30488 + 4.84109I$	$-11.63163 - 6.37981I$
$u = 0.792130 + 0.867615I$ $a = 0.847143 - 0.277766I$ $b = 1.345935 + 0.150156I$	$0.30488 - 4.84109I$	$-11.63163 + 6.37981I$
$u = 0.880675 - 0.188465I$ $a = 0.313760 - 0.865984I$ $b = 0.676385 + 0.372502I$	$-3.49387 - 4.79919I$	$-12.69810 + 3.09464I$
$u = 0.880675 + 0.188465I$ $a = 0.313760 + 0.865984I$ $b = 0.676385 - 0.372502I$	$-3.49387 + 4.79919I$	$-12.69810 - 3.09464I$
$u = 1.164958 - 0.329003I$ $a = 0.845040 + 0.672841I$ $b = 0.227872 - 0.431194I$	$-6.73027 - 9.64430I$	$-15.6547 + 6.2054I$
$u = 1.164958 + 0.329003I$ $a = 0.845040 - 0.672841I$ $b = 0.227872 + 0.431194I$	$-6.73027 + 9.64430I$	$-15.6547 - 6.2054I$

VI. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1	$(2u+1)(4u^2-4u-1)(9u^4+9u^2-6u+1)(8u^{28}+4u^{27}+\cdots-13u-1)$ $(u^{40}+21u^{39}+\cdots-1158u+199)$
c_2, c_{11}	$(u-1)(u+1)^2(u^2+1)^2(u^{28}-u^{27}+\cdots+2u-1)$ $(u^{40}+3u^{39}+\cdots+16u+13)$
c_3, c_8, c_9	$u(u^2-2)(u^4-u^2+1)$ $(-1+2u-u^2+3u^3+u^4+6u^5-6u^6-4u^7+13u^8-10u^9-33u^{10}-7u^{11}+62u^{12}+30u^{13}$ $(u^{28}+3u^{27}+\cdots+18u^2-8)$
c_4, c_6	$(u-1)^2(u+1)(u^2+1)^2(u^{28}-u^{27}+\cdots+2u-1)$ $(u^{40}+3u^{39}+\cdots+16u+13)$
c_5	$(2u-1)(4u^2+4u-1)(9u^4+9u^2+6u+1)(8u^{28}+4u^{27}+\cdots-13u-1)$ $(u^{40}+21u^{39}+\cdots-1158u+199)$
c_7	$(u-1)(u+1)^2(u^2-u+1)^2$ $(-1-2u-u^2+u^3+3u^4+4u^5-10u^7-9u^8+4u^9+13u^{10}+13u^{11}-2u^{12}-22u^{13}-10u^{1}$ $(u^{28}+2u^{27}+\cdots+7u+8)$
c_{10}	$(u-1)^2(u+1)(u^2+u+1)^2$ $(-1-2u-u^2+u^3+3u^4+4u^5-10u^7-9u^8+4u^9+13u^{10}+13u^{11}-2u^{12}-22u^{13}-10u^{1}$ $(u^{28}+2u^{27}+\cdots+7u+8)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_5	$(4y-1)(16y^2-24y+1)(81y^4+162y^3+99y^2-18y+1)$ $(64y^{28}-752y^{27}+\cdots-97y+1)$ $(y^{40}+11y^{39}+\cdots+1102756y+39601)$
c_2, c_4, c_6 c_{11}	$(y-1)^3(y+1)^4(y^{28}+9y^{27}+\cdots-22y+1)$ $(y^{40}+23y^{39}+\cdots-724y+169)$
c_3, c_8, c_9	$y(y-2)^2(y^2-y+1)^2$ $(1-2y-13y^2-23y^3-33y^4+56y^5+140y^6-196y^7+667y^8-2178y^9+3871y^{10}-5851y^1$ $(y^{28}-25y^{27}+\cdots-288y+64)$
c_7, c_{10}	$(y-1)^3(y^2+y+1)^2$ $(1-2y-y^2+9y^3-21y^4+12y^5+48y^6-144y^7+151y^8+58y^9-377y^{10}+469y^{11}-132y^1$ $(y^{28}-12y^{27}+\cdots-2657y+64)$