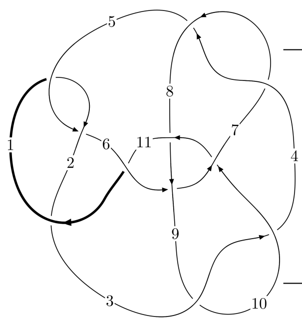
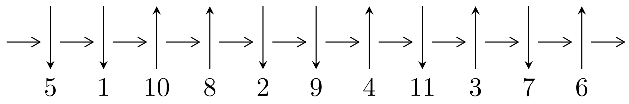
$11a_{160}$ ($K11a_{160}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -5u^{29} - 20u^{28} + \cdots + 2b - 14,\ 3u^{29} + 16u^{28} + \cdots + 4a - 9u,\ u^{30} + 6u^{29} + \cdots + 26u + 4\rangle$$

$$I_2^u = \langle 4584333581u^{13}a^3 + 6949760010u^{13}a^2 + \cdots - 45118851a - 4067169136,$$
$$- 2u^{13}a^3 - 2u^{13}a^2 + \cdots + a - 4,\ u^{14} - u^{13} - 3u^{12} + 4u^{11} + 4u^{10} - 7u^9 - u^8 + 6u^7 - 2u^6 - 2u^5 + 2u^4 - u -$$

$$I_3^u = \langle u^{12} + u^{11} - 3u^{10} - 2u^9 + 5u^8 + 2u^7 - 3u^6 + u^5 + 2u^4 - 2u^3 - 2u^2 + b + u + 2,$$
$$- u^{13} + u^{12} + 5u^{11} - 4u^{10} - 9u^9 + 8u^8 + 8u^7 - 9u^6 + 9u^4 - 4u^3 - 6u^2 + a + 2u + 3,$$
$$u^{14} - u^{13} - 3u^{12} + 4u^{11} + 4u^{10} - 7u^9 - u^8 + 7u^7 - 3u^6 - 4u^5 + 4u^4 + 2u^3 - 2u^2 - u + 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 100 representations.

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[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. $I_1^u = \langle -5u^{29} - 20u^{28} + \cdots + 2b - 14,\ 3u^{29} + 16u^{28} + \cdots + 4a - 9u,\ u^{30} + 6u^{29} + \cdots + 26u + 4\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -\frac{3}{4}u^{29} - 4u^{28} + \cdots - 2u^2 + \frac{9}{4}u \\ \frac{5}{2}u^{29} + 10u^{28} + \cdots + \frac{77}{2}u + 7 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -7u^{29} - \frac{69}{2}u^{28} + \cdots - 133u - \frac{43}{2} \\ -\frac{11}{2}u^{29} - 29u^{28} + \cdots - \frac{289}{2}u - 26 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^3 \\ -u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} \frac{17}{4}u^{29} + 26u^{28} + \cdots + \frac{625}{4}u + 28 \\ \frac{1}{2}u^{29} + 5u^{28} + \cdots + \frac{97}{2}u + 9 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} \frac{29}{4}u^{29} + 34u^{28} + \cdots + \frac{497}{4}u + 20 \\ \frac{13}{2}u^{29} + 32u^{28} + \cdots + \frac{281}{2}u + 25 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^{29} + \frac{3}{2}u^{28} + \cdots - 29u - \frac{11}{2} \\ \frac{11}{2}u^{29} + 27u^{28} + \cdots + \frac{157}{2}u + 12 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^{29} + \frac{3}{2}u^{28} + \cdots - 29u - \frac{11}{2} \\ \frac{11}{2}u^{29} + 27u^{28} + \cdots + \frac{157}{2}u + 12 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 2u^{29} + 12u^{28} + 8u^{27} - 69u^{26} - 140u^{25} + 91u^{24} + 537u^{23} + 337u^{22} - 834u^{21} - 1449u^{20} - 13u^{19} + 2090u^{18} + 1957u^{17} - 581u^{16} - 2559u^{15} - 1877u^{14} + 350u^{13} + 1886u^{12} + 1755u^{11} + 441u^{10} - 966u^9 - 1388u^8 - 688u^7 + 298u^6 + 655u^5 + 378u^4 - 5u^3 - 123u^2 - 80u - 22$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{30} + 6u^{29} + \cdots + 26u + 4$
c_2	$u^{30} + 14u^{29} + \cdots + 28u + 16$
c_3, c_4, c_7 c_9	$u^{30} - u^{29} + \cdots + u + 1$
c_6, c_8	$u^{30} + u^{29} + \cdots - 4u + 1$
c_{10}	$u^{30} + 27u^{29} + \cdots + 237568u + 16384$
c_{11}	$u^{30} + 18u^{29} + \cdots - 314u - 52$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{30} - 14y^{29} + \cdots - 28y + 16$
c_2	$y^{30} + 2y^{29} + \cdots + 272y + 256$
c_3, c_4, c_7 c_9	$y^{30} - 21y^{29} + \cdots - y + 1$
c_6, c_8	$y^{30} - 9y^{29} + \cdots - 22y + 1$
c_{10}	$y^{30} - y^{29} + \cdots - 335544320y + 268435456$
c_{11}	$y^{30} + 10y^{29} + \cdots - 170460y + 2704$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.439336 + 0.898767I$ $a = 0.0838685 - 0.0685218I$ $b = -1.000000 - 0.322600I$	$3.15371 - 2.25650I$	$2.07479 + 3.80636I$
$u = -0.439336 - 0.898767I$ $a = 0.0838685 + 0.0685218I$ $b = -1.000000 + 0.322600I$	$3.15371 + 2.25650I$	$2.07479 - 3.80636I$
$u = -0.722214 + 0.756555I$ $a = -0.439844 - 0.438388I$ $b = 0.272057 - 0.561915I$	$8.50027 + 8.77817I$	$5.31474 - 7.47276I$
$u = -0.722214 - 0.756555I$ $a = -0.439844 + 0.438388I$ $b = 0.272057 + 0.561915I$	$8.50027 - 8.77817I$	$5.31474 + 7.47276I$
$u = 0.926063$ $a = 1.84538$ $b = 0.400139$	-2.97639	3.61540
$u = -0.322085 + 0.845243I$ $a = -0.394213 + 0.321013I$ $b = 1.54730 + 1.17314I$	$6.21887 - 11.79360I$	$3.80243 + 6.19160I$
$u = -0.322085 - 0.845243I$ $a = -0.394213 - 0.321013I$ $b = 1.54730 - 1.17314I$	$6.21887 + 11.79360I$	$3.80243 - 6.19160I$
$u = 0.179468 + 0.841852I$ $a = -0.235984 + 0.259151I$ $b = 0.431156 - 0.249453I$	$1.38263 + 1.72204I$	$-2.32664 + 0.60868I$
$u = 0.179468 - 0.841852I$ $a = -0.235984 - 0.259151I$ $b = 0.431156 + 0.249453I$	$1.38263 - 1.72204I$	$-2.32664 - 0.60868I$
$u = 1.14537$ $a = 1.61718$ $b = 0.972133$	-2.84813	-1.74440

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.902723 + 0.723773I$ $a = 0.684334 - 0.575975I$ $b = -0.0118221 - 0.1286980I$	$7.98240 - 3.24098I$	$5.21335 + 3.14058I$
$u = -0.902723 - 0.723773I$ $a = 0.684334 + 0.575975I$ $b = -0.0118221 + 0.1286980I$	$7.98240 + 3.24098I$	$5.21335 - 3.14058I$
$u = 1.103300 + 0.364983I$ $a = 1.55520 - 0.98449I$ $b = 1.25361 + 0.73971I$	$-5.00799 - 1.36896I$	$-7.09046 + 4.51225I$
$u = 1.103300 - 0.364983I$ $a = 1.55520 + 0.98449I$ $b = 1.25361 - 0.73971I$	$-5.00799 + 1.36896I$	$-7.09046 - 4.51225I$
$u = -1.107070 + 0.415384I$ $a = -1.078500 - 0.245150I$ $b = -1.062860 + 0.303827I$	$-2.31526 + 1.75344I$	$-3.75152 - 0.07888I$
$u = -1.107070 - 0.415384I$ $a = -1.078500 + 0.245150I$ $b = -1.062860 - 0.303827I$	$-2.31526 - 1.75344I$	$-3.75152 + 0.07888I$
$u = -1.114950 + 0.506217I$ $a = 2.03271 + 0.97995I$ $b = 2.09198 - 0.46050I$	$-4.02021 + 6.15111I$	$-5.67724 - 4.92712I$
$u = -1.114950 - 0.506217I$ $a = 2.03271 - 0.97995I$ $b = 2.09198 + 0.46050I$	$-4.02021 - 6.15111I$	$-5.67724 + 4.92712I$
$u = 1.212810 + 0.208647I$ $a = -1.46726 + 1.37249I$ $b = -1.63850 + 0.28323I$	$1.15159 + 8.63900I$	$-1.81852 - 4.95805I$
$u = 1.212810 - 0.208647I$ $a = -1.46726 - 1.37249I$ $b = -1.63850 - 0.28323I$	$1.15159 - 8.63900I$	$-1.81852 + 4.95805I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.199610 + 0.446464I$ $a = -0.854653 + 0.108182I$ $b = -0.517155 - 0.771435I$	$-1.92835 - 6.42721I$	$-4.67944 + 7.09422I$
$u = 1.199610 - 0.446464I$ $a = -0.854653 - 0.108182I$ $b = -0.517155 + 0.771435I$	$-1.92835 + 6.42721I$	$-4.67944 - 7.09422I$
$u = -1.157040 + 0.588836I$ $a = -2.39255 - 0.65462I$ $b = -2.02356 + 1.41500I$	$3.7202 + 17.0985I$	$0.80952 - 9.70777I$
$u = -1.157040 - 0.588836I$ $a = -2.39255 + 0.65462I$ $b = -2.02356 - 1.41500I$	$3.7202 - 17.0985I$	$0.80952 + 9.70777I$
$u = -0.594964 + 0.357254I$ $a = -0.390744 + 0.913670I$ $b = -0.074831 + 0.824062I$	$-0.55728 + 1.33045I$	$-2.87243 - 5.52992I$
$u = -0.594964 - 0.357254I$ $a = -0.390744 - 0.913670I$ $b = -0.074831 - 0.824062I$	$-0.55728 - 1.33045I$	$-2.87243 + 5.52992I$
$u = -1.141330 + 0.635650I$ $a = 1.17423 + 0.86253I$ $b = 1.282610 - 0.490541I$	$0.98575 + 7.90704I$	$0.97053 - 7.34135I$
$u = -1.141330 - 0.635650I$ $a = 1.17423 - 0.86253I$ $b = 1.282610 + 0.490541I$	$0.98575 - 7.90704I$	$0.97053 + 7.34135I$
$u = -0.229199 + 0.619350I$ $a = 0.242118 - 0.914072I$ $b = -1.236100 - 0.431601I$	$-1.54965 - 1.73951I$	$-3.40461 + 1.10111I$
$u = -0.229199 - 0.619350I$ $a = 0.242118 + 0.914072I$ $b = -1.236100 + 0.431601I$	$-1.54965 + 1.73951I$	$-3.40461 - 1.10111I$

II. $\boldsymbol{I^u_2 = \langle 4.58 \times 10^9 a^3 u^{13} + 6.95 \times 10^9 a^2 u^{13} + \cdots - 4.51 \times 10^7 a - 4.07 \times 10^9,\ -2u^{13}a^3 - 2u^{13}a^2 + \cdots + a - 4,\ u^{14} - u^{13} + \cdots - u + 1\rangle}$

(i) Arc colorings

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

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

$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} a \\ -0.858220a^3u^{13} - 1.30104a^2u^{13} + \cdots + 0.00844657a + 0.761403 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.285097a^3u^{13} - 0.713627a^2u^{13} + \cdots + 0.0914136a + 0.664261 \\ -2.20874a^3u^{13} - 1.66317a^2u^{13} + \cdots - 0.0419375a + 1.39631 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^3 \\ -u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.100479a^3u^{13} + 0.285033a^2u^{13} + \cdots + 0.856611a + 0.924305 \\ -1.72044a^3u^{13} - 1.88475a^2u^{13} + \cdots + 0.0429787a + 1.64797 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.100479a^3u^{13} + 0.285033a^2u^{13} + \cdots + 0.856611a + 0.924305 \\ -0.344202a^3u^{13} - 1.03547a^2u^{13} + \cdots + 0.0994736a + 0.860482 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.0876640a^3u^{13} + 0.537440a^2u^{13} + \cdots - 0.230678a + 2.32540 \\ -1.05501a^3u^{13} - 2.45763a^2u^{13} + \cdots + 0.114279a + 2.10614 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.0876640a^3u^{13} + 0.537440a^2u^{13} + \cdots - 0.230678a + 2.32540 \\ -1.05501a^3u^{13} - 2.45763a^2u^{13} + \cdots + 0.114279a + 2.10614 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{783664904}{254365539}u^{13}a^3 - \frac{12683216}{84788513}u^{13}a^2 + \cdots - \frac{129411644}{84788513}a + \frac{810307330}{254365539}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$(u^{14} - u^{13} + \cdots - u + 1)^4$
c_2	$(u^{14} + 7u^{13} + \cdots + u + 1)^4$
c_3, c_4, c_7 c_9	$u^{56} + u^{55} + \cdots + 362u + 259$
c_6, c_8	$u^{56} - 15u^{55} + \cdots - 26u + 1$
c_{10}	$(u^2 - u + 1)^{28}$
c_{11}	$(u^{14} - 3u^{13} + \cdots - 7u + 3)^4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$(y^{14} - 7y^{13} + \cdots - y + 1)^4$
c_2	$(y^{14} + y^{13} + \cdots + 7y + 1)^4$
c_3, c_4, c_7 c_9	$y^{56} - 45y^{55} + \cdots - 2168856y + 67081$
c_6, c_8	$y^{56} + 11y^{55} + \cdots - 92y + 1$
c_{10}	$(y^2 + y + 1)^{28}$
c_{11}	$(y^{14} + 5y^{13} + \cdots + 23y + 9)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.989783 + 0.381937I$ $a = 0.657240 - 0.120571I$ $b = 0.714102 - 0.891128I$	$3.24009 - 3.43472I$	$0.49073 + 3.99358I$
$u = 0.989783 + 0.381937I$ $a = 1.32255 - 1.58704I$ $b = 2.39216 - 0.27199I$	$3.24009 + 0.62505I$	$0.49073 - 2.93462I$
$u = 0.989783 + 0.381937I$ $a = -2.56099 - 0.78225I$ $b = -1.063230 - 0.840351I$	$3.24009 + 0.62505I$	$0.49073 - 2.93462I$
$u = 0.989783 + 0.381937I$ $a = -2.08989 + 2.37774I$ $b = -2.34188 + 0.29641I$	$3.24009 - 3.43472I$	$0.49073 + 3.99358I$
$u = 0.989783 - 0.381937I$ $a = 0.657240 + 0.120571I$ $b = 0.714102 + 0.891128I$	$3.24009 + 3.43472I$	$0.49073 - 3.99358I$
$u = 0.989783 - 0.381937I$ $a = 1.32255 + 1.58704I$ $b = 2.39216 + 0.27199I$	$3.24009 - 0.62505I$	$0.49073 + 2.93462I$
$u = 0.989783 - 0.381937I$ $a = -2.56099 + 0.78225I$ $b = -1.063230 + 0.840351I$	$3.24009 - 0.62505I$	$0.49073 + 2.93462I$
$u = 0.989783 - 0.381937I$ $a = -2.08989 - 2.37774I$ $b = -2.34188 - 0.29641I$	$3.24009 + 3.43472I$	$0.49073 - 3.99358I$
$u = 0.728347 + 0.560551I$ $a = 0.597987 - 0.378073I$ $b = -0.012399 - 0.961994I$	$3.49442 - 4.22117I$	$3.23919 + 7.32128I$
$u = 0.728347 + 0.560551I$ $a = -1.358540 - 0.008569I$ $b = -0.321734 - 0.081885I$	$3.49442 - 0.16140I$	$3.23919 + 0.39308I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.728347 + 0.560551I$ $a = -0.34870 + 1.50038I$ $b = -0.741817 + 0.609882I$	$3.49442 - 4.22117I$	$3.23919 + 7.32128I$
$u = 0.728347 + 0.560551I$ $a = 0.261952 - 0.336693I$ $b = 1.003780 - 0.395230I$	$3.49442 - 0.16140I$	$3.23919 + 0.39308I$
$u = 0.728347 - 0.560551I$ $a = 0.597987 + 0.378073I$ $b = -0.012399 + 0.961994I$	$3.49442 + 4.22117I$	$3.23919 - 7.32128I$
$u = 0.728347 - 0.560551I$ $a = -1.358540 + 0.008569I$ $b = -0.321734 + 0.081885I$	$3.49442 + 0.16140I$	$3.23919 - 0.39308I$
$u = 0.728347 - 0.560551I$ $a = -0.34870 - 1.50038I$ $b = -0.741817 - 0.609882I$	$3.49442 + 4.22117I$	$3.23919 - 7.32128I$
$u = 0.728347 - 0.560551I$ $a = 0.261952 + 0.336693I$ $b = 1.003780 + 0.395230I$	$3.49442 + 0.16140I$	$3.23919 - 0.39308I$
$u = -1.068410 + 0.522447I$ $a = -0.525510 - 0.092447I$ $b = -0.806781 - 0.696072I$	$4.37100 + 3.04196I$	$3.67153 - 2.86716I$
$u = -1.068410 + 0.522447I$ $a = 2.37666 - 0.01914I$ $b = 1.64556 - 2.27656I$	$4.37100 + 7.10173I$	$3.67153 - 9.79536I$
$u = -1.068410 + 0.522447I$ $a = 0.63399 - 2.35193I$ $b = -0.844123 - 0.882615I$	$4.37100 + 7.10173I$	$3.67153 - 9.79536I$
$u = -1.068410 + 0.522447I$ $a = -3.03321 - 1.32932I$ $b = -2.32986 + 1.58159I$	$4.37100 + 3.04196I$	$3.67153 - 2.86716I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.068410-0.522447I$ $a=-0.525510+0.092447I$ $b=-0.806781+0.696072I$	$4.37100-3.04196I$	$3.67153+2.86716I$
$u=-1.068410-0.522447I$ $a=2.37666+0.01914I$ $b=1.64556+2.27656I$	$4.37100-7.10173I$	$3.67153+9.79536I$
$u=-1.068410-0.522447I$ $a=0.63399+2.35193I$ $b=-0.844123+0.882615I$	$4.37100-7.10173I$	$3.67153+9.79536I$
$u=-1.068410-0.522447I$ $a=-3.03321+1.32932I$ $b=-2.32986-1.58159I$	$4.37100-3.04196I$	$3.67153+2.86716I$
$u=-1.157220+0.286866I$ $a=-1.227340-0.668393I$ $b=-1.119640+0.713558I$	$-2.89147-2.50043I$	$-3.32829+3.28061I$
$u=-1.157220+0.286866I$ $a=-1.44410-0.25370I$ $b=-1.172660+0.475656I$	$-2.89147+1.55933I$	$-3.32829-3.64759I$
$u=-1.157220+0.286866I$ $a=0.312105-0.206190I$ $b=-0.216236-0.532280I$	$-2.89147+1.55933I$	$-3.32829-3.64759I$
$u=-1.157220+0.286866I$ $a=1.39506+1.87867I$ $b=1.76504+0.51757I$	$-2.89147-2.50043I$	$-3.32829+3.28061I$
$u=-1.157220-0.286866I$ $a=-1.227340+0.668393I$ $b=-1.119640-0.713558I$	$-2.89147+2.50043I$	$-3.32829-3.28061I$
$u=-1.157220-0.286866I$ $a=-1.44410+0.25370I$ $b=-1.172660-0.475656I$	$-2.89147-1.55933I$	$-3.32829+3.64759I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.157220-0.286866I$ $a=0.312105+0.206190I$ $b=-0.216236+0.532280I$	$-2.89147-1.55933I$	$-3.32829+3.64759I$
$u=-1.157220-0.286866I$ $a=1.39506-1.87867I$ $b=1.76504-0.51757I$	$-2.89147+2.50043I$	$-3.32829-3.28061I$
$u=0.268039+0.757899I$ $a=-0.449529-0.923610I$ $b=1.32307-0.54117I$	$1.42232+5.65867I$	$2.33383-6.09636I$
$u=0.268039+0.757899I$ $a=-0.501123+0.090881I$ $b=0.680414-0.544761I$	$1.42232+1.59890I$	$2.33383+0.83184I$
$u=0.268039+0.757899I$ $a=0.443932+0.162321I$ $b=-1.46411+1.38595I$	$1.42232+5.65867I$	$2.33383-6.09636I$
$u=0.268039+0.757899I$ $a=-0.155374+0.294611I$ $b=0.121708+0.244509I$	$1.42232+1.59890I$	$2.33383+0.83184I$
$u=0.268039-0.757899I$ $a=-0.449529+0.923610I$ $b=1.32307+0.54117I$	$1.42232-5.65867I$	$2.33383+6.09636I$
$u=0.268039-0.757899I$ $a=-0.501123-0.090881I$ $b=0.680414+0.544761I$	$1.42232-1.59890I$	$2.33383-0.83184I$
$u=0.268039-0.757899I$ $a=0.443932-0.162321I$ $b=-1.46411-1.38595I$	$1.42232-5.65867I$	$2.33383+6.09636I$
$u=0.268039-0.757899I$ $a=-0.155374-0.294611I$ $b=0.121708-0.244509I$	$1.42232-1.59890I$	$2.33383-0.83184I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.142590 + 0.546762I$ $a = 0.638961 + 0.080893I$ $b = 0.450729 + 0.190702I$	$-1.12941 - 6.50135I$	$-0.72348 + 2.71621I$
$u = 1.142590 + 0.546762I$ $a = -1.43117 + 0.49772I$ $b = -1.28962 - 0.92983I$	$-1.12941 - 6.50135I$	$-0.72348 + 2.71621I$
$u = 1.142590 + 0.546762I$ $a = -1.89157 + 0.84278I$ $b = -2.19597 - 0.59687I$	$-1.12941 - 10.56110I$	$-0.72348 + 9.64441I$
$u = 1.142590 + 0.546762I$ $a = 2.78876 - 0.44602I$ $b = 1.97531 + 1.69293I$	$-1.12941 - 10.56110I$	$-0.72348 + 9.64441I$
$u = 1.142590 - 0.546762I$ $a = 0.638961 - 0.080893I$ $b = 0.450729 - 0.190702I$	$-1.12941 + 6.50135I$	$-0.72348 - 2.71621I$
$u = 1.142590 - 0.546762I$ $a = -1.43117 - 0.49772I$ $b = -1.28962 + 0.92983I$	$-1.12941 + 6.50135I$	$-0.72348 - 2.71621I$
$u = 1.142590 - 0.546762I$ $a = -1.89157 - 0.84278I$ $b = -2.19597 + 0.59687I$	$-1.12941 + 10.56110I$	$-0.72348 - 9.64441I$
$u = 1.142590 - 0.546762I$ $a = 2.78876 + 0.44602I$ $b = 1.97531 - 1.69293I$	$-1.12941 + 10.56110I$	$-0.72348 - 9.64441I$
$u = -0.403136 + 0.584808I$ $a = -0.960172 + 0.108584I$ $b = 1.76299 + 1.35127I$	$6.29745 + 1.40130I$	$8.31651 - 2.04159I$
$u = -0.403136 + 0.584808I$ $a = -0.658559 - 0.684835I$ $b = 1.06707 - 1.07964I$	$6.29745 - 2.65847I$	$8.31651 + 4.88661I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.403136 + 0.584808I$ $a = 1.20920 + 1.58112I$ $b = 0.319173 + 0.158025I$	$6.29745 + 1.40130I$	$8.31651 - 2.04159I$
$u = -0.403136 + 0.584808I$ $a = 1.99737 - 0.37568I$ $b = -0.80106 - 1.47821I$	$6.29745 - 2.65847I$	$8.31651 + 4.88661I$
$u = -0.403136 - 0.584808I$ $a = -0.960172 - 0.108584I$ $b = 1.76299 - 1.35127I$	$6.29745 - 1.40130I$	$8.31651 + 2.04159I$
$u = -0.403136 - 0.584808I$ $a = -0.658559 + 0.684835I$ $b = 1.06707 + 1.07964I$	$6.29745 + 2.65847I$	$8.31651 - 4.88661I$
$u = -0.403136 - 0.584808I$ $a = 1.20920 - 1.58112I$ $b = 0.319173 - 0.158025I$	$6.29745 - 1.40130I$	$8.31651 + 2.04159I$
$u = -0.403136 - 0.584808I$ $a = 1.99737 + 0.37568I$ $b = -0.80106 + 1.47821I$	$6.29745 + 2.65847I$	$8.31651 - 4.88661I$

III.

$\boldsymbol{I_3^u = \langle u^{12}+u^{11}+\cdots+b+2,\ -u^{13}+u^{12}+\cdots+a+3,\ u^{14}-u^{13}+\cdots-u+1\rangle}$

(i) Arc colorings

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

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

$$a_6 = \begin{pmatrix}1\\u^2\end{pmatrix}$$

$$a_9 = \begin{pmatrix}u^{13}-u^{12}+\cdots-2u-3\\-u^{12}-u^{11}+\cdots-u-2\end{pmatrix}$$

$$a_7 = \begin{pmatrix}-u^{13}+u^{12}+\cdots-5u^2+2\\-u^{13}+u^{12}+\cdots-2u^2+1\end{pmatrix}$$

$$a_1 = \begin{pmatrix}u\\u\end{pmatrix}$$

$$a_3 = \begin{pmatrix}-u^3\\-u^3+u\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-u^{12}-u^{11}+3u^{10}+2u^9-5u^8-3u^7+4u^6-4u^4+3u^3+3u^2-2u-2\\-u^{12}+3u^{10}-u^9-4u^8+2u^7+u^6-2u^5+u^4+u^3-1\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}u^3\\u^5-u^3+u\end{pmatrix}$$

$$a_8 = \begin{pmatrix}u^{13}-u^{12}+\cdots-2u-2\\-u^{12}+3u^{10}-u^9-4u^8+2u^7+u^6-3u^5+u^4+2u^3-u-1\end{pmatrix}$$

$$a_4 = \begin{pmatrix}-3u^{13}+11u^{11}+\cdots+u+5\\-2u^{13}+u^{12}+\cdots-4u^2+3\end{pmatrix}$$

$$a_4 = \begin{pmatrix}-3u^{13}+11u^{11}+\cdots+u+5\\-2u^{13}+u^{12}+\cdots-4u^2+3\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$= 2u^{13}+5u^{12}-12u^{11}-11u^{10}+28u^9+10u^8-30u^7+6u^6+18u^5-15u^4-3u^3+12u^2+6u-1$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{14} + u^{13} + \cdots + u + 1$
c_2	$u^{14} + 7u^{13} + \cdots + 5u + 1$
c_3, c_7	$u^{14} + u^{13} + \cdots + 3u + 1$
c_4, c_9	$u^{14} - u^{13} + \cdots - 3u + 1$
c_5	$u^{14} - u^{13} + \cdots - u + 1$
c_6, c_8	$u^{14} + u^{13} + u^{12} - 3u^{11} - u^{10} - u^9 + 5u^8 - 2u^7 - 4u^5 + 4u^4 + u^2 - 2u + 1$
c_{10}	$u^{14} + 2u^{13} + u^{12} + 4u^{10} + 4u^9 + 2u^7 + 5u^6 + u^5 - u^4 + 3u^3 + u^2 - u + 1$
c_{11}	$u^{14} + 3u^{13} + \cdots + 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{14} - 7y^{13} + \cdots - 5y + 1$
c_2	$y^{14} + y^{13} + \cdots + 7y + 1$
c_3, c_4, c_7 c_9	$y^{14} - 15y^{13} + \cdots - 9y + 1$
c_6, c_8	$y^{14} + y^{13} + \cdots - 2y + 1$
c_{10}	$y^{14} - 2y^{13} + \cdots + y + 1$
c_{11}	$y^{14} + 5y^{13} + \cdots + y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.341418 + 0.896272I$ $a = -0.144947 - 0.094275I$ $b = 0.680620 - 0.402114I$	$1.48125 + 2.28994I$	$-0.76956 - 11.07837I$
$u = 0.341418 - 0.896272I$ $a = -0.144947 + 0.094275I$ $b = 0.680620 + 0.402114I$	$1.48125 - 2.28994I$	$-0.76956 + 11.07837I$
$u = -1.088540 + 0.205382I$ $a = -1.361470 - 0.363666I$ $b = -0.739933 + 0.366961I$	$-3.69709 + 0.34310I$	$-7.64356 - 0.71321I$
$u = -1.088540 - 0.205382I$ $a = -1.361470 + 0.363666I$ $b = -0.739933 - 0.366961I$	$-3.69709 - 0.34310I$	$-7.64356 + 0.71321I$
$u = 1.020860 + 0.434206I$ $a = 2.42462 - 0.94126I$ $b = 2.25373 + 0.19331I$	$3.52230 - 0.63660I$	$2.40553 + 3.12380I$
$u = 1.020860 - 0.434206I$ $a = 2.42462 + 0.94126I$ $b = 2.25373 - 0.19331I$	$3.52230 + 0.63660I$	$2.40553 - 3.12380I$
$u = -1.041720 + 0.508997I$ $a = 0.98641 + 1.35407I$ $b = 1.33024 - 0.77334I$	$4.08559 + 5.66390I$	$2.38420 - 4.61852I$
$u = -1.041720 - 0.508997I$ $a = 0.98641 - 1.35407I$ $b = 1.33024 + 0.77334I$	$4.08559 - 5.66390I$	$2.38420 + 4.61852I$
$u = -0.552395 + 0.530092I$ $a = 1.41370 - 0.38398I$ $b = -0.892127 - 0.192652I$	$5.63571 - 1.41240I$	$4.95246 - 0.76426I$
$u = -0.552395 - 0.530092I$ $a = 1.41370 + 0.38398I$ $b = -0.892127 + 0.192652I$	$5.63571 + 1.41240I$	$4.95246 + 0.76426I$

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.658163 + 0.329875I$ $a = -1.54185 + 1.44828I$ $b = -1.51377 + 0.82770I$	$4.85404 - 2.75383I$	$6.20128 + 4.14732I$
$u = 0.658163 - 0.329875I$ $a = -1.54185 - 1.44828I$ $b = -1.51377 - 0.82770I$	$4.85404 + 2.75383I$	$6.20128 - 4.14732I$
$u = 1.162210 + 0.578741I$ $a = -1.276460 + 0.354911I$ $b = -1.118750 - 0.737948I$	$-1.07739 - 7.66495I$	$-1.03033 + 9.99597I$
$u = 1.162210 - 0.578741I$ $a = -1.276460 - 0.354911I$ $b = -1.118750 + 0.737948I$	$-1.07739 + 7.66495I$	$-1.03033 - 9.99597I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^{14} - u^{13} + \cdots - u + 1)^4)(u^{14} + u^{13} + \cdots + u + 1)$ $\cdot (u^{30} + 6u^{29} + \cdots + 26u + 4)$
c_2	$((u^{14} + 7u^{13} + \cdots + u + 1)^4)(u^{14} + 7u^{13} + \cdots + 5u + 1)$ $\cdot (u^{30} + 14u^{29} + \cdots + 28u + 16)$
c_3, c_7	$(u^{14} + u^{13} + \cdots + 3u + 1)(u^{30} - u^{29} + \cdots + u + 1)$ $\cdot (u^{56} + u^{55} + \cdots + 362u + 259)$
c_4, c_9	$(u^{14} - u^{13} + \cdots - 3u + 1)(u^{30} - u^{29} + \cdots + u + 1)$ $\cdot (u^{56} + u^{55} + \cdots + 362u + 259)$
c_5	$((u^{14} - u^{13} + \cdots - u + 1)^4)(u^{14} - u^{13} + \cdots - u + 1)$ $\cdot (u^{30} + 6u^{29} + \cdots + 26u + 4)$
c_6, c_8	$(u^{14} + u^{13} + u^{12} - 3u^{11} - u^{10} - u^9 + 5u^8 - 2u^7 - 4u^5 + 4u^4 + u^2 - 2u + 1)$ $\cdot (u^{30} + u^{29} + \cdots - 4u + 1)(u^{56} - 15u^{55} + \cdots - 26u + 1)$
c_{10}	$(u^2 - u + 1)^{28}$ $\cdot (u^{14} + 2u^{13} + u^{12} + 4u^{10} + 4u^9 + 2u^7 + 5u^6 + u^5 - u^4 + 3u^3 + u^2 - u + 1)$ $\cdot (u^{30} + 27u^{29} + \cdots + 237568u + 16384)$
c_{11}	$((u^{14} - 3u^{13} + \cdots - 7u + 3)^4)(u^{14} + 3u^{13} + \cdots + 3u + 1)$ $\cdot (u^{30} + 18u^{29} + \cdots - 314u - 52)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$(y^{14} - 7y^{13} + \cdots - 5y + 1)(y^{14} - 7y^{13} + \cdots - y + 1)^4$ $\cdot (y^{30} - 14y^{29} + \cdots - 28y + 16)$
c_2	$(y^{14} + y^{13} + \cdots + 7y + 1)(y^{14} + y^{13} + \cdots + 7y + 1)^4$ $\cdot (y^{30} + 2y^{29} + \cdots + 272y + 256)$
c_3, c_4, c_7 c_9	$(y^{14} - 15y^{13} + \cdots - 9y + 1)(y^{30} - 21y^{29} + \cdots - y + 1)$ $\cdot (y^{56} - 45y^{55} + \cdots - 2168856y + 67081)$
c_6, c_8	$(y^{14} + y^{13} + \cdots - 2y + 1)(y^{30} - 9y^{29} + \cdots - 22y + 1)$ $\cdot (y^{56} + 11y^{55} + \cdots - 92y + 1)$
c_{10}	$((y^2 + y + 1)^{28})(y^{14} - 2y^{13} + \cdots + y + 1)$ $\cdot (y^{30} - y^{29} + \cdots - 335544320y + 268435456)$
c_{11}	$((y^{14} + 5y^{13} + \cdots + 23y + 9)^4)(y^{14} + 5y^{13} + \cdots + y + 1)$ $\cdot (y^{30} + 10y^{29} + \cdots - 170460y + 2704)$