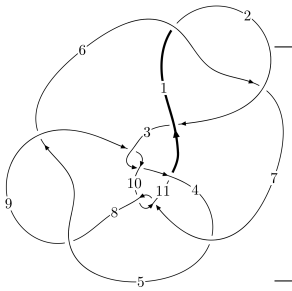
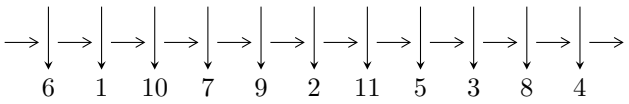
$11a_{227}$ ($K11a_{227}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 11u^{29} - 82u^{28} + \cdots + 4b - 92,\ 527u^{29} - 5269u^{28} + \cdots + 32a + 9872,\ u^{30} - 11u^{29} + \cdots + 192u - 32\rangle$$

$$I_2^u = \langle 11652760173a^9u^5 + 89806445727a^8u^5 + \cdots + 133817291376a + 47860828523,$$
$$2a^8u^5 - 21a^7u^5 + \cdots - 94a - 49,\ u^6 + u^5 - u^4 - 2u^3 + u + 1\rangle$$

$$I_3^u = \langle u^{18} - 2u^{17} + \cdots + b - 5,\ -5u^{18} + u^{17} + \cdots + a + 5,\ u^{19} - 6u^{17} + \cdots - 3u - 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 109 representations.

[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. $I_1^u = \langle 11u^{29} - 82u^{28} + \cdots + 4b - 92,\ 527u^{29} - 5269u^{28} + \cdots + 32a + 9872,\ u^{30} - 11u^{29} + \cdots + 192u - 32\rangle$

(i) Arc colorings

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

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

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

$$a_1 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -\frac{527}{32}u^{29} + \frac{5269}{32}u^{28} + \cdots + 1810u - \frac{617}{2} \\ -\frac{11}{4}u^{29} + \frac{41}{2}u^{28} + \cdots - \frac{141}{2}u + 23 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} \frac{817}{32}u^{29} - \frac{8075}{32}u^{28} + \cdots - 3086u + \frac{1095}{2} \\ \frac{11}{4}u^{29} - \frac{51}{4}u^{28} + \cdots + \frac{2501}{2}u - 297 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} \frac{293}{32}u^{29} - \frac{2921}{32}u^{28} + \cdots - 1146u + 208 \\ -\frac{45}{16}u^{29} + \frac{529}{16}u^{28} + \cdots + 840u - 167 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} \frac{203}{32}u^{29} - \frac{1863}{32}u^{28} + \cdots - 306u + 41 \\ -\frac{45}{16}u^{29} + \frac{529}{16}u^{28} + \cdots + 840u - 167 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -34.7500u^{29} + 340.063u^{28} + \cdots + 3656.25u - 618.500 \\ \frac{41}{16}u^{29} - \frac{545}{16}u^{28} + \cdots - \frac{2761}{2}u + 306 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{161}{32}u^{29} + \frac{1303}{32}u^{28} + \cdots - \frac{405}{2}u + 74 \\ \frac{43}{4}u^{29} - \frac{877}{8}u^{28} + \cdots - 1606u + 307 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{161}{32}u^{29} + \frac{1303}{32}u^{28} + \cdots - \frac{405}{2}u + 74 \\ \frac{43}{4}u^{29} - \frac{877}{8}u^{28} + \cdots - 1606u + 307 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{125}{4}u^{29} - \frac{1153}{4}u^{28} + \cdots - 1098u + 74$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{30} - 11u^{29} + \cdots + 192u - 32$
c_2	$u^{30} + 15u^{29} + \cdots + 6656u + 1024$
c_3, c_5, c_8 c_9	$u^{30} + u^{29} + \cdots - 4u - 1$
c_4, c_{11}	$u^{30} - u^{29} + \cdots + 5u - 1$
c_7, c_{10}	$u^{30} - 15u^{29} + \cdots - 608u + 64$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{30} - 15y^{29} + \cdots - 6656y + 1024$
c_2	$y^{30} + y^{29} + \cdots - 26607616y + 1048576$
c_3, c_5, c_8 c_9	$y^{30} - 19y^{29} + \cdots - 10y + 1$
c_4, c_{11}	$y^{30} + 15y^{29} + \cdots - 63y + 1$
c_7, c_{10}	$y^{30} + 11y^{29} + \cdots - 54272y + 4096$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.354016 + 0.952222I$ $a = -0.347030 - 0.166142I$ $b = -1.70462 + 0.71163I$	$-0.73838 + 11.58090I$	$-10.77845 - 6.50285I$
$u = 0.354016 - 0.952222I$ $a = -0.347030 + 0.166142I$ $b = -1.70462 - 0.71163I$	$-0.73838 - 11.58090I$	$-10.77845 + 6.50285I$
$u = 0.665243 + 0.706437I$ $a = -0.249680 + 0.357056I$ $b = -0.033448 - 0.582987I$	$5.27507 + 0.27236I$	$-4.38143 + 1.72345I$
$u = 0.665243 - 0.706437I$ $a = -0.249680 - 0.357056I$ $b = -0.033448 + 0.582987I$	$5.27507 - 0.27236I$	$-4.38143 - 1.72345I$
$u = 0.831465 + 0.619805I$ $a = 0.566561 - 0.242853I$ $b = -0.287346 + 0.129330I$	$1.77898 - 2.42113I$	$-7.07335 + 4.38585I$
$u = 0.831465 - 0.619805I$ $a = 0.566561 + 0.242853I$ $b = -0.287346 - 0.129330I$	$1.77898 + 2.42113I$	$-7.07335 - 4.38585I$
$u = 0.296677 + 1.000260I$ $a = 0.420856 + 0.176492I$ $b = 1.67360 - 0.55405I$	$-3.57253 + 5.28515I$	$-13.21757 - 4.63262I$
$u = 0.296677 - 1.000260I$ $a = 0.420856 - 0.176492I$ $b = 1.67360 + 0.55405I$	$-3.57253 - 5.28515I$	$-13.21757 + 4.63262I$
$u = -0.926080 + 0.166520I$ $a = 0.558199 + 0.794477I$ $b = -0.298536 - 0.006553I$	$-0.275678 + 0.763775I$	$-12.33614 - 0.51179I$
$u = -0.926080 - 0.166520I$ $a = 0.558199 - 0.794477I$ $b = -0.298536 + 0.006553I$	$-0.275678 - 0.763775I$	$-12.33614 + 0.51179I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.958919 + 0.665702I$ $a = -0.749615 - 0.365794I$ $b = 0.094148 + 0.346299I$	$4.42305 - 5.51991I$	$-5.37311 + 3.55740I$
$u = 0.958919 - 0.665702I$ $a = -0.749615 + 0.365794I$ $b = 0.094148 - 0.346299I$	$4.42305 + 5.51991I$	$-5.37311 - 3.55740I$
$u = 0.782901 + 0.947325I$ $a = -0.338805 + 0.292526I$ $b = -0.616787 + 0.323590I$	$2.03512 - 6.57158I$	$-13.1399 + 7.7803I$
$u = 0.782901 - 0.947325I$ $a = -0.338805 - 0.292526I$ $b = -0.616787 - 0.323590I$	$2.03512 + 6.57158I$	$-13.1399 - 7.7803I$
$u = 0.216760 + 0.735038I$ $a = -0.370196 - 0.451660I$ $b = -1.010310 + 0.550932I$	$3.33461 + 1.71029I$	$-5.29492 - 2.96109I$
$u = 0.216760 - 0.735038I$ $a = -0.370196 + 0.451660I$ $b = -1.010310 - 0.550932I$	$3.33461 - 1.71029I$	$-5.29492 + 2.96109I$
$u = 1.212150 + 0.509515I$ $a = 1.70079 - 0.64122I$ $b = -1.95783 - 0.73496I$	$0.34945 - 6.45290I$	$-8.62006 + 7.93871I$
$u = 1.212150 - 0.509515I$ $a = 1.70079 + 0.64122I$ $b = -1.95783 + 0.73496I$	$0.34945 + 6.45290I$	$-8.62006 - 7.93871I$
$u = 0.972756 + 0.901108I$ $a = 0.334189 - 0.562127I$ $b = -0.131042 - 0.573173I$	$1.48873 - 0.08947I$	$-14.6678 + 0.I$
$u = 0.972756 - 0.901108I$ $a = 0.334189 + 0.562127I$ $b = -0.131042 + 0.573173I$	$1.48873 + 0.08947I$	$-14.6678 + 0.I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.184760 + 0.635088I$ $a = 1.83194 - 1.06102I$ $b = -1.99907 - 1.02698I$	$-3.2788 - 17.3495I$	$-11.0000 + 9.7060I$
$u = 1.184760 - 0.635088I$ $a = 1.83194 + 1.06102I$ $b = -1.99907 + 1.02698I$	$-3.2788 + 17.3495I$	$-11.0000 - 9.7060I$
$u = -1.338150 + 0.148812I$ $a = 1.75034 + 0.56831I$ $b = -1.97215 + 0.06859I$	$-6.69442 - 8.00845I$	$-16.1183 + 5.5286I$
$u = -1.338150 - 0.148812I$ $a = 1.75034 - 0.56831I$ $b = -1.97215 - 0.06859I$	$-6.69442 + 8.00845I$	$-16.1183 - 5.5286I$
$u = 1.214540 + 0.631477I$ $a = -1.67829 + 0.96407I$ $b = 1.97706 + 0.99448I$	$-6.38290 - 11.14710I$	$-15.9321 + 7.3132I$
$u = 1.214540 - 0.631477I$ $a = -1.67829 - 0.96407I$ $b = 1.97706 - 0.99448I$	$-6.38290 + 11.14710I$	$-15.9321 - 7.3132I$
$u = -1.44337 + 0.22944I$ $a = -1.50223 - 0.37543I$ $b = 2.10384 - 0.46294I$	$-9.50227 - 0.94273I$	0
$u = -1.44337 - 0.22944I$ $a = -1.50223 + 0.37543I$ $b = 2.10384 + 0.46294I$	$-9.50227 + 0.94273I$	0
$u = 1.48034$ $a = -1.77242$ $b = 3.14754$	-7.09333	26.3310
$u = -0.445504$ $a = 0.918337$ $b = 0.177465$	-0.640430	-15.6030

II. $\boldsymbol{I_2^u = \langle 1.17 \times 10^{10} a^9 u^5 + 8.98 \times 10^{10} a^8 u^5 + \cdots + 1.34 \times 10^{11} a + 4.79 \times 10^{10},\ 2a^8 u^5 - 21a^7 u^5 + \cdots - 94a - 49,\ u^6 + u^5 - u^4 - 2u^3 + u + 1 \rangle}$

(i) Arc colorings

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

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

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

$$a_1 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} a \\ -0.325577a^9u^5 - 2.50919a^8u^5 + \cdots - 3.73885a - 1.33723 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.183994a^9u^5 + 0.994553a^8u^5 + \cdots + 3.90401a - 0.592599 \\ -0.283072a^9u^5 - 1.62802a^8u^5 + \cdots - 1.40193a - 0.200904 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1.30690a^9u^5 + 3.61273a^8u^5 + \cdots + 1.47966a + 1.63608 \\ -0.967742a^2u^5 + 0.516129u^5 + \cdots - 0.193548a^2 - 1.09677 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1.30690a^9u^5 + 3.61273a^8u^5 + \cdots + 1.47966a + 0.539304 \\ -0.967742a^2u^5 + 0.516129u^5 + \cdots - 0.193548a^2 - 1.09677 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.808536a^9u^5 - 4.31140a^8u^5 + \cdots - 4.22465a - 1.09622 \\ 0.634657a^9u^5 + 1.79927a^8u^5 + \cdots - 0.0967500a - 1.31464 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 3.02127a^9u^5 + 3.28997a^8u^5 + \cdots - 4.33881a - 0.208666 \\ 0.752285a^9u^5 + 3.15457a^8u^5 + \cdots + 1.08110a - 0.182340 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 3.02127a^9u^5 + 3.28997a^8u^5 + \cdots - 4.33881a - 0.208666 \\ 0.752285a^9u^5 + 3.15457a^8u^5 + \cdots + 1.08110a - 0.182340 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$$= \frac{1313859564 28}{35791056355}a^9u^5 + \frac{490666283248}{35791056355}a^8u^5 + \cdots + \frac{186855165268}{35791056355}a - \frac{517357523682}{35791056355}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$(u^6+u^5-u^4-2u^3+u+1)^{10}$
c_2	$(u^6+3u^5+5u^4+4u^3+2u^2+u+1)^{10}$
c_3, c_5, c_8 c_9	$u^{60}+u^{59}+\cdots-5088u+1363$
c_4, c_{11}	$u^{60}-5u^{59}+\cdots+122u+29$
c_7, c_{10}	$(u^5+u^4+2u^3+u^2+u+1)^{12}$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$(y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1)^{10}$
c_2	$(y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1)^{10}$
c_3, c_5, c_8 c_9	$y^{60} - 45y^{59} + \cdots - 62677840y + 1857769$
c_4, c_{11}	$y^{60} - 9y^{59} + \cdots + 41260y + 841$
c_7, c_{10}	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)^{12}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.002190 + 0.295542I$ $a = 0.742657 + 0.425564I$ $b = -0.916583 + 0.350276I$	$-0.95285 + 3.47653I$	$-14.9724 - 2.7044I$
$u = 1.002190 + 0.295542I$ $a = 0.45011 - 1.45671I$ $b = -1.49335 + 1.18033I$	$-0.95285 - 5.32514I$	$-14.9724 + 4.2928I$
$u = 1.002190 + 0.295542I$ $a = -0.113184 + 0.298531I$ $b = 0.870721 - 0.821809I$	$-4.42433 - 0.92430I$	$-18.2356 + 0.7942I$
$u = 1.002190 + 0.295542I$ $a = 1.53453 - 1.13377I$ $b = -0.374716 - 0.392769I$	$-6.49631 + 0.60627I$	$-19.2016 - 3.6364I$
$u = 1.002190 + 0.295542I$ $a = 2.27869 + 0.35511I$ $b = -0.53719 - 1.73478I$	$-6.49631 - 2.45488I$	$-19.2016 + 5.2249I$
$u = 1.002190 + 0.295542I$ $a = 2.27319 - 0.79694I$ $b = -1.58582 + 0.12211I$	$-0.95285 - 5.32514I$	$-14.9724 + 4.2928I$
$u = 1.002190 + 0.295542I$ $a = -2.24008 + 1.19866I$ $b = 0.924059 + 0.316575I$	$-6.49631 - 2.45488I$	$-19.2016 + 5.2249I$
$u = 1.002190 + 0.295542I$ $a = -2.46157 + 1.23803I$ $b = 1.87918 + 0.12872I$	$-4.42433 - 0.92430I$	$-18.2356 + 0.7942I$
$u = 1.002190 + 0.295542I$ $a = -2.88369 + 0.36211I$ $b = 1.38756 + 1.45819I$	$-6.49631 + 0.60627I$	$-19.2016 - 3.6364I$
$u = 1.002190 + 0.295542I$ $a = 2.53373 - 1.75241I$ $b = -2.41207 - 0.03768I$	$-0.95285 + 3.47653I$	$-14.9724 - 2.7044I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.002190 - 0.295542I$ $a = 0.742657 - 0.425564I$ $b = -0.916583 - 0.350276I$	$-0.95285 - 3.47653I$	$-14.9724 + 2.7044I$
$u = 1.002190 - 0.295542I$ $a = 0.45011 + 1.45671I$ $b = -1.49335 - 1.18033I$	$-0.95285 + 5.32514I$	$-14.9724 - 4.2928I$
$u = 1.002190 - 0.295542I$ $a = -0.113184 - 0.298531I$ $b = 0.870721 + 0.821809I$	$-4.42433 + 0.92430I$	$-18.2356 - 0.7942I$
$u = 1.002190 - 0.295542I$ $a = 1.53453 + 1.13377I$ $b = -0.374716 + 0.392769I$	$-6.49631 - 0.60627I$	$-19.2016 + 3.6364I$
$u = 1.002190 - 0.295542I$ $a = 2.27869 - 0.35511I$ $b = -0.53719 + 1.73478I$	$-6.49631 + 2.45488I$	$-19.2016 - 5.2249I$
$u = 1.002190 - 0.295542I$ $a = 2.27319 + 0.79694I$ $b = -1.58582 - 0.12211I$	$-0.95285 + 5.32514I$	$-14.9724 - 4.2928I$
$u = 1.002190 - 0.295542I$ $a = -2.24008 - 1.19866I$ $b = 0.924059 - 0.316575I$	$-6.49631 + 2.45488I$	$-19.2016 - 5.2249I$
$u = 1.002190 - 0.295542I$ $a = -2.46157 - 1.23803I$ $b = 1.87918 - 0.12872I$	$-4.42433 + 0.92430I$	$-18.2356 - 0.7942I$
$u = 1.002190 - 0.295542I$ $a = -2.88369 - 0.36211I$ $b = 1.38756 - 1.45819I$	$-6.49631 - 0.60627I$	$-19.2016 + 3.6364I$
$u = 1.002190 - 0.295542I$ $a = 2.53373 + 1.75241I$ $b = -2.41207 + 0.03768I$	$-0.95285 - 3.47653I$	$-14.9724 + 2.7044I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.428243+0.664531I$ $a=-0.721370-0.709097I$ $b=-0.674020+0.107233I$	$2.82837+3.47653I$	$-7.53897-2.70436I$
$u=-0.428243+0.664531I$ $a=-0.981105+0.272479I$ $b=-1.54329-1.02403I$	$2.82837-5.32514I$	$-7.53897+4.29281I$
$u=-0.428243+0.664531I$ $a=\ \ 0.898402+0.565581I$ $b=\ \ 0.1217720+0.0097093I$	$-0.643115-0.924305I$	$-10.80214+0.79423I$
$u=-0.428243+0.664531I$ $a=\ \ 0.541113+0.738356I$ $b=-1.191620+0.571450I$	$-2.71510+0.60627I$	$-11.76817-3.63642I$
$u=-0.428243+0.664531I$ $a=-1.087110-0.251939I$ $b=-0.732629-1.185040I$	$2.82837+3.47653I$	$-7.53897-2.70436I$
$u=-0.428243+0.664531I$ $a=-1.033070-0.643013I$ $b=-0.123020+0.420914I$	$2.82837-5.32514I$	$-7.53897+4.29281I$
$u=-0.428243+0.664531I$ $a=\ \ 0.758222+0.096285I$ $b=-0.941735-0.247759I$	$-2.71510-2.45488I$	$-11.76817+5.22487I$
$u=-0.428243+0.664531I$ $a=\ \ 0.742084+0.005860I$ $b=\ \ 1.196980+0.711653I$	$-0.643115-0.924305I$	$-10.80214+0.79423I$
$u=-0.428243+0.664531I$ $a=-0.082662-0.691670I$ $b=\ \ 1.60311-0.16418I$	$-2.71510-2.45488I$	$-11.76817+5.22487I$
$u=-0.428243+0.664531I$ $a=-0.381661+0.147894I$ $b=\ \ 1.201490+0.207665I$	$-2.71510+0.60627I$	$-11.76817-3.63642I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.428243-0.664531I$ $a=-0.721370+0.709097I$ $b=-0.674020-0.107233I$	$2.82837-3.47653I$	$-7.53897+2.70436I$
$u=-0.428243-0.664531I$ $a=-0.981105-0.272479I$ $b=-1.54329+1.02403I$	$2.82837+5.32514I$	$-7.53897-4.29281I$
$u=-0.428243-0.664531I$ $a=\ \ 0.898402-0.565581I$ $b=\ \ 0.1217720-0.0097093I$	$-0.643115+0.924305I$	$-10.80214-0.79423I$
$u=-0.428243-0.664531I$ $a=\ \ 0.541113-0.738356I$ $b=-1.191620-0.571450I$	$-2.71510-0.60627I$	$-11.76817+3.63642I$
$u=-0.428243-0.664531I$ $a=-1.087110+0.251939I$ $b=-0.732629+1.185040I$	$2.82837-3.47653I$	$-7.53897+2.70436I$
$u=-0.428243-0.664531I$ $a=-1.033070+0.643013I$ $b=-0.123020-0.420914I$	$2.82837+5.32514I$	$-7.53897-4.29281I$
$u=-0.428243-0.664531I$ $a=\ \ 0.758222-0.096285I$ $b=-0.941735+0.247759I$	$-2.71510+2.45488I$	$-11.76817-5.22487I$
$u=-0.428243-0.664531I$ $a=\ \ 0.742084-0.005860I$ $b=\ \ 1.196980-0.711653I$	$-0.643115+0.924305I$	$-10.80214-0.79423I$
$u=-0.428243-0.664531I$ $a=-0.082662+0.691670I$ $b=\ \ 1.60311+0.16418I$	$-2.71510+2.45488I$	$-11.76817-5.22487I$
$u=-0.428243-0.664531I$ $a=-0.381661-0.147894I$ $b=\ \ 1.201490-0.207665I$	$-2.71510-0.60627I$	$-11.76817+3.63642I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.073950+0.558752I$ $a=-0.838779+0.524858I$ $b=\ \ 0.199489+0.020974I$	$0.93776+10.09390I$	$-11.2557-9.0092I$
$u=-1.073950+0.558752I$ $a=\ \ 0.270775+0.632958I$ $b=-0.291023+0.542759I$	$0.93776+1.29219I$	$-11.25569-2.01198I$
$u=-1.073950+0.558752I$ $a=\ \ 0.407608-0.076665I$ $b=-0.295194-0.406019I$	$-2.53372+5.69302I$	$-14.5189-5.5106I$
$u=-1.073950+0.558752I$ $a=\ \ 1.69666+0.51052I$ $b=-1.09009+1.41396I$	$0.93776+1.29219I$	$-11.25569-2.01198I$
$u=-1.073950+0.558752I$ $a=\ \ 1.54997+0.93925I$ $b=-1.183430+0.080798I$	$-4.60570+7.22360I$	$-15.4849-9.9412I$
$u=-1.073950+0.558752I$ $a=\ \ 0.70760+1.71878I$ $b=-1.72104-0.78280I$	$-4.60570+4.16244I$	$-15.4849-1.0799I$
$u=-1.073950+0.558752I$ $a=-1.63758-1.34966I$ $b=\ \ 1.42021-0.22640I$	$-4.60570+4.16244I$	$-15.4849-1.0799I$
$u=-1.073950+0.558752I$ $a=-1.90882-1.13668I$ $b=\ \ 1.70635-1.05544I$	$-2.53372+5.69302I$	$-14.5189-5.5106I$
$u=-1.073950+0.558752I$ $a=-1.38410-1.92597I$ $b=\ \ 2.20254+0.18452I$	$-4.60570+7.22360I$	$-15.4849-9.9412I$
$u=-1.073950+0.558752I$ $a=\ \ 2.36946+1.15899I$ $b=-2.10666+1.42779I$	$0.93776+10.09390I$	$-11.2557-9.0092I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.073950-0.558752I$ $a=-0.838779-0.524858I$ $b=\ \ 0.199489-0.020974I$	$0.93776-10.09390I$	$-11.2557+9.0092I$
$u=-1.073950-0.558752I$ $a=\ \ 0.270775-0.632958I$ $b=-0.291023-0.542759I$	$0.93776-1.29219I$	$-11.25569+2.01198I$
$u=-1.073950-0.558752I$ $a=\ \ 0.407608+0.076665I$ $b=-0.295194+0.406019I$	$-2.53372-5.69302I$	$-14.5189+5.5106I$
$u=-1.073950-0.558752I$ $a=\ \ 1.69666-0.51052I$ $b=-1.09009-1.41396I$	$0.93776-1.29219I$	$-11.25569+2.01198I$
$u=-1.073950-0.558752I$ $a=\ \ 1.54997-0.93925I$ $b=-1.183430-0.080798I$	$-4.60570-7.22360I$	$-15.4849+9.9412I$
$u=-1.073950-0.558752I$ $a=\ \ 0.70760-1.71878I$ $b=-1.72104+0.78280I$	$-4.60570-4.16244I$	$-15.4849+1.0799I$
$u=-1.073950-0.558752I$ $a=-1.63758+1.34966I$ $b=\ \ 1.42021+0.22640I$	$-4.60570-4.16244I$	$-15.4849+1.0799I$
$u=-1.073950-0.558752I$ $a=-1.90882+1.13668I$ $b=\ \ 1.70635+1.05544I$	$-2.53372-5.69302I$	$-14.5189+5.5106I$
$u=-1.073950-0.558752I$ $a=-1.38410+1.92597I$ $b=\ \ 2.20254-0.18452I$	$-4.60570-7.22360I$	$-15.4849+9.9412I$
$u=-1.073950-0.558752I$ $a=\ \ 2.36946-1.15899I$ $b=-2.10666-1.42779I$	$0.93776-10.09390I$	$-11.2557+9.0092I$

III.

$\boldsymbol{I_3^u = \langle u^{18}-2u^{17}+\cdots+b-5,\ -5u^{18}+u^{17}+\cdots+a+5,\ u^{19}-6u^{17}+\cdots-3u-1\rangle}$

(i) Arc colorings

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

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

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

$$a_1 = \begin{pmatrix} u \\ -u^3+u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^3 \\ u^5-u^3+u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 5u^{18}-u^{17}+\cdots+4u-5 \\ -u^{18}+2u^{17}+\cdots+7u+5 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 6u^{18}-34u^{16}+\cdots+6u-4 \\ -u^{18}+u^{17}+\cdots+6u+4 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^{16}+u^{15}+\cdots-7u+2 \\ -u^{18}+6u^{16}+\cdots-u-1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^{18}+7u^{16}+\cdots-8u+1 \\ -u^{18}+6u^{16}+\cdots-u-1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -2u^{18}-u^{17}+\cdots-13u-5 \\ -u^{18}-u^{17}+\cdots-2u+1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 4u^{18}+3u^{17}+\cdots+17u+1 \\ 2u^{18}-10u^{16}+\cdots+u+1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 4u^{18}+3u^{17}+\cdots+17u+1 \\ 2u^{18}-10u^{16}+\cdots+u+1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$= 7u^{18}-8u^{17}-41u^{16}+52u^{15}+109u^{14}-159u^{13}-185u^{12}+301u^{11}+222u^{10}-378u^9-214u^8+340u^7+185u^6-221u^5-136u^4+106u^3+68u^2-25u-27$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{19} - 6u^{17} + \cdots - 3u + 1$
c_2	$u^{19} + 12u^{18} + \cdots + 15u + 1$
c_3, c_8	$u^{19} - u^{18} + \cdots - 7u^2 + 1$
c_4, c_{11}	$u^{19} - u^{18} + \cdots - 5u - 1$
c_5, c_9	$u^{19} + u^{18} + \cdots + 7u^2 - 1$
c_6	$u^{19} - 6u^{17} + \cdots - 3u - 1$
c_7	$u^{19} - 4u^{18} + \cdots - 2u + 1$
c_{10}	$u^{19} + 4u^{18} + \cdots - 2u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{19} - 12y^{18} + \cdots + 15y - 1$
c_2	$y^{19} - 16y^{17} + \cdots + 39y - 1$
c_3, c_5, c_8 c_9	$y^{19} - 19y^{18} + \cdots + 14y - 1$
c_4, c_{11}	$y^{19} - y^{18} + \cdots + 19y - 1$
c_7, c_{10}	$y^{19} + 8y^{18} + \cdots - 14y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.967261 + 0.354798I$ $a = -2.25280 + 0.77715I$ $b = 0.723993 + 1.182090I$	$-5.96459 - 0.14794I$	$-11.82997 + 4.86845I$
$u = 0.967261 - 0.354798I$ $a = -2.25280 - 0.77715I$ $b = 0.723993 - 1.182090I$	$-5.96459 + 0.14794I$	$-11.82997 - 4.86845I$
$u = 0.859964 + 0.270094I$ $a = 2.44861 - 0.38201I$ $b = -0.214129 - 0.865610I$	$-5.42770 - 2.49496I$	$-9.36645 + 5.70226I$
$u = 0.859964 - 0.270094I$ $a = 2.44861 + 0.38201I$ $b = -0.214129 + 0.865610I$	$-5.42770 + 2.49496I$	$-9.36645 - 5.70226I$
$u = 0.799111 + 0.756170I$ $a = -0.712718 - 0.194814I$ $b = -0.667283 + 0.538318I$	$2.87601 - 5.72258I$	$-9.05355 + 4.91542I$
$u = 0.799111 - 0.756170I$ $a = -0.712718 + 0.194814I$ $b = -0.667283 - 0.538318I$	$2.87601 + 5.72258I$	$-9.05355 - 4.91542I$
$u = -0.524497 + 0.661152I$ $a = -0.533158 - 0.064524I$ $b = 1.086980 - 0.067202I$	$-2.75709 - 1.00041I$	$-12.04366 + 0.13880I$
$u = -0.524497 - 0.661152I$ $a = -0.533158 + 0.064524I$ $b = 1.086980 + 0.067202I$	$-2.75709 + 1.00041I$	$-12.04366 - 0.13880I$
$u = -1.093670 + 0.388336I$ $a = 1.87002 + 1.21245I$ $b = -2.20612 - 0.26942I$	$-0.93178 + 6.58854I$	$-14.8946 - 10.5687I$
$u = -1.093670 - 0.388336I$ $a = 1.87002 - 1.21245I$ $b = -2.20612 + 0.26942I$	$-0.93178 - 6.58854I$	$-14.8946 + 10.5687I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.041770+0.569580I$ $a=-1.20132-1.51146I$ $b=\ \ 1.42965+0.24889I$	$-4.29805+5.80588I$	$-12.82283-4.90465I$
$u=-1.041770-0.569580I$ $a=-1.20132+1.51146I$ $b=\ \ 1.42965-0.24889I$	$-4.29805-5.80588I$	$-12.82283+4.90465I$
$u=-0.701288+0.304921I$ $a=\ \ 1.73597+0.54576I$ $b=-1.47018-0.11319I$	$0.58710-3.61548I$	$-7.77111+2.87703I$
$u=-0.701288-0.304921I$ $a=\ \ 1.73597-0.54576I$ $b=-1.47018+0.11319I$	$0.58710+3.61548I$	$-7.77111-2.87703I$
$u=\ \ 0.959396+0.782749I$ $a=\ \ 0.576822-0.442112I$ $b=-0.293446-0.948439I$	$2.39322-0.08960I$	$-4.76406-0.93292I$
$u=\ \ 0.959396-0.782749I$ $a=\ \ 0.576822+0.442112I$ $b=-0.293446+0.948439I$	$2.39322+0.08960I$	$-4.76406+0.93292I$
$u=\ \ 1.39483$ $a=-1.58672$ $b=\ \ 1.86590$	-9.09201	-15.7390
$u=-1.45435$ $a=-1.89251$ $b=\ \ 3.24994$	-7.18999	-56.9650
$u=-0.389498$ $a=-2.38361$ $b=\ \ 1.10524$	-2.73039	-14.2040

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^6+u^5-u^4-2u^3+u+1)^{10})(u^{19}-6u^{17}+\cdots-3u+1)$ $\cdot(u^{30}-11u^{29}+\cdots+192u-32)$
c_2	$((u^6+3u^5+5u^4+4u^3+2u^2+u+1)^{10})(u^{19}+12u^{18}+\cdots+15u+1)$ $\cdot(u^{30}+15u^{29}+\cdots+6656u+1024)$
c_3, c_8	$(u^{19}-u^{18}+\cdots-7u^2+1)(u^{30}+u^{29}+\cdots-4u-1)$ $\cdot(u^{60}+u^{59}+\cdots-5088u+1363)$
c_4, c_{11}	$(u^{19}-u^{18}+\cdots-5u-1)(u^{30}-u^{29}+\cdots+5u-1)$ $\cdot(u^{60}-5u^{59}+\cdots+122u+29)$
c_5, c_9	$(u^{19}+u^{18}+\cdots+7u^2-1)(u^{30}+u^{29}+\cdots-4u-1)$ $\cdot(u^{60}+u^{59}+\cdots-5088u+1363)$
c_6	$((u^6+u^5-u^4-2u^3+u+1)^{10})(u^{19}-6u^{17}+\cdots-3u-1)$ $\cdot(u^{30}-11u^{29}+\cdots+192u-32)$
c_7	$((u^5+u^4+2u^3+u^2+u+1)^{12})(u^{19}-4u^{18}+\cdots-2u+1)$ $\cdot(u^{30}-15u^{29}+\cdots-608u+64)$
c_{10}	$((u^5+u^4+2u^3+u^2+u+1)^{12})(u^{19}+4u^{18}+\cdots-2u-1)$ $\cdot(u^{30}-15u^{29}+\cdots-608u+64)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_6	$((y^6-3y^5+5y^4-4y^3+2y^2-y+1)^{10})(y^{19}-12y^{18}+\cdots+15y-1)$ $\cdot(y^{30}-15y^{29}+\cdots-6656y+1024)$
c_2	$((y^6+y^5+5y^4+6y^2+3y+1)^{10})(y^{19}-16y^{17}+\cdots+39y-1)$ $\cdot(y^{30}+y^{29}+\cdots-26607616y+1048576)$
c_3, c_5, c_8 c_9	$(y^{19}-19y^{18}+\cdots+14y-1)(y^{30}-19y^{29}+\cdots-10y+1)$ $\cdot(y^{60}-45y^{59}+\cdots-62677840y+1857769)$
c_4, c_{11}	$(y^{19}-y^{18}+\cdots+19y-1)(y^{30}+15y^{29}+\cdots-63y+1)$ $\cdot(y^{60}-9y^{59}+\cdots+41260y+841)$
c_7, c_{10}	$((y^5+3y^4+4y^3+y^2-y-1)^{12})(y^{19}+8y^{18}+\cdots-14y-1)$ $\cdot(y^{30}+11y^{29}+\cdots-54272y+4096)$