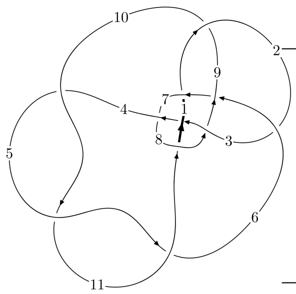
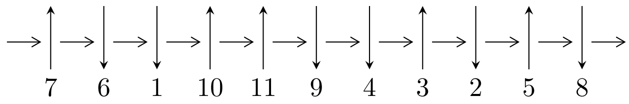
$11a_{351}$ ($K11a_{351}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 5u^{15} + 60u^{14} + \cdots + b + 130,\ 35u^{15} + 195u^{14} + \cdots + 19a - 844,\ u^{16} + 11u^{15} + \cdots + 85u + 19\rangle$$
$$I_2^u = \langle 4u^{11} + 38u^{10} + \cdots + b + 71,\ 3u^{11} - 4u^{10} + \cdots + 17a - 272,\ u^{12} + 10u^{11} + \cdots + 102u + 17\rangle$$
$$I_3^u = \langle -779024089a^9u - 1957109432a^8u + \cdots + 3952254721a + 13062915505,$$
$$2a^9u + 3a^8u + \cdots - 24a^2 - 5,\ u^2 - u + 1\rangle$$
$$I_4^u = \langle 10206521a^9u^3 + 21936282a^8u^3 + \cdots - 55249693a - 29498003,\ a^9u^3 - 7a^8u^3 + \cdots + 50a + 317,$$
$$u^4 - u^3 + 2u + 1\rangle$$
$$I_5^u = \langle 9901203u^{19} - 97655512u^{18} + \cdots + 451271189b - 2967898,$$
$$-6933305u^{19} + 80845633u^{18} + \cdots + 45127189a - 67619382,\ u^{20} - 9u^{19} + \cdots - 3u^2 + 1\rangle$$
$$I_6^u = \langle -a^4 - a^2 + b + a,\ a^5 + a^4 + 2a^3 + a^2 + a + 1,\ u - 1\rangle$$
$$I_7^u = \langle a^4 + a^2 + b,\ a^5 + a^4 + 2a^3 + a^2 + a + 1,\ u - 1\rangle$$
$$I_8^u = \langle b + 1,\ a,\ u - 1\rangle$$

$$I_1^v = \langle a,\ b^5 - b^4 + 2b^3 - b^2 + b - 1,\ v - 1\rangle$$

* 9 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 124 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. $\boldsymbol{I_1^u = \langle 5u^{15} + 60u^{14} + \cdots + b + 130,\ 35u^{15} + 195u^{14} + \cdots + 19a - 844,\ u^{16} + 11u^{15} + \cdots + 85u + 19\rangle}$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} -1.84211u^{15} - 10.2632u^{14} + \cdots + 138.789u + 44.4211 \\ -5u^{15} - 60u^{14} + \cdots - 496u - 130 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -6.84211u^{15} - 70.2632u^{14} + \cdots - 357.211u - 85.5789 \\ -5u^{15} - 60u^{14} + \cdots - 496u - 130 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.473684u^{15} + 4.21053u^{14} + \cdots - 2.63158u - 2.73684 \\ u^{15} + 10u^{14} + \cdots + 44u + 9 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 3.15789u^{15} + 20.7368u^{14} + \cdots - 156.211u - 50.5789 \\ 15u^{15} + 160u^{14} + \cdots + 929u + 231 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 12.1579u^{15} + 118.737u^{14} + \cdots + 457.789u + 104.421 \\ 21u^{14} + 180u^{13} + \cdots + 548u + 155 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.526316u^{15} - 4.78947u^{14} + \cdots - 12.6316u - 1.73684 \\ -u^{14} - 9u^{13} + \cdots - 32u - 10 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 2.57895u^{15} + 37.3684u^{14} + \cdots + 428.895u + 117.211 \\ -10u^{15} - 94u^{14} + \cdots - 302u - 65 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -1.63158u^{15} - 23.9474u^{14} + \cdots - 287.158u - 77.6842 \\ 7u^{15} + 71u^{14} + \cdots + 343u + 83 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -1.63158u^{15} - 23.9474u^{14} + \cdots - 287.158u - 77.6842 \\ 7u^{15} + 71u^{14} + \cdots + 343u + 83 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 20u^{15} + 204u^{14} + 914u^{13} + 2234u^{12} + 2754u^{11} - 94u^{10} - 6024u^9 - 9048u^8 - 3284u^7 + 8196u^6 + 15768u^5 + 14640u^4 + 8642u^3 + 3488u^2 + 1062u + 264$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^{16} + u^{15} + \cdots + 2u + 2$
c_2, c_7, c_9 c_{11}	$u^{16} + u^{15} + \cdots + u + 1$
c_3, c_6	$u^{16} - 11u^{15} + \cdots - 85u + 19$
c_4, c_5, c_{10}	$u^{16} + 6u^{15} + \cdots + 8u + 8$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^{16} + 9y^{15} + \cdots + 48y + 4$
c_2, c_7, c_9 c_{11}	$y^{16} + 7y^{15} + \cdots + 21y + 1$
c_3, c_6	$y^{16} - 11y^{15} + \cdots + 3795y + 361$
c_4, c_5, c_{10}	$y^{16} - 12y^{15} + \cdots + 160y + 64$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.380977 + 0.787211I$ $a = -1.029130 - 0.000584I$ $b = 0.393453 + 0.808033I$	$5.25768 - 4.77897I$	$4.31247 + 4.75614I$
$u = -0.380977 - 0.787211I$ $a = -1.029130 + 0.000584I$ $b = 0.393453 - 0.808033I$	$5.25768 + 4.77897I$	$4.31247 - 4.75614I$
$u = 1.279880 + 0.358721I$ $a = 0.170555 + 0.671225I$ $b = -0.052349 - 0.395411I$	$-2.56459 - 2.34570I$	$-6.28872 + 0.46963I$
$u = 1.279880 - 0.358721I$ $a = 0.170555 - 0.671225I$ $b = -0.052349 + 0.395411I$	$-2.56459 + 2.34570I$	$-6.28872 - 0.46963I$
$u = -1.22875 + 0.75885I$ $a = 0.284860 + 0.655547I$ $b = 0.403315 - 1.238380I$	$8.29097 + 6.33547I$	$5.46130 - 6.31546I$
$u = -1.22875 - 0.75885I$ $a = 0.284860 - 0.655547I$ $b = 0.403315 + 1.238380I$	$8.29097 - 6.33547I$	$5.46130 + 6.31546I$
$u = -1.16827 + 1.01352I$ $a = 0.104611 - 1.132590I$ $b = -1.20879 + 1.21269I$	$2.8802 + 18.5253I$	$0.82769 - 9.63606I$
$u = -1.16827 - 1.01352I$ $a = 0.104611 + 1.132590I$ $b = -1.20879 - 1.21269I$	$2.8802 - 18.5253I$	$0.82769 + 9.63606I$
$u = -1.54277 + 0.30640I$ $a = -0.064517 - 0.349095I$ $b = -0.120682 + 0.887722I$	$-0.76511 + 3.23091I$	$8.87467 - 5.88690I$
$u = -1.54277 - 0.30640I$ $a = -0.064517 + 0.349095I$ $b = -0.120682 - 0.887722I$	$-0.76511 - 3.23091I$	$8.87467 + 5.88690I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.20852 + 1.02268I$ $a = -0.121691 + 1.002120I$ $b = 1.08577 - 1.07970I$	$-2.9800 + 13.9622I$	$-2.59981 - 9.26713I$
$u = -1.20852 - 1.02268I$ $a = -0.121691 - 1.002120I$ $b = 1.08577 + 1.07970I$	$-2.9800 - 13.9622I$	$-2.59981 + 9.26713I$
$u = 0.035423 + 0.412947I$ $a = 1.80300 + 0.46760I$ $b = -0.145251 - 0.677138I$	$0.27480 - 1.44128I$	$1.93375 + 5.30960I$
$u = 0.035423 - 0.412947I$ $a = 1.80300 - 0.46760I$ $b = -0.145251 + 0.677138I$	$0.27480 + 1.44128I$	$1.93375 - 5.30960I$
$u = -1.28602 + 0.99596I$ $a = 0.062844 - 0.836469I$ $b = -0.855461 + 1.000990I$	$-1.34679 + 8.40080I$	$-0.52134 - 6.47139I$
$u = -1.28602 - 0.99596I$ $a = 0.062844 + 0.836469I$ $b = -0.855461 - 1.000990I$	$-1.34679 - 8.40080I$	$-0.52134 + 6.47139I$

II. $\boldsymbol{I_2^u = \langle 4u^{11} + 38u^{10} + \cdots + b + 71,\ 3u^{11} - 4u^{10} + \cdots + 17a - 272,\ u^{12} + 10u^{11} + \cdots + 102u + 17\rangle}$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} -0.176471u^{11} + 0.235294u^{10} + \cdots + 70.2353u + 16 \\ -4u^{11} - 38u^{10} + \cdots - 371u - 71 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -4.17647u^{11} - 37.7647u^{10} + \cdots - 300.765u - 55 \\ -4u^{11} - 38u^{10} + \cdots - 371u - 71 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -1.47059u^{11} - 12.7059u^{10} + \cdots - 80.7059u - 13 \\ -2u^{11} - 18u^{10} + \cdots - 136u - 25 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -2.17647u^{11} - 21.7647u^{10} + \cdots - 266.765u - 52 \\ u^{11} + 8u^{10} + \cdots + 3u - 3 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -8.17647u^{11} - 71.7647u^{10} + \cdots - 476.765u - 83 \\ -7u^{11} - 67u^{10} + \cdots - 714u - 139 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.529412u^{11} + 4.29412u^{10} + \cdots + 14.2941u + 3 \\ u^{10} + 8u^9 + \cdots + 43u + 9 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -1.76471u^{11} - 19.6471u^{10} + \cdots - 338.647u - 68 \\ 3u^{11} + 26u^{10} + \cdots + 136u + 21 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.0588235u^{11} + 2.41176u^{10} + \cdots + 156.412u + 35 \\ -4u^{11} - 36u^{10} + \cdots - 289u - 52 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.0588235u^{11} + 2.41176u^{10} + \cdots + 156.412u + 35 \\ -4u^{11} - 36u^{10} + \cdots - 289u - 52 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -15u^{11} - 131u^{10} - 625u^9 - 1949u^8 - 4347u^7 - 7138u^6 - 8765u^5 - 8007u^4 - 5383u^3 - 2560u^2 - 816u - 127$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$(u^6 - u^4 + u^3 + u^2 - 1)^2$
c_2, c_7, c_9 c_{11}	$u^{12} + u^{10} - u^9 + 8u^8 + u^7 + 8u^6 - 8u^5 + 4u^4 + u^3 + 4u^2 - 3u + 1$
c_3, c_6	$u^{12} - 10u^{11} + \cdots - 102u + 17$
c_4, c_5, c_{10}	$(u^6 + 3u^5 + 2u^4 + u^2 - 2u - 4)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$(y^6 - 2y^5 + 3y^4 - 5y^3 + 3y^2 - 2y + 1)^2$
c_2, c_7, c_9 c_{11}	$y^{12} + 2y^{11} + \cdots - y + 1$
c_3, c_6	$y^{12} + 6y^{11} + \cdots + 918y + 289$
c_4, c_5, c_{10}	$(y^6 - 5y^5 + 6y^4 + 8y^3 - 15y^2 - 12y + 16)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.014560 + 0.523445I$ $a = -0.208887 - 0.713790I$ $b = -1.14261 + 1.15043I$	$-1.71358 + 4.97819I$	$0.7768 - 21.8821I$
$u = -1.014560 - 0.523445I$ $a = -0.208887 + 0.713790I$ $b = -1.14261 - 1.15043I$	$-1.71358 - 4.97819I$	$0.7768 + 21.8821I$
$u = -0.681059 + 0.947774I$ $a = -0.626037 - 0.871204I$ $b = -0.399338 + 1.186680I$	10.0009	$7.28456 + 0.I$
$u = -0.681059 - 0.947774I$ $a = -0.626037 + 0.871204I$ $b = -0.399338 - 1.186680I$	10.0009	$7.28456 + 0.I$
$u = -1.011620 + 0.702683I$ $a = 0.146588 + 0.944898I$ $b = 1.19430 - 1.17568I$	$3.78738 + 10.11610I$	$0.74000 - 10.55076I$
$u = -1.011620 - 0.702683I$ $a = 0.146588 - 0.944898I$ $b = 1.19430 + 1.17568I$	$3.78738 - 10.11610I$	$0.74000 + 10.55076I$
$u = -0.216157 + 0.620958I$ $a = 0.399338 + 1.147190I$ $b = 0.626037 - 0.495944I$	2.30081	$4.68187 + 0.I$
$u = -0.216157 - 0.620958I$ $a = 0.399338 - 1.147190I$ $b = 0.626037 + 0.495944I$	2.30081	$4.68187 + 0.I$
$u = -1.02353 + 1.42273I$ $a = 0.665667 + 0.092024I$ $b = -0.608739 - 0.560847I$	$3.78738 - 10.11610I$	$0.74000 + 10.55076I$
$u = -1.02353 - 1.42273I$ $a = 0.665667 - 0.092024I$ $b = -0.608739 + 0.560847I$	$3.78738 + 10.11610I$	$0.74000 - 10.55076I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.05308+1.90895I$ $a=-0.376670-0.098951I$ $b=\quad 0.330356+0.297557I$	$-1.71358-4.97819I$	$0.7768+21.8821I$
$u=-1.05308-1.90895I$ $a=-0.376670+0.098951I$ $b=\quad 0.330356-0.297557I$	$-1.71358+4.97819I$	$0.7768-21.8821I$

III. $\boldsymbol{I_3^u = \langle -7.79 \times 10^8 a^9 u - 1.96 \times 10^9 a^8 u + \cdots + 3.95 \times 10^9 a + 1.31 \times 10^{10},\ 2a^9 u + 3a^8 u + \cdots - 24a^2 - 5,\ u^2 - u + 1 \rangle}$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} a \\ 0.0624042a^9u + 0.156775a^8u + \cdots - 0.316598a - 1.04641 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 0.0624042a^9u + 0.156775a^8u + \cdots + 0.683402a - 1.04641 \\ 0.0624042a^9u + 0.156775a^8u + \cdots - 0.316598a - 1.04641 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.125388a^9u - 0.0120961a^8u + \cdots - 1.79526a - 0.515904 \\ 0.234099a^9u - 0.232380a^8u + \cdots - 1.93225a - 0.405863 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.0155084a^9u - 0.125977a^8u + \cdots - 0.624139a + 1.47218 \\ 0.0310168a^9u + 0.251955a^8u + \cdots + 1.24828a - 2.94436 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.0624042a^9u + 0.156775a^8u + \cdots + 1.68340a - 1.04641 \\ -0.0624042a^9u - 0.156775a^8u + \cdots - 0.683402a + 1.04641 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -a^2u \\ -0.108711a^9u + 0.220284a^8u + \cdots + 0.136985a - 0.110041 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.0627102a^9u - 0.0703413a^8u + \cdots + 0.570348a + 1.12072 \\ -0.182654a^9u + 0.0102801a^8u + \cdots - 4.10199a - 0.770574 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.197356a^9u - 0.278756a^8u + \cdots + 2.01543a + 0.720538 \\ 0.0883103a^9u - 0.662405a^8u + \cdots - 3.40104a + 1.50629 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.197356a^9u - 0.278756a^8u + \cdots + 2.01543a + 0.720538 \\ 0.0883103a^9u - 0.662405a^8u + \cdots - 3.40104a + 1.50629 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -\frac{20810162524}{12483517597}a^9u + \frac{12117017480}{12483517597}a^8u + \cdots - \frac{108344247808}{12483517597}a + \frac{6755523522}{12483517597}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^{20} + 3u^{19} + \cdots - 12u + 61$
c_2, c_7, c_9 c_{11}	$u^{20} + u^{19} + \cdots - 6u + 1$
c_3, c_6	$(u^2 + u + 1)^{10}$
c_4, c_5, c_{10}	$(u^5 - u^4 - 2u^3 + u^2 + u + 1)^4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^{20} - 13y^{19} + \cdots + 17912y + 3721$
c_2, c_7, c_9 c_{11}	$y^{20} - y^{19} + \cdots + 8y + 1$
c_3, c_6	$(y^2 + y + 1)^{10}$
c_4, c_5, c_{10}	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.500000 + 0.866025I$ $a = -0.448982 - 0.894591I$ $b = 1.33834 + 0.88084I$	$0.32910 - 5.59035I$	$2.51511 + 11.35885I$
$u = 0.500000 + 0.866025I$ $a = -0.301250 - 0.932572I$ $b = 0.50256 + 1.40555I$	$5.87256 + 0.34107I$	$6.74431 + 3.42962I$
$u = 0.500000 + 0.866025I$ $a = 0.972249 - 0.372860I$ $b = 0.175892 + 0.206047I$	$0.32910 - 2.52919I$	$2.51511 + 2.49755I$
$u = 0.500000 + 0.866025I$ $a = 0.452147 + 0.960216I$ $b = -0.718535 - 0.910912I$	$0.32910 - 2.52919I$	$2.51511 + 2.49755I$
$u = 0.500000 + 0.866025I$ $a = 0.550143 + 0.975912I$ $b = -1.57593 - 1.21167I$	$5.87256 - 8.46060I$	$6.74431 + 10.42679I$
$u = 0.500000 + 0.866025I$ $a = 0.232340 + 0.431805I$ $b = -1.256950 - 0.014690I$	$2.40108 - 4.05977I$	$3.48114 + 6.92820I$
$u = 0.500000 + 0.866025I$ $a = -0.97541 + 1.48195I$ $b = -0.456587 - 0.763331I$	$0.32910 - 5.59035I$	$2.51511 + 11.35885I$
$u = 0.500000 + 0.866025I$ $a = -0.23234 - 1.75999I$ $b = 0.873537 + 0.678780I$	$2.40108 - 4.05977I$	$3.48114 + 6.92820I$
$u = 0.500000 + 0.866025I$ $a = -1.77747 + 0.14328I$ $b = 0.308955 - 0.410827I$	$5.87256 + 0.34107I$	$6.74431 + 3.42962I$
$u = 0.500000 + 0.866025I$ $a = 1.52858 - 1.76520I$ $b = 0.308723 + 1.006240I$	$5.87256 - 8.46060I$	$6.74431 + 10.42679I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=0.500000-0.866025I$ $a=-0.448982+0.894591I$ $b=1.33834-0.88084I$	$0.32910+5.59035I$	$2.51511-11.35885I$
$u=0.500000-0.866025I$ $a=-0.301250+0.932572I$ $b=0.50256-1.40555I$	$5.87256-0.34107I$	$6.74431-3.42962I$
$u=0.500000-0.866025I$ $a=0.972249+0.372860I$ $b=0.175892-0.206047I$	$0.32910+2.52919I$	$2.51511-2.49755I$
$u=0.500000-0.866025I$ $a=0.452147-0.960216I$ $b=-0.718535+0.910912I$	$0.32910+2.52919I$	$2.51511-2.49755I$
$u=0.500000-0.866025I$ $a=0.550143-0.975912I$ $b=-1.57593+1.21167I$	$5.87256+8.46060I$	$6.74431-10.42679I$
$u=0.500000-0.866025I$ $a=0.232340-0.431805I$ $b=-1.256950+0.014690I$	$2.40108+4.05977I$	$3.48114-6.92820I$
$u=0.500000-0.866025I$ $a=-0.97541-1.48195I$ $b=-0.456587+0.763331I$	$0.32910+5.59035I$	$2.51511-11.35885I$
$u=0.500000-0.866025I$ $a=-0.23234+1.75999I$ $b=0.873537-0.678780I$	$2.40108+4.05977I$	$3.48114-6.92820I$
$u=0.500000-0.866025I$ $a=-1.77747-0.14328I$ $b=0.308955+0.410827I$	$5.87256-0.34107I$	$6.74431-3.42962I$
$u=0.500000-0.866025I$ $a=1.52858+1.76520I$ $b=0.308723-1.006240I$	$5.87256+8.46060I$	$6.74431-10.42679I$

IV. $\boldsymbol{I_4^u = \langle 1.02 \times 10^7 a^9 u^3 + 2.19 \times 10^7 a^8 u^3 + \cdots - 5.52 \times 10^7 a - 2.95 \times 10^7,\ a^9 u^3 - 7a^8 u^3 + \cdots + 50a + 317,\ u^4 - u^3 + 2u + 1\rangle}$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} a \\ -0.771383a^9u^3 - 1.65789a^8u^3 + \cdots + 4.17563a + 2.22938 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.771383a^9u^3 - 1.65789a^8u^3 + \cdots + 5.17563a + 2.22938 \\ -0.771383a^9u^3 - 1.65789a^8u^3 + \cdots + 4.17563a + 2.22938 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -2.38899a^9u^3 - 1.48429a^8u^3 + \cdots + 0.191963a + 0.432924 \\ -3.26466a^9u^3 - 1.33077a^8u^3 + \cdots + 0.127827a - 1.90249 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -3.45130a^9u^3 - 1.73595a^8u^3 + \cdots + 3.15566a - 1.38448 \\ 5.95147a^9u^3 + 8.73616a^8u^3 + \cdots + 4.17563a + 1.71700 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -1.85369a^9u^3 - 0.341548a^8u^3 + \cdots - 3.58272a + 4.48596 \\ 3.94220a^9u^3 + 3.86768a^8u^3 + \cdots - 3.42705a + 5.69058 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -a^2u \\ 0.875666a^9u^3 - 0.153515a^8u^3 + \cdots + 0.0641357a + 2.33541 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -5.23127a^9u^3 - 4.21557a^8u^3 + \cdots + 1.83391a - 0.272488 \\ 2.39529a^9u^3 + 2.70451a^8u^3 + \cdots - 0.144882a + 1.16474 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -7.86359a^9u^3 - 7.45546a^8u^3 + \cdots - 2.31526a + 3.05851 \\ -1.07236a^9u^3 - 0.0986639a^8u^3 + \cdots - 0.769606a + 0.360690 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -7.86359a^9u^3 - 7.45546a^8u^3 + \cdots - 2.31526a + 3.05851 \\ -1.07236a^9u^3 - 0.0986639a^8u^3 + \cdots - 0.769606a + 0.360690 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{99852548}{4410487}a^9u^3 + \frac{71190288}{4410487}a^8u^3 + \cdots - \frac{4811112}{4410487}a - \frac{25276838}{4410487}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$(u^{20} - u^{19} + \cdots - 40u + 7)^2$
c_2, c_7, c_9 c_{11}	$u^{40} - u^{39} + \cdots - 24u + 1$
c_3, c_6	$(u^4 + u^3 - 2u + 1)^{10}$
c_4, c_5, c_{10}	$(u^5 - u^4 - 2u^3 + u^2 + u + 1)^8$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$(y^{20} + 15y^{19} + \cdots + 136y + 49)^2$
c_2, c_7, c_9 c_{11}	$y^{40} - 19y^{39} + \cdots - 140y + 1$
c_3, c_6	$(y^4 - y^3 + 6y^2 - 4y + 1)^{10}$
c_4, c_5, c_{10}	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)^8$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.621964+0.187730I$ $a=-0.719862+1.116280I$ $b=-1.058220-0.214730I$	$-2.96077+2.52919I$	$-9.48489-2.49755I$
$u=-0.621964+0.187730I$ $a=0.590718+1.260270I$ $b=-1.91701-1.41092I$	$2.58269+8.46060I$	$-5.25569-10.42679I$
$u=-0.621964+0.187730I$ $a=-0.21396-1.42839I$ $b=1.27174+1.23977I$	$-2.96077+5.59035I$	$-9.4849-11.3589I$
$u=-0.621964+0.187730I$ $a=0.277604+0.458266I$ $b=1.68999-0.50252I$	$2.58269-0.34107I$	$-5.25569-3.42962I$
$u=-0.621964+0.187730I$ $a=1.49834+0.40807I$ $b=1.215460-0.396898I$	$2.58269-0.34107I$	$-5.25569-3.42962I$
$u=-0.621964+0.187730I$ $a=-0.52719-1.68162I$ $b=-0.936656+0.894531I$	$-2.96077+2.52919I$	$-9.48489-2.49755I$
$u=-0.621964+0.187730I$ $a=0.13210+1.90315I$ $b=0.01117-1.83111I$	$-0.88879+4.05977I$	$-8.51886-6.92820I$
$u=-0.621964+0.187730I$ $a=0.70008+2.70840I$ $b=0.622489-0.315887I$	$-2.96077+5.59035I$	$-9.4849-11.3589I$
$u=-0.621964+0.187730I$ $a=0.72825-2.71120I$ $b=0.1026320+0.0179107I$	$-0.88879+4.05977I$	$-8.51886-6.92820I$
$u=-0.621964+0.187730I$ $a=-1.34411-3.08700I$ $b=-0.853187+0.155291I$	$2.58269+8.46060I$	$-5.25569-10.42679I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.621964-0.187730I$ $a=-0.719862-1.116280I$ $b=-1.058220+0.214730I$	$-2.96077-2.52919I$	$-9.48489+2.49755I$
$u=-0.621964-0.187730I$ $a=\ \ 0.590718-1.260270I$ $b=-1.91701+1.41092I$	$2.58269-8.46060I$	$-5.25569+10.42679I$
$u=-0.621964-0.187730I$ $a=-0.21396+1.42839I$ $b=\ \ 1.27174-1.23977I$	$-2.96077-5.59035I$	$-9.4849+11.3589I$
$u=-0.621964-0.187730I$ $a=\ \ 0.277604-0.458266I$ $b=\ \ 1.68999+0.50252I$	$2.58269+0.34107I$	$-5.25569+3.42962I$
$u=-0.621964-0.187730I$ $a=\ \ 1.49834-0.40807I$ $b=\ \ 1.215460+0.396898I$	$2.58269+0.34107I$	$-5.25569+3.42962I$
$u=-0.621964-0.187730I$ $a=-0.52719+1.68162I$ $b=-0.936656-0.894531I$	$-2.96077-2.52919I$	$-9.48489+2.49755I$
$u=-0.621964-0.187730I$ $a=\ \ 0.13210-1.90315I$ $b=\ \ 0.01117+1.83111I$	$-0.88879-4.05977I$	$-8.51886+6.92820I$
$u=-0.621964-0.187730I$ $a=\ \ 0.70008-2.70840I$ $b=\ \ 0.622489+0.315887I$	$-2.96077-5.59035I$	$-9.4849+11.3589I$
$u=-0.621964-0.187730I$ $a=\ \ 0.72825+2.71120I$ $b=\ \ 0.1026320-0.0179107I$	$-0.88879-4.05977I$	$-8.51886+6.92820I$
$u=-0.621964-0.187730I$ $a=-1.34411+3.08700I$ $b=-0.853187-0.155291I$	$2.58269-8.46060I$	$-5.25569+10.42679I$

Solutions to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.12196 + 1.05376I$ $a = 0.243796 + 1.155300I$ $b = -1.015060 - 0.944107I$	$-2.96077 - 5.59035I$	$-9.4849 + 11.3589I$
$u = 1.12196 + 1.05376I$ $a = -0.784279 - 0.888215I$ $b = 1.50413 + 0.48312I$	$-0.88879 - 4.05977I$	$-8.51886 + 6.92820I$
$u = 1.12196 + 1.05376I$ $a = 0.307340 + 0.744258I$ $b = -1.234520 - 0.304051I$	$-0.88879 - 4.05977I$	$-8.51886 + 6.92820I$
$u = 1.12196 + 1.05376I$ $a = -0.116394 - 0.734680I$ $b = 0.654122 + 0.391067I$	$-2.96077 - 2.52919I$	$-9.48489 + 2.49755I$
$u = 1.12196 + 1.05376I$ $a = -0.489819 + 0.435548I$ $b = 0.382798 - 0.494752I$	$2.58269 + 0.34107I$	$-5.25569 + 3.42962I$
$u = 1.12196 + 1.05376I$ $a = -0.187266 - 0.580148I$ $b = 1.087870 + 0.575772I$	$-2.96077 - 5.59035I$	$-9.4849 + 11.3589I$
$u = 1.12196 + 1.05376I$ $a = 0.013279 + 0.587324I$ $b = -1.046510 - 0.808228I$	$2.58269 - 8.46060I$	$-5.25569 + 10.42679I$
$u = 1.12196 + 1.05376I$ $a = -0.07140 - 1.41932I$ $b = 0.92646 + 1.33661I$	$2.58269 - 8.46060I$	$-5.25569 + 10.42679I$
$u = 1.12196 + 1.05376I$ $a = 0.481693 + 0.286853I$ $b = -0.965395 - 0.181113I$	$-2.96077 - 2.52919I$	$-9.48489 + 2.49755I$
$u = 1.12196 + 1.05376I$ $a = -0.018914 + 0.225356I$ $b = 0.057687 + 0.179198I$	$2.58269 + 0.34107I$	$-5.25569 + 3.42962I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.12196 - 1.05376I$ $a = 0.243796 - 1.155300I$ $b = -1.015060 + 0.944107I$	$-2.96077 + 5.59035I$	$-9.4849 - 11.3589I$
$u = 1.12196 - 1.05376I$ $a = -0.784279 + 0.888215I$ $b = 1.50413 - 0.48312I$	$-0.88879 + 4.05977I$	$-8.51886 - 6.92820I$
$u = 1.12196 - 1.05376I$ $a = 0.307340 - 0.744258I$ $b = -1.234520 + 0.304051I$	$-0.88879 + 4.05977I$	$-8.51886 - 6.92820I$
$u = 1.12196 - 1.05376I$ $a = -0.116394 + 0.734680I$ $b = 0.654122 - 0.391067I$	$-2.96077 + 2.52919I$	$-9.48489 - 2.49755I$
$u = 1.12196 - 1.05376I$ $a = -0.489819 - 0.435548I$ $b = 0.382798 + 0.494752I$	$2.58269 - 0.34107I$	$-5.25569 - 3.42962I$
$u = 1.12196 - 1.05376I$ $a = -0.187266 + 0.580148I$ $b = 1.087870 - 0.575772I$	$-2.96077 + 5.59035I$	$-9.4849 - 11.3589I$
$u = 1.12196 - 1.05376I$ $a = 0.013279 - 0.587324I$ $b = -1.046510 + 0.808228I$	$2.58269 + 8.46060I$	$-5.25569 - 10.42679I$
$u = 1.12196 - 1.05376I$ $a = -0.07140 + 1.41932I$ $b = 0.92646 - 1.33661I$	$2.58269 + 8.46060I$	$-5.25569 - 10.42679I$
$u = 1.12196 - 1.05376I$ $a = 0.481693 - 0.286853I$ $b = -0.965395 + 0.181113I$	$-2.96077 + 2.52919I$	$-9.48489 - 2.49755I$
$u = 1.12196 - 1.05376I$ $a = -0.018914 - 0.225356I$ $b = 0.057687 - 0.179198I$	$2.58269 - 0.34107I$	$-5.25569 - 3.42962I$

V.
$\boldsymbol{I_5^u = \langle 9.90 \times 10^6 u^{19} - 9.77 \times 10^7 u^{18} + \cdots + 4.51 \times 10^7 b - 2.97 \times 10^6,\ -6.93 \times 10^6 u^{19} + 8.08 \times 10^7 u^{18} + \cdots + 4.51 \times 10^7 a - 6.76 \times 10^7,\ u^{20} - 9u^{19} + \cdots - 3u^2 + 1 \rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.153639u^{19} - 1.79151u^{18} + \cdots + 2.24516u + 1.49842 \\ -0.219407u^{19} + 2.16401u^{18} + \cdots + 1.56419u + 0.0657674 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.0657674u^{19} + 0.372500u^{18} + \cdots + 3.80934u + 1.56419 \\ -0.219407u^{19} + 2.16401u^{18} + \cdots + 1.56419u + 0.0657674 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.862994u^{19} + 7.09186u^{18} + \cdots + 1.03984u - 0.290444 \\ -0.675088u^{19} + 5.31678u^{18} + \cdots + 0.709556u + 0.862994 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.342986u^{19} - 3.06182u^{18} + \cdots + 2.31093u + 1.71782 \\ 0.107949u^{19} - 0.626322u^{18} + \cdots + 1.15543u - 0.178694 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -3.20937u^{19} + 27.2035u^{18} + \cdots + 5.85762u + 1.67985 \\ -1.35831u^{19} + 11.4178u^{18} + \cdots + 3.23433u + 2.85186 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.271837u^{19} + 2.92517u^{18} + \cdots + 2.48372u - 1.34134 \\ 0.0839308u^{19} - 1.15008u^{18} + \cdots - 0.153439u + 0.187906 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.119355u^{19} - 1.14339u^{18} + \cdots - 3.89881u + 3.26977 \\ 0.0404788u^{19} + 0.0678868u^{18} + \cdots + 1.91295u + 0.197670 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -1.66613u^{19} + 15.1247u^{18} + \cdots + 8.18078u - 2.09281 \\ 0.0199111u^{19} - 0.114853u^{18} + \cdots - 0.736002u + 1.34910 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -1.66613u^{19} + 15.1247u^{18} + \cdots + 8.18078u - 2.09281 \\ 0.0199111u^{19} - 0.114853u^{18} + \cdots - 0.736002u + 1.34910 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{566889690}{45127189}u^{19} + \frac{4768864478}{45127189}u^{18} + \cdots + \frac{1705220671}{45127189}u + \frac{1179786730}{45127189}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^{20} + 5u^{18} + \cdots - 14u^2 + 5$
c_2, c_9	$u^{20} + 3u^{19} + \cdots + 5u + 1$
c_3	$u^{20} + 9u^{19} + \cdots - 3u^2 + 1$
c_4, c_5, c_{10}	$u^{20} - 11u^{18} + \cdots - 26u^2 + 5$
c_6	$u^{20} - 9u^{19} + \cdots - 3u^2 + 1$
c_7, c_{11}	$u^{20} - 3u^{19} + \cdots - 5u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$(y^{10}+5y^9+12y^8+22y^7+39y^6+39y^5+16y^4-3y^3-y^2-14y+5)^2$
c_2, c_7, c_9 c_{11}	$y^{20}-9y^{19}+\cdots+y+1$
c_3, c_6	$y^{20}-3y^{19}+\cdots-6y+1$
c_4, c_5, c_{10}	$(y^{10}-11y^9+\cdots-26y+5)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_5	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.821430 + 0.174947I$ $a = -0.09635 - 1.43572I$ $b = 0.118953 + 0.649652I$	$-2.73306 + 4.26272I$	$-8.25212 - 5.64920I$
$u = -0.821430 - 0.174947I$ $a = -0.09635 + 1.43572I$ $b = 0.118953 - 0.649652I$	$-2.73306 - 4.26272I$	$-8.25212 + 5.64920I$
$u = 0.973474 + 0.672727I$ $a = -0.120474 + 0.775350I$ $b = -1.037340 - 0.908780I$	$-1.82255 - 4.54196I$	$-4.29864 + 3.11401I$
$u = 0.973474 - 0.672727I$ $a = -0.120474 - 0.775350I$ $b = -1.037340 + 0.908780I$	$-1.82255 + 4.54196I$	$-4.29864 - 3.11401I$
$u = -0.490238 + 1.134900I$ $a = -0.705233 - 0.258301I$ $b = 0.489256 - 0.079506I$	$-1.82255 - 4.54196I$	$-4.29864 + 3.11401I$
$u = -0.490238 - 1.134900I$ $a = -0.705233 + 0.258301I$ $b = 0.489256 + 0.079506I$	$-1.82255 + 4.54196I$	$-4.29864 - 3.11401I$
$u = 0.947805 + 0.931675I$ $a = 0.117417 - 1.009620I$ $b = 0.96989 + 1.07473I$	$3.55383 - 7.96405I$	$2.92507 + 6.02428I$
$u = 0.947805 - 0.931675I$ $a = 0.117417 + 1.009620I$ $b = 0.96989 - 1.07473I$	$3.55383 + 7.96405I$	$2.92507 - 6.02428I$
$u = 0.624760 + 0.114740I$ $a = 1.015600 - 0.186789I$ $b = 1.59870 + 0.48840I$	$2.89253 + 0.54689I$	$18.6210 - 11.9306I$
$u = 0.624760 - 0.114740I$ $a = 1.015600 + 0.186789I$ $b = 1.59870 - 0.48840I$	$2.89253 - 0.54689I$	$18.6210 + 11.9306I$

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.05532+1.04300I$ $a = -0.530965-0.863445I$ $b = 1.38342+0.39958I$	$-0.24582-3.85817I$	$5.50469+2.33081I$
$u = 1.05532-1.04300I$ $a = -0.530965+0.863445I$ $b = 1.38342-0.39958I$	$-0.24582+3.85817I$	$5.50469-2.33081I$
$u = -0.116259+0.447931I$ $a = 2.34373+1.74010I$ $b = -1.074080+0.328248I$	$3.55383-7.96405I$	$2.92507+6.02428I$
$u = -0.116259-0.447931I$ $a = 2.34373-1.74010I$ $b = -1.074080-0.328248I$	$3.55383+7.96405I$	$2.92507-6.02428I$
$u = -0.404943+0.173477I$ $a = -0.59962+3.36092I$ $b = -0.111711-1.056540I$	$-0.24582+3.85817I$	$5.50469-2.33081I$
$u = -0.404943-0.173477I$ $a = -0.59962-3.36092I$ $b = -0.111711+1.056540I$	$-0.24582-3.85817I$	$5.50469+2.33081I$
$u = 1.19409+1.04649I$ $a = 0.326099+0.687739I$ $b = -1.017300-0.504325I$	$-2.73306-4.26272I$	$-8.25212+5.64920I$
$u = 1.19409-1.04649I$ $a = 0.326099-0.687739I$ $b = -1.017300+0.504325I$	$-2.73306+4.26272I$	$-8.25212-5.64920I$
$u = 1.53742+1.29075I$ $a = -0.250200+0.210167I$ $b = 0.180215-0.433147I$	$2.89253+0.54689I$	$18.6210-11.9306I$
$u = 1.53742-1.29075I$ $a = -0.250200-0.210167I$ $b = 0.180215+0.433147I$	$2.89253-0.54689I$	$18.6210+11.9306I$

VI. $I^u_6 = \langle -a^4 - a^2 + b + a,\ a^5 + a^4 + 2a^3 + a^2 + a + 1,\ u - 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4a^3 + 4a^2 + 4a - 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^5 - u^4 + 2u^3 - u^2 + u - 1$
c_2, c_7	$u^5 + u^4 - u^3 - 4u^2 - 3u - 1$
c_3, c_6	$(u+1)^5$
c_4, c_5, c_{10}	$u^5 - u^4 - 2u^3 + u^2 + u + 1$
c_9, c_{11}	$u^5 - 2u^4 + 3u^3 + u^2 - 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^5 + 3y^4 + 4y^3 + y^2 - y - 1$
c_2, c_7	$y^5 - 3y^4 + 3y^3 - 8y^2 + y - 1$
c_3, c_6	$(y-1)^5$
c_4, c_5, c_{10}	$y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1$
c_9, c_{11}	$y^5 + 2y^4 + 7y^3 - 15y^2 + 7y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = 0.339110 + 0.822375I$ $b = -0.896438 - 0.890762I$	$-2.96077 - 1.53058I$	$-9.48489 + 4.43065I$
$u = 1.00000$ $a = 0.339110 - 0.822375I$ $b = -0.896438 + 0.890762I$	$-2.96077 + 1.53058I$	$-9.48489 - 4.43065I$
$u = 1.00000$ $a = -0.766826$ $b = 1.70062$	-0.888787	-8.51890
$u = 1.00000$ $a = -0.455697 + 1.200150I$ $b = -0.453870 + 0.402731I$	$2.58269 + 4.40083I$	$-5.25569 - 3.49859I$
$u = 1.00000$ $a = -0.455697 - 1.200150I$ $b = -0.453870 - 0.402731I$	$2.58269 - 4.40083I$	$-5.25569 + 3.49859I$

VII. $\boldsymbol{I^u_7 = \langle a^4 + a^2 + b,\ a^5 + a^4 + 2a^3 + a^2 + a + 1,\ u - 1\rangle}$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} a \\ -a^4 - a^2 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -a^4 - a^2 + a \\ -a^4 - a^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -a^4 - a^3 - 3a^2 - a - 2 \\ -a^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -a^4 - a^2 + 2a \\ -a^4 - a^2 + a \end{pmatrix}$$

$$a_4 = \begin{pmatrix} a^4 + a^2 - a \\ -a \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -a^2 \\ -a^4 - a^3 - a^2 - a \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -a^4 - a^2 + 2a - 1 \\ a^3 + a \end{pmatrix}$$

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

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4a^3 + 4a^2 + 4a - 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^5 - u^4 + 2u^3 - u^2 + u - 1$
c_2, c_7	$u^5 - 2u^4 + 3u^3 + u^2 - 3u + 1$
c_3, c_6	$(u+1)^5$
c_4, c_5, c_{10}	$u^5 - u^4 - 2u^3 + u^2 + u + 1$
c_9, c_{11}	$u^5 + u^4 - u^3 - 4u^2 - 3u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^5 + 3y^4 + 4y^3 + y^2 - y - 1$
c_2, c_7	$y^5 + 2y^4 + 7y^3 - 15y^2 + 7y - 1$
c_3, c_6	$(y-1)^5$
c_4, c_5, c_{10}	$y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1$
c_9, c_{11}	$y^5 - 3y^4 + 3y^3 - 8y^2 + y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_7^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = 0.339110 + 0.822375I$ $b = 0.557328 + 0.068387I$	$-2.96077 - 1.53058I$	$-9.48489 + 4.43065I$
$u = 1.00000$ $a = 0.339110 - 0.822375I$ $b = 0.557328 - 0.068387I$	$-2.96077 + 1.53058I$	$-9.48489 - 4.43065I$
$u = 1.00000$ $a = -0.766826$ $b = -0.933791$	-0.888787	-8.51890
$u = 1.00000$ $a = -0.455697 + 1.200150I$ $b = 0.90957 - 1.60288I$	$2.58269 + 4.40083I$	$-5.25569 - 3.49859I$
$u = 1.00000$ $a = -0.455697 - 1.200150I$ $b = 0.90957 + 1.60288I$	$2.58269 - 4.40083I$	$-5.25569 + 3.49859I$

VIII. $I_8^u = \langle b+1,\ a,\ u-1 \rangle$

(i) Arc colorings

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

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

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

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

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

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

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

$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$

$a_8 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$

$a_{11} = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5 c_8, c_{10}	u
c_2, c_6, c_9	$u - 1$
c_3, c_7, c_{11}	$u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_8, c_{10}	y
c_2, c_3, c_6 c_7, c_9, c_{11}	$y-1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_8^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = 0$ $b = -1.00000$	-3.28987	-12.0000

IX. $\boldsymbol{I_1^v = \langle a,\ b^5 - b^4 + 2b^3 - b^2 + b - 1,\ v - 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4b^3 + 4b^2 - 4b + 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_7 c_8, c_9, c_{11}	$u^5 - u^4 + 2u^3 - u^2 + u - 1$
c_3, c_6	u^5
c_4, c_5, c_{10}	$u^5 + u^4 - 2u^3 - u^2 + u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_7 c_8, c_9, c_{11}	$y^5 + 3y^4 + 4y^3 + y^2 - y - 1$
c_3, c_6	y^5
c_4, c_5, c_{10}	$y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 1.00000$ $a = 0$ $b = -0.339110 + 0.822375I$	$0.32910 + 1.53058I$	$2.51511 - 4.43065I$
$v = 1.00000$ $a = 0$ $b = -0.339110 - 0.822375I$	$0.32910 - 1.53058I$	$2.51511 + 4.43065I$
$v = 1.00000$ $a = 0$ $b = 0.766826$	2.40108	3.48110
$v = 1.00000$ $a = 0$ $b = 0.455697 + 1.200150I$	$5.87256 - 4.40083I$	$6.74431 + 3.49859I$
$v = 1.00000$ $a = 0$ $b = 0.455697 - 1.200150I$	$5.87256 + 4.40083I$	$6.74431 - 3.49859I$

X. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_8	$u(u^5-u^4+2u^3-u^2+u-1)^3(u^6-u^4+u^3+u^2-1)^2$ $\cdot(u^{16}+u^{15}+\cdots+2u+2)(u^{20}+5u^{18}+\cdots-14u^2+5)$ $\cdot((u^{20}-u^{19}+\cdots-40u+7)^2)(u^{20}+3u^{19}+\cdots-12u+61)$
c_2, c_9	$(u-1)(u^5-2u^4+3u^3+u^2-3u+1)(u^5-u^4+2u^3-u^2+u-1)$ $\cdot(u^5+u^4-u^3-4u^2-3u-1)$ $\cdot(u^{12}+u^{10}-u^9+8u^8+u^7+8u^6-8u^5+4u^4+u^3+4u^2-3u+1)$ $\cdot(u^{16}+u^{15}+\cdots+u+1)(u^{20}+u^{19}+\cdots-6u+1)$ $\cdot(u^{20}+3u^{19}+\cdots+5u+1)(u^{40}-u^{39}+\cdots-24u+1)$
c_3	$u^5(u+1)^{11}(u^2+u+1)^{10}(u^4+u^3-2u+1)^{10}$ $\cdot(u^{12}-10u^{11}+\cdots-102u+17)(u^{16}-11u^{15}+\cdots-85u+19)$ $\cdot(u^{20}+9u^{19}+\cdots-3u^2+1)$
c_4, c_5, c_{10}	$u(u^5-u^4-2u^3+u^2+u+1)^{14}(u^5+u^4-2u^3-u^2+u-1)$ $\cdot((u^6+3u^5+2u^4+u^2-2u-4)^2)(u^{16}+6u^{15}+\cdots+8u+8)$ $\cdot(u^{20}-11u^{18}+\cdots-26u^2+5)$
c_6	$u^5(u-1)(u+1)^{10}(u^2+u+1)^{10}(u^4+u^3-2u+1)^{10}$ $\cdot(u^{12}-10u^{11}+\cdots-102u+17)(u^{16}-11u^{15}+\cdots-85u+19)$ $\cdot(u^{20}-9u^{19}+\cdots-3u^2+1)$
c_7, c_{11}	$(u+1)(u^5-2u^4+3u^3+u^2-3u+1)(u^5-u^4+2u^3-u^2+u-1)$ $\cdot(u^5+u^4-u^3-4u^2-3u-1)$ $\cdot(u^{12}+u^{10}-u^9+8u^8+u^7+8u^6-8u^5+4u^4+u^3+4u^2-3u+1)$ $\cdot(u^{16}+u^{15}+\cdots+u+1)(u^{20}-3u^{19}+\cdots-5u+1)$ $\cdot(u^{20}+u^{19}+\cdots-6u+1)(u^{40}-u^{39}+\cdots-24u+1)$

XI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y(y^5+3y^4+4y^3+y^2-y-1)^3$ $\cdot(y^6-2y^5+3y^4-5y^3+3y^2-2y+1)^2$ $\cdot(y^{10}+5y^9+12y^8+22y^7+39y^6+39y^5+16y^4-3y^3-y^2-14y+5)^2$ $\cdot(y^{16}+9y^{15}+\cdots+48y+4)(y^{20}-13y^{19}+\cdots+17912y+3721)$ $\cdot(y^{20}+15y^{19}+\cdots+136y+49)^2$
c_2, c_7, c_9 c_{11}	$(y-1)(y^5-3y^4+\cdots+y-1)(y^5+2y^4+\cdots+7y-1)$ $\cdot(y^5+3y^4+4y^3+y^2-y-1)(y^{12}+2y^{11}+\cdots-y+1)$ $\cdot(y^{16}+7y^{15}+\cdots+21y+1)(y^{20}-9y^{19}+\cdots+y+1)$ $\cdot(y^{20}-y^{19}+\cdots+8y+1)(y^{40}-19y^{39}+\cdots-140y+1)$
c_3, c_6	$y^5(y-1)^{11}(y^2+y+1)^{10}(y^4-y^3+6y^2-4y+1)^{10}$ $\cdot(y^{12}+6y^{11}+\cdots+918y+289)(y^{16}-11y^{15}+\cdots+3795y+361)$ $\cdot(y^{20}-3y^{19}+\cdots-6y+1)$
c_4, c_5, c_{10}	$y(y^5-5y^4+8y^3-3y^2-y-1)^{15}$ $\cdot(y^6-5y^5+6y^4+8y^3-15y^2-12y+16)^2$ $\cdot((y^{10}-11y^9+\cdots-26y+5)^2)(y^{16}-12y^{15}+\cdots+160y+64)$