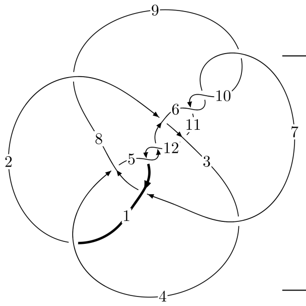
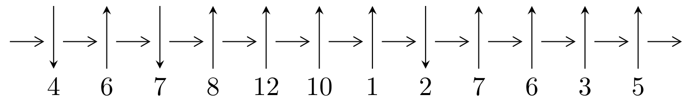
$12n_{0746}$ ($K12n_{0746}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$2{,}6 \xrightarrow[c_2]{} 3{,}10 \xrightarrow[c_6]{} 7 \xrightarrow[c_3]{} 4 \xrightarrow[c_{10}]{} 11 \xrightarrow[c_{11}]{} 12 \xrightarrow[c_1]{} 1 \xrightarrow[c_5]{} 5 \xrightarrow[c_9]{} 9 \xrightarrow[c_8]{} 8 \twoheadrightarrow c_4, c_7, c_{12}$$

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

$$\begin{aligned}
I_1^u &= \langle b-u,\ -1.83924\times10^{21}u^{27}+7.51768\times10^{21}u^{26}+\cdots+3.02460\times10^{21}a-9.01849\times10^{21},\\
&\quad u^{28}-2u^{27}+\cdots-2u+1\rangle\\
I_2^u &= \langle -4.38637\times10^{21}u^{23}-6.05223\times10^{21}u^{22}+\cdots+9.74526\times10^{20}b+2.66742\times10^{23},\\
&\quad -1.58823\times10^{23}u^{23}-2.15936\times10^{23}u^{22}+\cdots+2.24141\times10^{22}a+9.91766\times10^{24},\\
&\quad u^{24}+u^{23}+\cdots-230u+23\rangle\\
I_3^u &= \langle b+u,\ -99658301453u^{19}+22815726133u^{18}+\cdots+73658938123a-286826314291,\\
&\quad u^{20}-u^{19}+\cdots-2u+1\rangle\\
I_4^u &= \langle -3.66729\times10^{26}u^{23}+3.10786\times10^{26}u^{22}+\cdots+9.53312\times10^{27}b-4.94358\times10^{28},\\
&\quad -7.82120\times10^{27}u^{23}+8.56311\times10^{27}u^{22}+\cdots+4.09924\times10^{29}a-2.28465\times10^{30},\\
&\quad u^{24}-8u^{22}+\cdots+242u+43\rangle\\
I_5^u &= \langle b-u,\ a,\ u^3+u^2-1\rangle
\end{aligned}$$

* 5 irreducible components of $\dim_{\mathbb{C}}=0$, with total 99 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. $\boldsymbol{I_1^u = \langle b - u,\ -1.84 \times 10^{21} u^{27} + 7.52 \times 10^{21} u^{26} + \cdots + 3.02 \times 10^{21} a - 9.02 \times 10^{21},\ u^{28} - 2u^{27} + \cdots - 2u + 1\rangle}$

(i) Arc colorings

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

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

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

$$a_{10} = \begin{pmatrix} 0.608092u^{27} - 2.48551u^{26} + \cdots - 16.5137u + 2.98171 \\ u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 3.02147u^{27} - 5.56752u^{26} + \cdots - 8.71227u - 7.54372 \\ 0.146622u^{27} - 0.672339u^{26} + \cdots - 2.14675u + 1.26933 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1.25423u^{27} - 2.25494u^{26} + \cdots + 7.72816u + 4.89956 \\ -0.309280u^{27} + 0.794974u^{26} + \cdots + 1.07232u - 0.906326 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.608092u^{27} - 2.48551u^{26} + \cdots - 16.5137u + 2.98171 \\ -0.146622u^{27} + 0.672339u^{26} + \cdots + 4.14675u - 1.26933 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.608092u^{27} - 2.48551u^{26} + \cdots - 15.5137u + 2.98171 \\ -0.146622u^{27} + 0.672339u^{26} + \cdots + 4.14675u - 1.26933 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 2.64646u^{27} - 4.80020u^{26} + \cdots + 5.40118u - 0.731153 \\ -0.452414u^{27} + 1.16215u^{26} + \cdots + 1.92755u - 0.493859 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -3.31472u^{27} + 6.91219u^{26} + \cdots + 15.0058u + 5.00506 \\ -0.0676430u^{27} + 0.0431589u^{26} + \cdots + 0.266521u - 0.986574 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 2.27197u^{27} - 3.48515u^{26} + \cdots + 13.3274u - 0.442136 \\ 0.317299u^{27} - 0.919860u^{26} + \cdots - 4.21736u + 0.793896 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 2.58927u^{27} - 4.40501u^{26} + \cdots + 9.11008u + 0.351760 \\ 0.317299u^{27} - 0.919860u^{26} + \cdots - 4.21736u + 0.793896 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{582961495882437832970}{302459896815748685959 3}u^{27} - \frac{758431219737986585697 9}{302459896815748685959 3}u^{26} + \cdots - \frac{487173836779323307533 72}{302459896815748685959 3}u + \frac{537127210573353597686 30}{302459896815748685959 3}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{28} - 21u^{27} + \cdots - 1076u + 85$
c_2, c_{11}	$u^{28} - 2u^{27} + \cdots - 2u + 1$
c_3, c_8	$u^{28} + u^{26} + \cdots + 5u + 1$
c_4, c_7	$u^{28} - u^{27} + \cdots - u + 1$
c_5, c_{12}	$u^{28} - 16u^{27} + \cdots - 3584u + 256$
c_6, c_9, c_{10}	$u^{28} + 14u^{27} + \cdots + 388u + 85$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{28} + 5y^{27} + \cdots + 88494y + 7225$
c_2, c_{11}	$y^{28} - 30y^{27} + \cdots - 14y + 1$
c_3, c_8	$y^{28} + 2y^{27} + \cdots - y + 1$
c_4, c_7	$y^{28} + 5y^{27} + \cdots + y + 1$
c_5, c_{12}	$y^{28} + 24y^{27} + \cdots - 65536y + 65536$
c_6, c_9, c_{10}	$y^{28} + 14y^{27} + \cdots - 10634y + 7225$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.086820 + 0.335626I$ $a = 0.377913 + 0.742585I$ $b = -1.086820 + 0.335626I$	$-2.65449 - 3.26122I$	$2.78730 + 2.85719I$
$u = -1.086820 - 0.335626I$ $a = 0.377913 - 0.742585I$ $b = -1.086820 - 0.335626I$	$-2.65449 + 3.26122I$	$2.78730 - 2.85719I$
$u = 1.291560 + 0.285093I$ $a = -0.764348 + 0.803904I$ $b = 1.291560 + 0.285093I$	$-1.20504 + 9.37586I$	$5.06931 - 5.78305I$
$u = 1.291560 - 0.285093I$ $a = -0.764348 - 0.803904I$ $b = 1.291560 - 0.285093I$	$-1.20504 - 9.37586I$	$5.06931 + 5.78305I$
$u = -0.521856 + 0.406646I$ $a = -1.15897 + 1.81439I$ $b = -0.521856 + 0.406646I$	$-8.79310 - 0.90672I$	$1.94268 + 8.40913I$
$u = -0.521856 - 0.406646I$ $a = -1.15897 - 1.81439I$ $b = -0.521856 - 0.406646I$	$-8.79310 + 0.90672I$	$1.94268 - 8.40913I$
$u = 1.361260 + 0.077580I$ $a = -0.583212 - 0.841707I$ $b = 1.361260 + 0.077580I$	$2.74957 + 4.57356I$	$4.51737 - 9.50673I$
$u = 1.361260 - 0.077580I$ $a = -0.583212 + 0.841707I$ $b = 1.361260 - 0.077580I$	$2.74957 - 4.57356I$	$4.51737 + 9.50673I$
$u = -1.43638 + 0.07970I$ $a = 0.790538 - 0.457604I$ $b = -1.43638 + 0.07970I$	$5.39731 + 4.50866I$	$8.58445 - 4.27811I$
$u = -1.43638 - 0.07970I$ $a = 0.790538 + 0.457604I$ $b = -1.43638 - 0.07970I$	$5.39731 - 4.50866I$	$8.58445 + 4.27811I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.537196+0.036679I$ $a=-0.23574+1.76134I$ $b=-0.537196+0.036679I$	$-2.45068-2.83732I$	$4.31985+3.27002I$
$u=-0.537196-0.036679I$ $a=-0.23574-1.76134I$ $b=-0.537196-0.036679I$	$-2.45068+2.83732I$	$4.31985-3.27002I$
$u=-0.071489+0.529570I$ $a=\quad 1.14088-0.95443I$ $b=-0.071489+0.529570I$	$-0.26010+1.93004I$	$3.61653-5.71528I$
$u=-0.071489-0.529570I$ $a=\quad 1.14088+0.95443I$ $b=-0.071489-0.529570I$	$-0.26010-1.93004I$	$3.61653+5.71528I$
$u=\quad 1.43308+0.34927I$ $a=-0.591407-0.524106I$ $b=\quad 1.43308+0.34927I$	$1.87639+2.56909I$	$-2.67930+1.43996I$
$u=\quad 1.43308-0.34927I$ $a=-0.591407+0.524106I$ $b=\quad 1.43308-0.34927I$	$1.87639-2.56909I$	$-2.67930-1.43996I$
$u=\quad 0.282745+0.391125I$ $a=\quad 0.483464-0.962937I$ $b=\quad 0.282745+0.391125I$	$1.155910+0.293260I$	$10.43664-2.43272I$
$u=\quad 0.282745-0.391125I$ $a=\quad 0.483464+0.962937I$ $b=\quad 0.282745-0.391125I$	$1.155910-0.293260I$	$10.43664+2.43272I$
$u=\quad 1.42876+0.51566I$ $a=-0.703819-0.195243I$ $b=\quad 1.42876+0.51566I$	$4.50289+1.59330I$	$8.77713+1.98299I$
$u=\quad 1.42876-0.51566I$ $a=-0.703819+0.195243I$ $b=\quad 1.42876-0.51566I$	$4.50289-1.59330I$	$8.77713-1.98299I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.50305 + 0.53936I$ $a = 0.767624 - 0.498981I$ $b = -1.50305 + 0.53936I$	$3.99815 - 11.69660I$	$6.00000 + 8.56335I$
$u = -1.50305 - 0.53936I$ $a = 0.767624 + 0.498981I$ $b = -1.50305 - 0.53936I$	$3.99815 + 11.69660I$	$6.00000 - 8.56335I$
$u = 0.308666 + 0.171864I$ $a = -2.41196 - 4.47005I$ $b = 0.308666 + 0.171864I$	$-11.73900 - 4.61344I$	$11.46925 - 5.36985I$
$u = 0.308666 - 0.171864I$ $a = -2.41196 + 4.47005I$ $b = 0.308666 - 0.171864I$	$-11.73900 + 4.61344I$	$11.46925 + 5.36985I$
$u = -1.43159 + 0.87843I$ $a = 0.704219 - 0.264488I$ $b = -1.43159 + 0.87843I$	$-3.41771 - 8.95629I$	$0. + 7.40222I$
$u = -1.43159 - 0.87843I$ $a = 0.704219 + 0.264488I$ $b = -1.43159 - 0.87843I$	$-3.41771 + 8.95629I$	$0. - 7.40222I$
$u = 1.48231 + 0.90624I$ $a = -0.815172 - 0.278277I$ $b = 1.48231 + 0.90624I$	$-2.3195 + 17.0944I$	$6.00000 - 8.92147I$
$u = 1.48231 - 0.90624I$ $a = -0.815172 + 0.278277I$ $b = 1.48231 - 0.90624I$	$-2.3195 - 17.0944I$	$6.00000 + 8.92147I$

II. $\boldsymbol{I_2^u = \langle -4.39 \times 10^{21}u^{23} - 6.05 \times 10^{21}u^{22} + \cdots + 9.75 \times 10^{20}b + 2.67 \times 10^{23},\ -1.59 \times 10^{23}u^{23} - 2.16 \times 10^{23}u^{22} + \cdots + 2.24 \times 10^{22}a + 9.92 \times 10^{24},\ u^{24} + u^{23} + \cdots - 230u + 23\rangle}$

(i) Arc colorings

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

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

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

$$a_{10} = \begin{pmatrix} 7.08586u^{23} + 9.63395u^{22} + \cdots + 3246.32u - 442.474 \\ 4.50103u^{23} + 6.21044u^{22} + \cdots + 2010.44u - 273.715 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -6.11064u^{23} - 8.32729u^{22} + \cdots - 2798.51u + 378.851 \\ -0.415380u^{23} - 0.860716u^{22} + \cdots + 46.1813u - 25.3055 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 3.27955u^{23} + 4.32985u^{22} + \cdots + 1628.19u - 235.525 \\ 5.50322u^{23} + 7.44656u^{22} + \cdots + 2558.40u - 349.287 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 7.08586u^{23} + 9.63395u^{22} + \cdots + 3246.32u - 442.474 \\ 3.60153u^{23} + 5.01071u^{22} + \cdots + 1587.36u - 215.109 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 11.5869u^{23} + 15.8444u^{22} + \cdots + 5256.76u - 716.189 \\ 2.94846u^{23} + 4.11075u^{22} + \cdots + 1297.72u - 175.792 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -8.69992u^{23} - 11.2039u^{22} + \cdots - 4497.49u + 658.430 \\ -10.2679u^{23} - 13.8814u^{22} + \cdots - 4772.27u + 653.807 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 2.84349u^{23} + 4.59701u^{22} + \cdots + 726.192u - 47.7595 \\ -4.55216u^{23} - 5.85791u^{22} + \cdots - 2364.05u + 346.117 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 9.11922u^{23} + 12.4058u^{22} + \cdots + 4166.18u - 565.621 \\ 3.66715u^{23} + 5.27000u^{22} + \cdots + 1460.26u - 183.205 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 12.7864u^{23} + 17.6758u^{22} + \cdots + 5626.44u - 748.827 \\ 3.66715u^{23} + 5.27000u^{22} + \cdots + 1460.26u - 183.205 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{5311543016724665509336}{885932371301452532 75}u^{23} + \frac{7107141086263947951916}{8859323713014525327 5}u^{22} + \cdots + \frac{5061450165495418198 76372}{17718647426029050655}u - \frac{3518744466348714555 26646}{8859323713014525327 5}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^4+u^3+u^2-u+1)^6$
c_2, c_{11}	$u^{24}+u^{23}+\cdots-230u+23$
c_3, c_8	$u^{24}-2u^{23}+\cdots+222u+59$
c_4, c_7	$u^{24}-u^{23}+\cdots+30u+25$
c_5, c_{12}	$(u^3+u^2+2u+1)^8$
c_6, c_9, c_{10}	$(u^4-u^3+u^2+u+1)^6$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6, c_9 c_{10}	$(y^4 + y^3 + 5y^2 + y + 1)^6$
c_2, c_{11}	$y^{24} - 5y^{23} + \cdots - 17894y + 529$
c_3, c_8	$y^{24} - 4y^{23} + \cdots + 71902y + 3481$
c_4, c_7	$y^{24} + 7y^{23} + \cdots + 8450y + 625$
c_5, c_{12}	$(y^3 + 3y^2 + 2y - 1)^8$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.871397 + 0.215536I$ $a = 0.70645 - 1.47436I$ $b = -1.288690 + 0.118319I$	$-0.78305 - 1.85791I$	$3.78084 + 7.29993I$
$u = 0.871397 - 0.215536I$ $a = 0.70645 + 1.47436I$ $b = -1.288690 - 0.118319I$	$-0.78305 + 1.85791I$	$3.78084 - 7.29993I$
$u = -0.481220 + 1.117750I$ $a = 0.537698 + 0.156233I$ $b = -1.45439 + 0.43085I$	$-5.26521 - 1.85791I$	$1.19965 + 7.29993I$
$u = -0.481220 - 1.117750I$ $a = 0.537698 - 0.156233I$ $b = -1.45439 - 0.43085I$	$-5.26521 + 1.85791I$	$1.19965 - 7.29993I$
$u = -1.259050 + 0.270524I$ $a = -0.893362 + 0.707527I$ $b = 1.32599 - 0.61457I$	$3.35454 - 4.68603I$	$10.3101 + 10.2794I$
$u = -1.259050 - 0.270524I$ $a = -0.893362 - 0.707527I$ $b = 1.32599 + 0.61457I$	$3.35454 + 4.68603I$	$10.3101 - 10.2794I$
$u = -1.288690 + 0.118319I$ $a = -0.798244 + 0.805500I$ $b = 0.871397 + 0.215536I$	$-0.78305 - 1.85791I$	$3.78084 + 7.29993I$
$u = -1.288690 - 0.118319I$ $a = -0.798244 - 0.805500I$ $b = 0.871397 - 0.215536I$	$-0.78305 + 1.85791I$	$3.78084 - 7.29993I$
$u = 1.32599 + 0.61457I$ $a = 0.905290 + 0.434484I$ $b = -1.259050 - 0.270524I$	$3.35454 + 4.68603I$	$10.3101 - 10.2794I$
$u = 1.32599 - 0.61457I$ $a = 0.905290 - 0.434484I$ $b = -1.259050 + 0.270524I$	$3.35454 - 4.68603I$	$10.3101 + 10.2794I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.03872+1.51471I$ $a=-0.339611+0.294797I$ $b=\ \ 0.349222+0.081162I$	$-1.12763+4.68603I$	$7.72892-10.27938I$
$u=-0.03872-1.51471I$ $a=-0.339611-0.294797I$ $b=\ \ 0.349222-0.081162I$	$-1.12763-4.68603I$	$7.72892+10.27938I$
$u=-1.45439+0.43085I$ $a=\ \ 0.372404-0.251224I$ $b=-0.481220+1.117750I$	$-5.26521-1.85791I$	$1.19965+7.29993I$
$u=-1.45439-0.43085I$ $a=\ \ 0.372404+0.251224I$ $b=-0.481220-1.117750I$	$-5.26521+1.85791I$	$1.19965-7.29993I$
$u=\ \ 1.49772+0.63712I$ $a=\ \ 0.800074+0.415791I$ $b=-1.23605-1.10308I$	$-0.78305+7.51416I$	$3.78084-13.25883I$
$u=\ \ 1.49772-0.63712I$ $a=\ \ 0.800074-0.415791I$ $b=-1.23605+1.10308I$	$-0.78305-7.51416I$	$3.78084+13.25883I$
$u=\ \ 0.349222+0.081162I$ $a=-1.50940-1.15491I$ $b=-0.03872+1.51471I$	$-1.12763+4.68603I$	$7.72892-10.27938I$
$u=\ \ 0.349222-0.081162I$ $a=-1.50940+1.15491I$ $b=-0.03872-1.51471I$	$-1.12763-4.68603I$	$7.72892+10.27938I$
$u=\ \ 0.352036+0.040102I$ $a=-1.04733+1.61298I$ $b=\ \ 0.86175+2.12125I$	$-5.26521-7.51416I$	$1.19965+13.25883I$
$u=\ \ 0.352036-0.040102I$ $a=-1.04733-1.61298I$ $b=\ \ 0.86175-2.12125I$	$-5.26521+7.51416I$	$1.19965-13.25883I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.23605+1.10308I$ $a=-0.875509+0.134887I$ $b=\ 1.49772-0.63712I$	$-0.78305-7.51416I$	$3.78084+13.25883I$
$u=-1.23605-1.10308I$ $a=-0.875509-0.134887I$ $b=\ 1.49772+0.63712I$	$-0.78305+7.51416I$	$3.78084-13.25883I$
$u=\ 0.86175+2.12125I$ $a=\ 0.141530+0.261800I$ $b=\ 0.352036+0.040102I$	$-5.26521-7.51416I$	0
$u=\ 0.86175-2.12125I$ $a=\ 0.141530-0.261800I$ $b=\ 0.352036-0.040102I$	$-5.26521+7.51416I$	0

III. $\boldsymbol{I_3^u = \langle b+u,\ -9.97\times 10^{10}u^{19} + 2.28\times 10^{10}u^{18} + \cdots + 7.37\times 10^{10}a - 2.87\times 10^{11},\ u^{20} - u^{19} + \cdots - 2u + 1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1.35297u^{19} - 0.309748u^{18} + \cdots + 5.01927u + 3.89398 \\ -u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 3.05617u^{19} - 3.31440u^{18} + \cdots + 26.4727u - 6.68081 \\ 0.0448430u^{19} + 0.229731u^{18} + \cdots + 0.266527u + 1.04322 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 3.73189u^{19} - 2.90830u^{18} + \cdots + 22.5207u + 2.75146 \\ -0.0798962u^{19} + 0.122919u^{18} + \cdots - 1.56402u + 0.709081 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1.35297u^{19} - 0.309748u^{18} + \cdots + 5.01927u + 3.89398 \\ 0.0448430u^{19} + 0.229731u^{18} + \cdots - 1.73347u + 1.04322 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1.35297u^{19} - 0.309748u^{18} + \cdots + 4.01927u + 3.89398 \\ 0.0448430u^{19} + 0.229731u^{18} + \cdots - 1.73347u + 1.04322 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -2.24854u^{19} + 0.516651u^{18} + \cdots - 4.37312u - 7.02363 \\ -0.0516704u^{19} - 0.300485u^{18} + \cdots + 2.04578u - 0.397752 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -3.14585u^{19} + 2.85493u^{18} + \cdots - 25.0058u + 4.59437 \\ -0.124739u^{19} - 0.106813u^{18} + \cdots - 0.830543u - 1.33414 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -2.83500u^{19} + 1.12947u^{18} + \cdots - 12.5781u - 7.07266 \\ 0.266234u^{19} - 0.515357u^{18} + \cdots + 3.30610u - 1.30145 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -2.56877u^{19} + 0.614111u^{18} + \cdots - 9.27198u - 8.37411 \\ 0.266234u^{19} - 0.515357u^{18} + \cdots + 3.30610u - 1.30145 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= -\frac{456675119914}{73658938123}u^{19} + \frac{414145420365}{73658938123}u^{18} + \cdots - \frac{3019589803806}{73658938123}u - \frac{62318108709}{73658938123}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{20} - 8u^{19} + \cdots + 3u^2 + 1$
c_2, c_{11}	$u^{20} - u^{19} + \cdots - 2u + 1$
c_3, c_8	$u^{20} + u^{19} + \cdots + 3u + 13$
c_4, c_7	$u^{20} + 4u^{18} + \cdots - u + 1$
c_5	$u^{20} + 12u^{18} + \cdots - u + 3$
c_6	$u^{20} + 7u^{19} + \cdots + 7u^2 + 1$
c_9, c_{10}	$u^{20} - 7u^{19} + \cdots + 7u^2 + 1$
c_{12}	$u^{20} + 12u^{18} + \cdots + u + 3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{20} + 4y^{19} + \cdots + 6y + 1$
c_2, c_{11}	$y^{20} - 7y^{19} + \cdots + 14y + 1$
c_3, c_8	$y^{20} + y^{19} + \cdots - 425y + 169$
c_4, c_7	$y^{20} + 8y^{19} + \cdots + 5y + 1$
c_5, c_{12}	$y^{20} + 24y^{19} + \cdots + 5y + 9$
c_6, c_9, c_{10}	$y^{20} + 13y^{19} + \cdots + 14y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.206860 + 0.912738I$ $a = 0.595089 + 0.399266I$ $b = -0.206860 - 0.912738I$	$-1.87110 - 4.11491I$	$-1.55747 + 5.09443I$
$u = 0.206860 - 0.912738I$ $a = 0.595089 - 0.399266I$ $b = -0.206860 + 0.912738I$	$-1.87110 + 4.11491I$	$-1.55747 - 5.09443I$
$u = 1.146640 + 0.158956I$ $a = 0.833442 - 0.963122I$ $b = -1.146640 - 0.158956I$	$-0.308612 - 0.887866I$	$7.01392 + 0.89869I$
$u = 1.146640 - 0.158956I$ $a = 0.833442 + 0.963122I$ $b = -1.146640 + 0.158956I$	$-0.308612 + 0.887866I$	$7.01392 - 0.89869I$
$u = -0.764508 + 1.012020I$ $a = -0.039227 + 0.271965I$ $b = 0.764508 - 1.012020I$	$-5.47737 + 6.62738I$	$-0.42430 - 3.51997I$
$u = -0.764508 - 1.012020I$ $a = -0.039227 - 0.271965I$ $b = 0.764508 + 1.012020I$	$-5.47737 - 6.62738I$	$-0.42430 + 3.51997I$
$u = -0.331623 + 0.638727I$ $a = -1.26938 + 0.62846I$ $b = 0.331623 - 0.638727I$	$-3.79735 - 3.38074I$	$-3.18735 + 5.13211I$
$u = -0.331623 - 0.638727I$ $a = -1.26938 - 0.62846I$ $b = 0.331623 + 0.638727I$	$-3.79735 + 3.38074I$	$-3.18735 - 5.13211I$
$u = 0.411689 + 0.583746I$ $a = -1.48118 - 1.12864I$ $b = -0.411689 - 0.583746I$	$-9.13088 + 0.23260I$	$-5.20121 + 0.99282I$
$u = 0.411689 - 0.583746I$ $a = -1.48118 + 1.12864I$ $b = -0.411689 + 0.583746I$	$-9.13088 - 0.23260I$	$-5.20121 - 0.99282I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.277620+0.235723I$ $a=-0.755026+0.731922I$ $b=\ \ 1.277620-0.235723I$	$2.53448-3.53693I$	$4.49394+2.65444I$
$u=-1.277620-0.235723I$ $a=-0.755026-0.731922I$ $b=\ \ 1.277620+0.235723I$	$2.53448+3.53693I$	$4.49394-2.65444I$
$u=\ \ 0.896773+0.960875I$ $a=\ \ 0.339283+0.184359I$ $b=-0.896773-0.960875I$	$-5.79310+1.03199I$	$-4.20712-0.39355I$
$u=\ \ 0.896773-0.960875I$ $a=\ \ 0.339283-0.184359I$ $b=-0.896773+0.960875I$	$-5.79310-1.03199I$	$-4.20712+0.39355I$
$u=-1.259400+0.425629I$ $a=-0.881755+0.330751I$ $b=\ \ 1.259400-0.425629I$	$3.54204-2.99255I$	$6.08654+3.89052I$
$u=-1.259400-0.425629I$ $a=-0.881755-0.330751I$ $b=\ \ 1.259400+0.425629I$	$3.54204+2.99255I$	$6.08654-3.89052I$
$u=\ \ 0.095406+0.374240I$ $a=\ \ 4.30822+1.24073I$ $b=-0.095406-0.374240I$	$-11.97380+4.82580I$	$-7.61339-11.34574I$
$u=\ \ 0.095406-0.374240I$ $a=\ \ 4.30822-1.24073I$ $b=-0.095406+0.374240I$	$-11.97380-4.82580I$	$-7.61339+11.34574I$
$u=\ \ 1.37578+0.84536I$ $a=\ \ 0.850537+0.232509I$ $b=-1.37578-0.84536I$	$-0.62299+6.60843I$	$4.59643-3.39212I$
$u=\ \ 1.37578-0.84536I$ $a=\ \ 0.850537-0.232509I$ $b=-1.37578+0.84536I$	$-0.62299-6.60843I$	$4.59643+3.39212I$

IV. $\boldsymbol{I^u_4 = \langle -3.67 \times 10^{26}u^{23} + 3.11 \times 10^{26}u^{22} + \cdots + 9.53 \times 10^{27}b - 4.94 \times 10^{28},\ -7.82 \times 10^{27}u^{23} + 8.56 \times 10^{27}u^{22} + \cdots + 4.10 \times 10^{29}a - 2.28 \times 10^{30},\ u^{24} - 8u^{22} + \cdots + 242u + 43\rangle}$

(i) Arc colorings

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

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

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

$$a_{10} = \begin{pmatrix} 0.0190796u^{23} - 0.0208895u^{22} + \cdots + 23.9335u + 5.57336 \\ 0.0384689u^{23} - 0.0326006u^{22} + \cdots + 20.6673u + 5.18569 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.0308549u^{23} - 0.0309852u^{22} + \cdots + 13.1028u + 4.24203 \\ 0.00630508u^{23} + 0.0121205u^{22} + \cdots - 4.93815u + 0.374359 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.00429981u^{23} + 0.00889826u^{22} + \cdots + 1.52545u + 4.03528 \\ 0.0208895u^{23} + 0.0219619u^{22} + \cdots - 0.956087u + 1.82042 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.0190796u^{23} - 0.0208895u^{22} + \cdots + 23.9335u + 5.57336 \\ 0.0604308u^{23} - 0.0273914u^{22} + \cdots + 16.4324u + 4.28744 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.0575485u^{23} - 0.0534901u^{22} + \cdots + 44.6007u + 10.7591 \\ 0.0568322u^{23} - 0.00741976u^{22} + \cdots + 10.1972u + 2.88562 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.0301588u^{23} + 0.0179193u^{22} + \cdots - 26.1094u - 9.14299 \\ -0.0107939u^{23} - 0.00843626u^{22} + \cdots - 9.79673u - 3.96761 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.00413390u^{23} - 0.0355708u^{22} + \cdots + 10.5611u - 4.01184 \\ -0.0204326u^{23} - 0.0402020u^{22} + \cdots + 10.2954u - 0.924994 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.0534723u^{23} - 0.0588566u^{22} + \cdots + 26.2658u + 4.41066 \\ 0.0352500u^{23} + 0.00717673u^{22} + \cdots + 2.95256u + 1.45494 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.0182223u^{23} - 0.0516798u^{22} + \cdots + 29.2184u + 5.86560 \\ 0.0352500u^{23} + 0.00717673u^{22} + \cdots + 2.95256u + 1.45494 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{535804160101971736815030556}{953311802300254409315802772 7}u^{23} - \frac{629721383815858353997296608}{9533118023002544093158027727}u^{22} + \cdots + \frac{1229949482898713858546325963 64}{9533118023002544093158027727}u - \frac{4711615434360442803729520927 0}{9533118023002544093158027727}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^4+2u^3+2u^2+u+1)^6$
c_2, c_{11}	$u^{24}-8u^{22}+\cdots+242u+43$
c_3, c_8	$u^{24}+u^{23}+\cdots-36u+19$
c_4, c_7	$u^{24}+4u^{22}+\cdots+8u+7$
c_5, c_{12}	$(u^3+u^2+2u+1)^8$
c_6, c_9, c_{10}	$(u^4-2u^3+2u^2-u+1)^6$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6, c_9 c_{10}	$(y^4 + 2y^2 + 3y + 1)^6$
c_2, c_{11}	$y^{24} - 16y^{23} + \cdots - 29238y + 1849$
c_3, c_8	$y^{24} + 7y^{23} + \cdots + 3682y + 361$
c_4, c_7	$y^{24} + 8y^{23} + \cdots + 902y + 49$
c_5, c_{12}	$(y^3 + 3y^2 + 2y - 1)^8$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.948525 + 0.024117I$ $a = 1.107750 - 0.828086I$ $b = -1.36937 - 0.54334I$	$0.367792 + 0.232734I$	$10.02977 - 2.06053I$
$u = 0.948525 - 0.024117I$ $a = 1.107750 + 0.828086I$ $b = -1.36937 + 0.54334I$	$0.367792 - 0.232734I$	$10.02977 + 2.06053I$
$u = 0.372920 + 1.033560I$ $a = 0.627711 + 0.294886I$ $b = -0.803726 + 0.192944I$	$-2.27847 + 2.59539I$	$1.47999 - 0.91892I$
$u = 0.372920 - 1.033560I$ $a = 0.627711 - 0.294886I$ $b = -0.803726 - 0.192944I$	$-2.27847 - 2.59539I$	$1.47999 + 0.91892I$
$u = -0.141566 + 1.107020I$ $a = -0.666328 + 0.149071I$ $b = 1.85255 - 0.10648I$	$-6.41605 - 5.42351I$	$-5.04928 + 3.89837I$
$u = -0.141566 - 1.107020I$ $a = -0.666328 - 0.149071I$ $b = 1.85255 + 0.10648I$	$-6.41605 + 5.42351I$	$-5.04928 - 3.89837I$
$u = -1.112460 + 0.319626I$ $a = -1.070090 + 0.374592I$ $b = 1.54326 - 0.23864I$	$4.50538 - 2.59539I$	$16.5590 + 0.9189I$
$u = -1.112460 - 0.319626I$ $a = -1.070090 - 0.374592I$ $b = 1.54326 + 0.23864I$	$4.50538 + 2.59539I$	$16.5590 - 0.9189I$
$u = -0.803726 + 0.192944I$ $a = 0.297446 - 0.872629I$ $b = 0.372920 + 1.033560I$	$-2.27847 + 2.59539I$	$1.47999 - 0.91892I$
$u = -0.803726 - 0.192944I$ $a = 0.297446 + 0.872629I$ $b = 0.372920 - 1.033560I$	$-2.27847 - 2.59539I$	$1.47999 + 0.91892I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.103880 + 0.609859I$ $a = 1.034060 + 0.116061I$ $b = -1.68454 - 0.94082I$	$0.36779 + 5.42351I$	$10.02977 - 3.89837I$
$u = 1.103880 - 0.609859I$ $a = 1.034060 - 0.116061I$ $b = -1.68454 + 0.94082I$	$0.36779 - 5.42351I$	$10.02977 + 3.89837I$
$u = -1.36937 + 0.54334I$ $a = -0.485592 - 0.746758I$ $b = 0.948525 - 0.024117I$	$0.367792 - 0.232734I$	$10.02977 + 2.06053I$
$u = -1.36937 - 0.54334I$ $a = -0.485592 + 0.746758I$ $b = 0.948525 + 0.024117I$	$0.367792 + 0.232734I$	$10.02977 - 2.06053I$
$u = 1.54326 + 0.23864I$ $a = 0.751836 + 0.375390I$ $b = -1.112460 - 0.319626I$	$4.50538 + 2.59539I$	$16.5590 - 0.9189I$
$u = 1.54326 - 0.23864I$ $a = 0.751836 - 0.375390I$ $b = -1.112460 + 0.319626I$	$4.50538 - 2.59539I$	$16.5590 + 0.9189I$
$u = -0.284414 + 0.156586I$ $a = -0.93636 + 2.15223I$ $b = -0.42506 + 1.69414I$	$-6.41605 + 0.23273I$	$-5.04928 - 2.06053I$
$u = -0.284414 - 0.156586I$ $a = -0.93636 - 2.15223I$ $b = -0.42506 - 1.69414I$	$-6.41605 - 0.23273I$	$-5.04928 + 2.06053I$
$u = -0.42506 + 1.69414I$ $a = -0.411490 + 0.144974I$ $b = -0.284414 + 0.156586I$	$-6.41605 + 0.23273I$	$-5.04928 - 2.06053I$
$u = -0.42506 - 1.69414I$ $a = -0.411490 - 0.144974I$ $b = -0.284414 - 0.156586I$	$-6.41605 - 0.23273I$	$-5.04928 + 2.06053I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 1.85255 + 0.10648I$ $a = -0.014573 + 0.410406I$ $b = -0.141566 - 1.107020I$	$-6.41605 + 5.42351I$	$-5.04928 - 3.89837I$
$u = \quad 1.85255 - 0.10648I$ $a = -0.014573 - 0.410406I$ $b = -0.141566 + 1.107020I$	$-6.41605 - 5.42351I$	$-5.04928 + 3.89837I$
$u = -1.68454 + 0.94082I$ $a = -0.676227 + 0.072743I$ $b = \quad 1.103880 - 0.609859I$	$0.36779 - 5.42351I$	$10.02977 + 3.89837I$
$u = -1.68454 - 0.94082I$ $a = -0.676227 - 0.072743I$ $b = \quad 1.103880 + 0.609859I$	$0.36779 + 5.42351I$	$10.02977 - 3.89837I$

V. $I^u_5 = \langle b - u,\ a,\ u^3 + u^2 - 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ u^2 + u - 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^2 - 1 \\ u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u \\ u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u + 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6, c_9 c_{10}	u^3
c_2, c_3, c_4 c_7, c_8, c_{11}	$u^3 + u^2 - 1$
c_5, c_{12}	$u^3 - u^2 + 2u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6, c_9 c_{10}	y^3
c_2, c_3, c_4 c_7, c_8, c_{11}	$y^3 - y^2 + 2y - 1$
c_5, c_{12}	$y^3 + 3y^2 + 2y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.877439 + 0.744862I$ $a = 0$ $b = -0.877439 + 0.744862I$	$-3.02413 - 2.82812I$	$2.49024 + 2.97945I$
$u = -0.877439 - 0.744862I$ $a = 0$ $b = -0.877439 - 0.744862I$	$-3.02413 + 2.82812I$	$2.49024 - 2.97945I$
$u = 0.754878$ $a = 0$ $b = 0.754878$	1.11345	9.01950

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^3(u^4+u^3+u^2-u+1)^6(u^4+2u^3+2u^2+u+1)^6$ $\cdot(u^{20}-8u^{19}+\cdots+3u^2+1)(u^{28}-21u^{27}+\cdots-1076u+85)$
c_2, c_{11}	$(u^3+u^2-1)(u^{20}-u^{19}+\cdots-2u+1)(u^{24}-8u^{22}+\cdots+242u+43)$ $\cdot(u^{24}+u^{23}+\cdots-230u+23)(u^{28}-2u^{27}+\cdots-2u+1)$
c_3, c_8	$(u^3+u^2-1)(u^{20}+u^{19}+\cdots+3u+13)(u^{24}-2u^{23}+\cdots+222u+59)$ $\cdot(u^{24}+u^{23}+\cdots-36u+19)(u^{28}+u^{26}+\cdots+5u+1)$
c_4, c_7	$(u^3+u^2-1)(u^{20}+4u^{18}+\cdots-u+1)(u^{24}+4u^{22}+\cdots+8u+7)$ $\cdot(u^{24}-u^{23}+\cdots+30u+25)(u^{28}-u^{27}+\cdots-u+1)$
c_5	$(u^3-u^2+2u-1)(u^3+u^2+2u+1)^{16}(u^{20}+12u^{18}+\cdots-u+3)$ $\cdot(u^{28}-16u^{27}+\cdots-3584u+256)$
c_6	$u^3(u^4-2u^3+2u^2-u+1)^6(u^4-u^3+u^2+u+1)^6$ $\cdot(u^{20}+7u^{19}+\cdots+7u^2+1)(u^{28}+14u^{27}+\cdots+388u+85)$
c_9, c_{10}	$u^3(u^4-2u^3+2u^2-u+1)^6(u^4-u^3+u^2+u+1)^6$ $\cdot(u^{20}-7u^{19}+\cdots+7u^2+1)(u^{28}+14u^{27}+\cdots+388u+85)$
c_{12}	$(u^3-u^2+2u-1)(u^3+u^2+2u+1)^{16}(u^{20}+12u^{18}+\cdots+u+3)$ $\cdot(u^{28}-16u^{27}+\cdots-3584u+256)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^3(y^4+2y^2+3y+1)^6(y^4+y^3+5y^2+y+1)^6$ $\cdot(y^{20}+4y^{19}+\cdots+6y+1)(y^{28}+5y^{27}+\cdots+88494y+7225)$
c_2, c_{11}	$(y^3-y^2+2y-1)(y^{20}-7y^{19}+\cdots+14y+1)$ $\cdot(y^{24}-16y^{23}+\cdots-29238y+1849)$ $\cdot(y^{24}-5y^{23}+\cdots-17894y+529)(y^{28}-30y^{27}+\cdots-14y+1)$
c_3, c_8	$(y^3-y^2+2y-1)(y^{20}+y^{19}+\cdots-425y+169)$ $\cdot(y^{24}-4y^{23}+\cdots+71902y+3481)(y^{24}+7y^{23}+\cdots+3682y+361)$ $\cdot(y^{28}+2y^{27}+\cdots-y+1)$
c_4, c_7	$(y^3-y^2+2y-1)(y^{20}+8y^{19}+\cdots+5y+1)$ $\cdot(y^{24}+7y^{23}+\cdots+8450y+625)(y^{24}+8y^{23}+\cdots+902y+49)$ $\cdot(y^{28}+5y^{27}+\cdots+y+1)$
c_5, c_{12}	$((y^3+3y^2+2y-1)^{17})(y^{20}+24y^{19}+\cdots+5y+9)$ $\cdot(y^{28}+24y^{27}+\cdots-65536y+65536)$
c_6, c_9, c_{10}	$y^3(y^4+2y^2+3y+1)^6(y^4+y^3+5y^2+y+1)^6$ $\cdot(y^{20}+13y^{19}+\cdots+14y+1)(y^{28}+14y^{27}+\cdots-10634y+7225)$