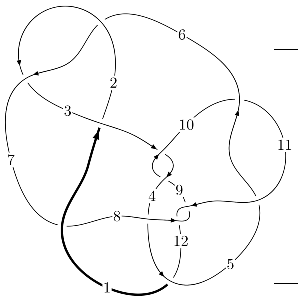
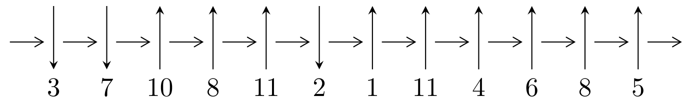
$12n_{0596}$ $(K12n_{0596})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle 5u^{27} + 23u^{26} + \cdots + 2b + 26,\ 11u^{27} + 49u^{26} + \cdots + 4a + 44,\ u^{28} + 5u^{27} + \cdots + 26u + 4\rangle \\
I_2^u &= \langle 76637u^8a^3 + 229871u^8a^2 + \cdots - 157797a - 344895,\ -2u^8a^3 - 2u^8a^2 + \cdots + a + 9, \\
&\quad u^9 - u^8 - 2u^7 + 3u^6 + u^5 - 3u^4 + 2u^3 - u + 1\rangle \\
I_3^u &= \langle -u^{16} - 2u^{15} + \cdots + b - 3,\ -2u^{16} - 2u^{15} + \cdots + a - 3, \\
&\quad u^{17} - 5u^{15} + 12u^{13} - 15u^{11} + 9u^9 + u^7 - 4u^5 - u^4 + 2u^3 + 2u^2 - 1\rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 81 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. $\boldsymbol{I_1^u = \langle 5u^{27} + 23u^{26} + \cdots + 2b + 26,\ 11u^{27} + 49u^{26} + \cdots + 4a + 44,\ u^{28} + 5u^{27} + \cdots + 26u + 4\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^5 - 2u^3 + u \\ u^7 - u^5 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -\frac{11}{4}u^{27} - \frac{49}{4}u^{26} + \cdots - \frac{283}{4}u - 11 \\ -\frac{5}{2}u^{27} - \frac{23}{2}u^{26} + \cdots - \frac{145}{2}u - 13 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^{27} + \frac{7}{2}u^{26} + \cdots + \frac{23}{2}u + \frac{5}{2} \\ \frac{7}{2}u^{27} + \frac{31}{2}u^{26} + \cdots + \frac{163}{2}u + 14 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -3u^{27} - \frac{19}{2}u^{26} + \cdots - \frac{15}{2}u + \frac{1}{2} \\ -\frac{11}{2}u^{27} - \frac{43}{2}u^{26} + \cdots - \frac{155}{2}u - 12 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -\frac{15}{4}u^{27} - \frac{61}{4}u^{26} + \cdots - \frac{331}{4}u - 13 \\ -\frac{7}{2}u^{27} - \frac{29}{2}u^{26} + \cdots - \frac{169}{2}u - 15 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -3u^{27} - \frac{23}{2}u^{26} + \cdots - \frac{121}{2}u - \frac{19}{2} \\ -\frac{5}{2}u^{27} - \frac{19}{2}u^{26} + \cdots - \frac{113}{2}u - 10 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} \frac{5}{4}u^{27} + \frac{15}{4}u^{26} + \cdots + \frac{61}{4}u + 3 \\ -\frac{1}{2}u^{27} - \frac{5}{2}u^{26} + \cdots + \frac{3}{2}u + 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= u^{27} + 7u^{26} + 11u^{25} - 24u^{24} - 95u^{23} - 48u^{22} + 228u^{21} + 408u^{20} - 13u^{19} - 797u^{18} - 888u^{17} + 232u^{16} + 1501u^{15} + 1333u^{14} - 346u^{13} - 1800u^{12} - 1511u^{11} + 137u^{10} + 1416u^9 + 1255u^8 + 153u^7 - 670u^6 - 686u^5 - 222u^4 + 135u^3 + 209u^2 + 110u + 38$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{28} + 15u^{27} + \cdots + 44u + 16$
c_2, c_6	$u^{28} - 5u^{27} + \cdots - 26u + 4$
c_3, c_5, c_9 c_{10}	$u^{28} + 9u^{26} + \cdots - u + 1$
c_4, c_{12}	$u^{28} - u^{27} + \cdots - 2u + 1$
c_7	$u^{28} - 15u^{27} + \cdots - 2082u + 196$
c_8, c_{11}	$u^{28} + 24u^{27} + \cdots + 4608u + 512$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{28} - 3y^{27} + \cdots + 3856y + 256$
c_2, c_6	$y^{28} - 15y^{27} + \cdots - 44y + 16$
c_3, c_5, c_9 c_{10}	$y^{28} + 18y^{27} + \cdots + 13y + 1$
c_4, c_{12}	$y^{28} - 39y^{27} + \cdots - 42y + 1$
c_7	$y^{28} + 21y^{27} + \cdots + 8244y + 38416$
c_8, c_{11}	$y^{28} - 14y^{27} + \cdots - 2883584y + 262144$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.929249 + 0.341636I$ $a = 0.193428 - 0.245481I$ $b = -0.030096 - 0.588079I$	$-1.44836 - 1.32384I$	$0.695067 + 0.255787I$
$u = 0.929249 - 0.341636I$ $a = 0.193428 + 0.245481I$ $b = -0.030096 + 0.588079I$	$-1.44836 + 1.32384I$	$0.695067 - 0.255787I$
$u = -0.660663 + 0.703535I$ $a = -0.684282 + 0.401431I$ $b = 0.508694 + 0.182176I$	$5.08436 - 3.47708I$	$7.23263 + 2.58361I$
$u = -0.660663 - 0.703535I$ $a = -0.684282 - 0.401431I$ $b = 0.508694 - 0.182176I$	$5.08436 + 3.47708I$	$7.23263 - 2.58361I$
$u = -0.978713 + 0.436112I$ $a = -0.573780 + 0.856820I$ $b = -0.23105 + 1.41378I$	$-0.59221 + 3.85896I$	$5.41585 - 8.89544I$
$u = -0.978713 - 0.436112I$ $a = -0.573780 - 0.856820I$ $b = -0.23105 - 1.41378I$	$-0.59221 - 3.85896I$	$5.41585 + 8.89544I$
$u = -0.893353 + 0.642807I$ $a = 0.439255 - 0.143317I$ $b = 0.481145 - 1.329810I$	$4.40206 + 8.59519I$	$6.36570 - 7.75404I$
$u = -0.893353 - 0.642807I$ $a = 0.439255 + 0.143317I$ $b = 0.481145 + 1.329810I$	$4.40206 - 8.59519I$	$6.36570 + 7.75404I$
$u = -0.181084 + 0.864099I$ $a = 2.35580 + 0.19920I$ $b = 0.657053 - 0.345268I$	$0.30413 - 10.11890I$	$5.46914 + 5.28623I$
$u = -0.181084 - 0.864099I$ $a = 2.35580 - 0.19920I$ $b = 0.657053 + 0.345268I$	$0.30413 + 10.11890I$	$5.46914 - 5.28623I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.390931+0.790393I$ $a=\ \ 0.553034-0.988547I$ $b=-0.088477-0.180368I$	$3.66685+0.77577I$	$5.01952-3.31127I$
$u=-0.390931-0.790393I$ $a=\ \ 0.553034+0.988547I$ $b=-0.088477+0.180368I$	$3.66685-0.77577I$	$5.01952+3.31127I$
$u=-0.046181+0.865065I$ $a=-1.71050-0.23913I$ $b=-0.600654+0.312900I$	$-5.04513-2.20112I$	$6.66836+3.09691I$
$u=-0.046181-0.865065I$ $a=-1.71050+0.23913I$ $b=-0.600654-0.312900I$	$-5.04513+2.20112I$	$6.66836-3.09691I$
$u=\ \ 1.194960+0.139644I$ $a=\ \ 0.479609-0.801194I$ $b=\ \ 0.64008-1.70137I$	$-1.55027-3.30862I$	$0.08727+3.64392I$
$u=\ \ 1.194960-0.139644I$ $a=\ \ 0.479609+0.801194I$ $b=\ \ 0.64008+1.70137I$	$-1.55027+3.30862I$	$0.08727-3.64392I$
$u=-1.104270+0.595120I$ $a=-0.695565+0.302010I$ $b=-1.190600+0.700335I$	$1.56113+4.41097I$	$1.00210-1.17558I$
$u=-1.104270-0.595120I$ $a=-0.695565-0.302010I$ $b=-1.190600-0.700335I$	$1.56113-4.41097I$	$1.00210+1.17558I$
$u=\ \ 1.251710+0.341500I$ $a=\ \ 0.02594-1.65411I$ $b=-0.77011-2.56071I$	$-4.19391+6.08731I$	$0.85731-2.80136I$
$u=\ \ 1.251710-0.341500I$ $a=\ \ 0.02594+1.65411I$ $b=-0.77011+2.56071I$	$-4.19391-6.08731I$	$0.85731+2.80136I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.206160+0.542493I$ $a=-0.15086+2.22381I$ $b=-0.02581+3.45703I$	$-2.7661+15.2558I$	$2.52297-8.38664I$
$u=-1.206160-0.542493I$ $a=-0.15086-2.22381I$ $b=-0.02581-3.45703I$	$-2.7661-15.2558I$	$2.52297+8.38664I$
$u=1.251980+0.436921I$ $a=-0.149674+1.280100I$ $b=0.44752+1.88854I$	$-8.98786-2.38473I$	$3.28316+0.77142I$
$u=1.251980-0.436921I$ $a=-0.149674-1.280100I$ $b=0.44752-1.88854I$	$-8.98786+2.38473I$	$3.28316-0.77142I$
$u=-1.237260+0.486713I$ $a=0.03375-1.83518I$ $b=-0.13153-2.67194I$	$-8.62321+7.05383I$	$4.15719-6.57682I$
$u=-1.237260-0.486713I$ $a=0.03375+1.83518I$ $b=-0.13153+2.67194I$	$-8.62321-7.05383I$	$4.15719+6.57682I$
$u=-0.429297+0.384695I$ $a=1.133840+0.097257I$ $b=0.333840-0.315853I$	$0.916737-0.202146I$	$11.22373+1.78332I$
$u=-0.429297-0.384695I$ $a=1.133840-0.097257I$ $b=0.333840+0.315853I$	$0.916737+0.202146I$	$11.22373-1.78332I$

II. $\boldsymbol{I_2^u = \langle 7.66 \times 10^4 a^3 u^8 + 2.30 \times 10^5 a^2 u^8 + \cdots - 1.58 \times 10^5 a - 3.45 \times 10^5,\ -2u^8 a^3 - 2u^8 a^2 + \cdots + a + 9,\ u^9 - u^8 - 2u^7 + 3u^6 + u^5 - 3u^4 + 2u^3 - u + 1 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^5 - 2u^3 + u \\ u^7 - u^5 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} a \\ -0.348260a^3u^8 - 1.04460a^2u^8 + \cdots + 0.717073a + 1.56730 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.0201175a^3u^8 - 0.189537a^2u^8 + \cdots + 0.953476a + 0.606425 \\ 1.18312a^3u^8 + 0.607006a^2u^8 + \cdots - 0.223129a - 0.845472 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.102078a^3u^8 + 0.780534a^2u^8 + \cdots + 0.252298a + 2.71609 \\ 1.10786a^3u^8 + 0.872901a^2u^8 + \cdots + 0.474304a + 0.368532 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.574324a^3u^8 + 0.498198a^2u^8 + \cdots + 1.36008a - 1.45711 \\ 0.226064a^3u^8 - 0.546399a^2u^8 + \cdots + 1.07715a + 0.110190 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.946496a^3u^8 - 0.481503a^2u^8 + \cdots + 1.29709a + 0.301795 \\ -1.23084a^3u^8 - 0.992111a^2u^8 + \cdots - 0.666073a + 0.450292 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0.704404a^3u^8 + 0.679020a^2u^8 + \cdots + 1.31993a - 0.641679 \\ -0.0950072a^3u^8 - 0.862513a^2u^8 + \cdots + 1.36519a + 2.02857 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^7 - 8u^5 + 4u^4 + 8u^3 - 4u^2 + 4u + 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^9 + 5u^8 + 12u^7 + 15u^6 + 9u^5 - u^4 - 4u^3 - 2u^2 + u + 1)^4$
c_2, c_6	$(u^9 + u^8 - 2u^7 - 3u^6 + u^5 + 3u^4 + 2u^3 - u - 1)^4$
c_3, c_5, c_9 c_{10}	$u^{36} + u^{35} + \cdots - 1540u - 431$
c_4, c_{12}	$u^{36} - u^{35} + \cdots - 2656u - 751$
c_7	$(u^9 + 3u^8 + 8u^7 + 13u^6 + 17u^5 + 17u^4 + 12u^3 + 6u^2 + u - 1)^4$
c_8, c_{11}	$(u^2 - u - 1)^{18}$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^9 - y^8 + 12y^7 - 7y^6 + 37y^5 + y^4 - 10y^2 + 5y - 1)^4$
c_2, c_6	$(y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1)^4$
c_3, c_5, c_9 c_{10}	$y^{36} + 15y^{35} + \cdots + 409212y + 185761$
c_4, c_{12}	$y^{36} - 21y^{35} + \cdots - 3861084y + 564001$
c_7	$(y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1)^4$
c_8, c_{11}	$(y^2 - 3y + 1)^{18}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.772920 + 0.510351I$ $a = 0.151267 + 0.887525I$ $b = -0.12420 + 2.14410I$	$5.73128 - 2.09337I$	$8.51499 + 4.16283I$
$u = 0.772920 + 0.510351I$ $a = 0.862183 - 0.856156I$ $b = 1.057480 - 0.208017I$	$-2.16441 - 2.09337I$	$8.51499 + 4.16283I$
$u = 0.772920 + 0.510351I$ $a = -0.325403 + 0.538567I$ $b = -0.954335 - 0.596353I$	$-2.16441 - 2.09337I$	$8.51499 + 4.16283I$
$u = 0.772920 + 0.510351I$ $a = -1.55657 - 0.05607I$ $b = -0.145829 - 0.038232I$	$5.73128 - 2.09337I$	$8.51499 + 4.16283I$
$u = 0.772920 - 0.510351I$ $a = 0.151267 - 0.887525I$ $b = -0.12420 - 2.14410I$	$5.73128 + 2.09337I$	$8.51499 - 4.16283I$
$u = 0.772920 - 0.510351I$ $a = 0.862183 + 0.856156I$ $b = 1.057480 + 0.208017I$	$-2.16441 + 2.09337I$	$8.51499 - 4.16283I$
$u = 0.772920 - 0.510351I$ $a = -0.325403 - 0.538567I$ $b = -0.954335 + 0.596353I$	$-2.16441 + 2.09337I$	$8.51499 - 4.16283I$
$u = 0.772920 - 0.510351I$ $a = -1.55657 + 0.05607I$ $b = -0.145829 + 0.038232I$	$5.73128 + 2.09337I$	$8.51499 - 4.16283I$
$u = -0.825933$ $a = -0.970502 + 0.221821I$ $b = -0.77881 + 1.87106I$	-5.14629	-0.652350
$u = -0.825933$ $a = -0.970502 - 0.221821I$ $b = -0.77881 - 1.87106I$	-5.14629	-0.652350

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.825933$ $a = 2.42255$ $b = 1.04146$	2.74940	-0.652350
$u = -0.825933$ $a = 2.65906$ $b = 3.03642$	2.74940	-0.652350
$u = -1.173910 + 0.391555I$ $a = 0.445118 + 0.708986I$ $b = -0.33086 + 1.41743I$	$-8.31919 + 1.33617I$	$0.715907 - 0.701750I$
$u = -1.173910 + 0.391555I$ $a = 0.535426 + 1.090460I$ $b = 1.55838 + 1.72349I$	$-0.423507 + 1.336170I$	$0.715907 - 0.701750I$
$u = -1.173910 + 0.391555I$ $a = -0.43835 - 2.05384I$ $b = 0.07636 - 3.23541I$	$-8.31919 + 1.33617I$	$0.715907 - 0.701750I$
$u = -1.173910 + 0.391555I$ $a = -0.55315 + 2.43040I$ $b = -0.89210 + 3.03603I$	$-0.423507 + 1.336170I$	$0.715907 - 0.701750I$
$u = -1.173910 - 0.391555I$ $a = 0.445118 - 0.708986I$ $b = -0.33086 - 1.41743I$	$-8.31919 - 1.33617I$	$0.715907 + 0.701750I$
$u = -1.173910 - 0.391555I$ $a = 0.535426 - 1.090460I$ $b = 1.55838 - 1.72349I$	$-0.423507 - 1.336170I$	$0.715907 + 0.701750I$
$u = -1.173910 - 0.391555I$ $a = -0.43835 + 2.05384I$ $b = 0.07636 + 3.23541I$	$-8.31919 - 1.33617I$	$0.715907 + 0.701750I$
$u = -1.173910 - 0.391555I$ $a = -0.55315 - 2.43040I$ $b = -0.89210 - 3.03603I$	$-0.423507 - 1.336170I$	$0.715907 + 0.701750I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.141484 + 0.739668I$ $a = 1.54638 + 0.14856I$ $b = 0.175596 + 0.706856I$	$-4.56478 + 2.45442I$	$5.67208 - 2.91298I$
$u = 0.141484 + 0.739668I$ $a = 0.41836 + 1.61589I$ $b = 0.122312 - 0.331093I$	$3.33090 + 2.45442I$	$5.67208 - 2.91298I$
$u = 0.141484 + 0.739668I$ $a = 2.42721 - 0.66480I$ $b = 1.130180 - 0.397277I$	$3.33090 + 2.45442I$	$5.67208 - 2.91298I$
$u = 0.141484 + 0.739668I$ $a = -2.63329 - 0.51185I$ $b = -0.654005 - 0.428643I$	$-4.56478 + 2.45442I$	$5.67208 - 2.91298I$
$u = 0.141484 - 0.739668I$ $a = 1.54638 - 0.14856I$ $b = 0.175596 - 0.706856I$	$-4.56478 - 2.45442I$	$5.67208 + 2.91298I$
$u = 0.141484 - 0.739668I$ $a = 0.41836 - 1.61589I$ $b = 0.122312 + 0.331093I$	$3.33090 - 2.45442I$	$5.67208 + 2.91298I$
$u = 0.141484 - 0.739668I$ $a = 2.42721 + 0.66480I$ $b = 1.130180 + 0.397277I$	$3.33090 - 2.45442I$	$5.67208 + 2.91298I$
$u = 0.141484 - 0.739668I$ $a = -2.63329 + 0.51185I$ $b = -0.654005 + 0.428643I$	$-4.56478 - 2.45442I$	$5.67208 + 2.91298I$
$u = 1.172470 + 0.500383I$ $a = -0.674403 + 0.060775I$ $b = -1.92502 + 0.14461I$	$0.34972 - 7.08493I$	$2.42320 + 5.91335I$
$u = 1.172470 + 0.500383I$ $a = -0.64734 - 1.39577I$ $b = -0.38514 - 2.29252I$	$-7.54597 - 7.08493I$	$2.42320 + 5.91335I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.172470 + 0.500383I$ $a = 0.61611 + 2.25592I$ $b = 0.86666 + 3.45374I$	$-7.54597 - 7.08493I$	$2.42320 + 5.91335I$
$u = 1.172470 + 0.500383I$ $a = 0.75615 - 2.31269I$ $b = 0.66439 - 3.18473I$	$0.34972 - 7.08493I$	$2.42320 + 5.91335I$
$u = 1.172470 - 0.500383I$ $a = -0.674403 - 0.060775I$ $b = -1.92502 - 0.14461I$	$0.34972 + 7.08493I$	$2.42320 - 5.91335I$
$u = 1.172470 - 0.500383I$ $a = -0.64734 + 1.39577I$ $b = -0.38514 + 2.29252I$	$-7.54597 + 7.08493I$	$2.42320 - 5.91335I$
$u = 1.172470 - 0.500383I$ $a = 0.61611 - 2.25592I$ $b = 0.86666 - 3.45374I$	$-7.54597 + 7.08493I$	$2.42320 - 5.91335I$
$u = 1.172470 - 0.500383I$ $a = 0.75615 + 2.31269I$ $b = 0.66439 + 3.18473I$	$0.34972 + 7.08493I$	$2.42320 - 5.91335I$

III. $\boldsymbol{I^u_3 =}$
$\boldsymbol{\langle -u^{16}-2u^{15}+\cdots+b-3,\ -2u^{16}-2u^{15}+\cdots+a-3,\ u^{17}-5u^{15}+\cdots+2u^2-1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u^2+1\\-u^4\end{pmatrix}$$
$$a_8 = \begin{pmatrix}u^5-2u^3+u\\u^7-u^5+u\end{pmatrix}$$
$$a_6 = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}2u^{16}+2u^{15}+\cdots+3u+3\\u^{16}+2u^{15}+\cdots+2u+3\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-u^{16}-u^{15}+\cdots-2u-2\\-u^{16}+5u^{14}+\cdots-u^2-2u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-u^{16}-u^{15}+\cdots-3u-2\\-u^{16}+5u^{14}+\cdots-3u-1\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}3u^{16}+2u^{15}+\cdots+4u+3\\2u^{16}+2u^{15}+\cdots+3u+3\end{pmatrix}$$
$$a_9 = \begin{pmatrix}4u^{16}+2u^{15}+\cdots+7u+4\\3u^{16}+u^{15}+\cdots+5u+3\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}2u^{16}+u^{15}+\cdots+2u+3\\u^{16}+u^{15}+\cdots+u+2\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 8u^{16}+2u^{15}-36u^{14}-10u^{13}+76u^{12}+22u^{11}-72u^{10}-24u^9+16u^8+10u^7+35u^6+4u^5-18u^4-11u^3+u^2+11u+10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{17} - 10u^{16} + \cdots + 4u - 1$
c_2	$u^{17} - 5u^{15} + 12u^{13} - 15u^{11} + 9u^9 + u^7 - 4u^5 - u^4 + 2u^3 + 2u^2 - 1$
c_3, c_{10}	$u^{17} + 5u^{15} + \cdots - u - 1$
c_4, c_{12}	$u^{17} - u^{16} + \cdots + 5u^2 + 1$
c_5, c_9	$u^{17} + 5u^{15} + \cdots - u + 1$
c_6	$u^{17} - 5u^{15} + 12u^{13} - 15u^{11} + 9u^9 + u^7 - 4u^5 + u^4 + 2u^3 - 2u^2 + 1$
c_7	$u^{17} + 7u^{15} + \cdots - 3u^2 + 1$
c_8	$u^{17} + 7u^{16} + \cdots - u + 1$
c_{11}	$u^{17} - 7u^{16} + \cdots - u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{17} - 2y^{16} + \cdots + 4y - 1$
c_2, c_6	$y^{17} - 10y^{16} + \cdots + 4y - 1$
c_3, c_5, c_9 c_{10}	$y^{17} + 10y^{16} + \cdots + 7y - 1$
c_4, c_{12}	$y^{17} - 7y^{16} + \cdots - 10y - 1$
c_7	$y^{17} + 14y^{16} + \cdots + 6y - 1$
c_8, c_{11}	$y^{17} - 11y^{16} + \cdots - 51y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.806464 + 0.504400I$ $a = -0.748785 + 0.704425I$ $b = -1.238150 - 0.257225I$	$-3.19864 - 2.06883I$	$-1.36600 + 3.80945I$
$u = 0.806464 - 0.504400I$ $a = -0.748785 - 0.704425I$ $b = -1.238150 + 0.257225I$	$-3.19864 + 2.06883I$	$-1.36600 - 3.80945I$
$u = -0.876293 + 0.240637I$ $a = 0.609471 + 0.505981I$ $b = 0.11865 + 1.93872I$	$-4.91029 + 1.12432I$	$2.42540 - 5.99697I$
$u = -0.876293 - 0.240637I$ $a = 0.609471 - 0.505981I$ $b = 0.11865 - 1.93872I$	$-4.91029 - 1.12432I$	$2.42540 + 5.99697I$
$u = 1.099480 + 0.356702I$ $a = 0.45815 - 1.72821I$ $b = 1.06242 - 2.07706I$	$1.14190 - 2.14869I$	$6.17290 + 4.05530I$
$u = 1.099480 - 0.356702I$ $a = 0.45815 + 1.72821I$ $b = 1.06242 + 2.07706I$	$1.14190 + 2.14869I$	$6.17290 - 4.05530I$
$u = 0.079653 + 0.818924I$ $a = -2.03854 - 0.16466I$ $b = -0.547172 - 0.515255I$	$-6.40236 + 1.87076I$	$-0.340060 - 0.880617I$
$u = 0.079653 - 0.818924I$ $a = -2.03854 + 0.16466I$ $b = -0.547172 + 0.515255I$	$-6.40236 - 1.87076I$	$-0.340060 + 0.880617I$
$u = -1.094930 + 0.535891I$ $a = -0.394976 + 0.616533I$ $b = -0.916412 + 0.497599I$	$2.45035 + 5.14369I$	$6.48699 - 5.37235I$
$u = -1.094930 - 0.535891I$ $a = -0.394976 - 0.616533I$ $b = -0.916412 - 0.497599I$	$2.45035 - 5.14369I$	$6.48699 + 5.37235I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.226240 + 0.422738I$ $a = -0.36893 - 1.44794I$ $b = 0.26202 - 2.28019I$	$-10.28250 + 2.44785I$	$-3.93694 - 2.30757I$
$u = -1.226240 - 0.422738I$ $a = -0.36893 + 1.44794I$ $b = 0.26202 + 2.28019I$	$-10.28250 - 2.44785I$	$-3.93694 + 2.30757I$
$u = 0.701228$ $a = 3.47594$ $b = 2.25858$	3.41691	14.8210
$u = -0.354453 + 0.603484I$ $a = 0.284538 - 1.027620I$ $b = 0.675649 - 0.146534I$	$4.57912 - 0.58290I$	$8.48530 + 0.03334I$
$u = -0.354453 - 0.603484I$ $a = 0.284538 + 1.027620I$ $b = 0.675649 + 0.146534I$	$4.57912 + 0.58290I$	$8.48530 - 0.03334I$
$u = 1.215700 + 0.495120I$ $a = 0.46110 + 1.90414I$ $b = 0.45370 + 2.86772I$	$-9.76009 - 6.65732I$	$-3.33785 + 4.07802I$
$u = 1.215700 - 0.495120I$ $a = 0.46110 - 1.90414I$ $b = 0.45370 - 2.86772I$	$-9.76009 + 6.65732I$	$-3.33785 - 4.07802I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^9+5u^8+12u^7+15u^6+9u^5-u^4-4u^3-2u^2+u+1)^4$ $\cdot(u^{17}-10u^{16}+\cdots+4u-1)(u^{28}+15u^{27}+\cdots+44u+16)$
c_2	$(u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1)^4$ $\cdot(u^{17}-5u^{15}+12u^{13}-15u^{11}+9u^9+u^7-4u^5-u^4+2u^3+2u^2-1)$ $\cdot(u^{28}-5u^{27}+\cdots-26u+4)$
c_3, c_{10}	$(u^{17}+5u^{15}+\cdots-u-1)(u^{28}+9u^{26}+\cdots-u+1)$ $\cdot(u^{36}+u^{35}+\cdots-1540u-431)$
c_4, c_{12}	$(u^{17}-u^{16}+\cdots+5u^2+1)(u^{28}-u^{27}+\cdots-2u+1)$ $\cdot(u^{36}-u^{35}+\cdots-2656u-751)$
c_5, c_9	$(u^{17}+5u^{15}+\cdots-u+1)(u^{28}+9u^{26}+\cdots-u+1)$ $\cdot(u^{36}+u^{35}+\cdots-1540u-431)$
c_6	$(u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1)^4$ $\cdot(u^{17}-5u^{15}+12u^{13}-15u^{11}+9u^9+u^7-4u^5+u^4+2u^3-2u^2+1)$ $\cdot(u^{28}-5u^{27}+\cdots-26u+4)$
c_7	$(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)^4$ $\cdot(u^{17}+7u^{15}+\cdots-3u^2+1)(u^{28}-15u^{27}+\cdots-2082u+196)$
c_8	$((u^2-u-1)^{18})(u^{17}+7u^{16}+\cdots-u+1)$ $\cdot(u^{28}+24u^{27}+\cdots+4608u+512)$
c_{11}	$((u^2-u-1)^{18})(u^{17}-7u^{16}+\cdots-u-1)$ $\cdot(u^{28}+24u^{27}+\cdots+4608u+512)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^9 - y^8 + 12y^7 - 7y^6 + 37y^5 + y^4 - 10y^2 + 5y - 1)^4$ $\cdot (y^{17} - 2y^{16} + \cdots + 4y - 1)(y^{28} - 3y^{27} + \cdots + 3856y + 256)$
c_2, c_6	$(y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1)^4$ $\cdot (y^{17} - 10y^{16} + \cdots + 4y - 1)(y^{28} - 15y^{27} + \cdots - 44y + 16)$
c_3, c_5, c_9 c_{10}	$(y^{17} + 10y^{16} + \cdots + 7y - 1)(y^{28} + 18y^{27} + \cdots + 13y + 1)$ $\cdot (y^{36} + 15y^{35} + \cdots + 409212y + 185761)$
c_4, c_{12}	$(y^{17} - 7y^{16} + \cdots - 10y - 1)(y^{28} - 39y^{27} + \cdots - 42y + 1)$ $\cdot (y^{36} - 21y^{35} + \cdots - 3861084y + 564001)$
c_7	$(y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1)^4$ $\cdot (y^{17} + 14y^{16} + \cdots + 6y - 1)(y^{28} + 21y^{27} + \cdots + 8244y + 38416)$
c_8, c_{11}	$((y^2 - 3y + 1)^{18})(y^{17} - 11y^{16} + \cdots - 51y - 1)$ $\cdot (y^{28} - 14y^{27} + \cdots - 2883584y + 262144)$