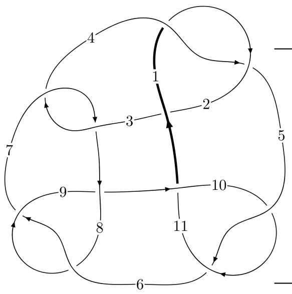
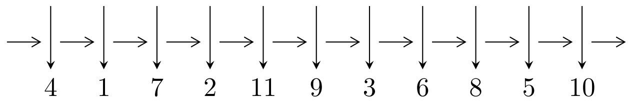
$11a_{43}$ ($K11a_{43}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

[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`).

$$
\begin{aligned}
I^u_1 = \langle & -u^9 - 2u^8 - 3u^7 - 2u^6 - 3u^5 + 2u^4 + 2u^3 + 4u^2 + 4d,\ u^9 + u^8 + u^7 - u^6 + u^5 - 3u^4 - 2u^3 + 4c + 4u, \\
& -u^9 - 2u^8 - 3u^7 - 2u^6 - u^5 + 4u^3 + 4u^2 + 4b,\ u^9 + u^8 + u^7 - u^6 - u^5 - 3u^4 - 2u^3 - 2u^2 + 4a + 4u, \\
& u^{11} + u^{10} + 2u^9 + u^8 + 2u^7 - 3u^6 - 3u^5 - 4u^4 - 4u^2 + 4u + 4\rangle \\
I^u_2 = \langle & 3u^{15} + 3u^{14} + \cdots + 4d - 4,\ 2u^{16} + u^{15} + \cdots + 4c + 2, \\
& u^{14} + 2u^{12} + 3u^{10} + 2u^9 + 2u^8 + 2u^7 + u^6 + 6u^5 + 5u^4 + 4u^3 + 4b + 4,\ 2u^{15} + 4u^{14} + \cdots + 4a + 10, \\
& u^{17} + 2u^{16} + \cdots - 2u - 2\rangle \\
I^u_3 = \langle & 3u^{15} + 3u^{14} + \cdots + 4d - 4,\ 2u^{16} + u^{15} + \cdots + 4c + 2, \\
& -u^{15} - u^{14} - 3u^{13} - 2u^{12} - 5u^{11} - 3u^{10} - 7u^9 - 2u^8 - 5u^7 - 3u^6 - 10u^5 - 11u^4 - 7u^3 - 2u^2 + 4b + 2u + \\
& -2u^{16} - 3u^{15} + \cdots + 4a - 2,\ u^{17} + 2u^{16} + \cdots - 2u - 2\rangle \\
I^u_4 = \langle & 2u^{16} + 5u^{15} + \cdots + 4d + 14u, \\
& -u^{15} - 2u^{13} - 5u^{11} - 2u^{10} - 6u^9 - 2u^8 - 7u^7 - 8u^6 - 9u^5 - 6u^4 - 2u^3 - 6u^2 + 4c - 12u - 4, \\
& -u^{15} - u^{14} - 3u^{13} - 2u^{12} - 5u^{11} - 3u^{10} - 7u^9 - 2u^8 - 5u^7 - 3u^6 - 10u^5 - 11u^4 - 7u^3 - 2u^2 + 4b + 2u + \\
& -2u^{16} - 3u^{15} + \cdots + 4a - 2,\ u^{17} + 2u^{16} + \cdots - 2u - 2\rangle \\
I^u_5 = \langle & -2a^2cu + a^2c + cau + a^2u - 4ca - 2cu - a^2 + 2au + 2d + 5c + a - u + 1, \\
& a^2cu + a^2c - 4cau - a^2u + c^2 + 3ca + 2cu + au - 2c - 3a - u + 2,\ -a^2u + a^2 - au + b - a + 2, \\
& a^3 - 2a^2u + 3au - u,\ u^2 - u + 1\rangle
\end{aligned}
$$

$$
\begin{aligned}
I^v_1 &= \langle a,\ d,\ c + 1,\ b + 1,\ v + 1\rangle \\
I^v_2 &= \langle c,\ d + 1,\ b,\ a - 1,\ v + 1\rangle \\
I^v_3 &= \langle a,\ d + 1,\ c - a,\ b + 1,\ v + 1\rangle \\
I^v_4 &= \langle a,\ da + c + 1,\ dv - 1,\ cv + a + v,\ b + 1\rangle
\end{aligned}
$$

* 8 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 77 representations.
* 1 irreducible components of $\dim_{\mathbb{C}} = 1$

[2] All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I. $\boldsymbol{I_1^u = \langle -u^9 - 2u^8 + \cdots + 4u^2 + 4d,\ u^9 + u^8 + \cdots + 4c + 4u,\ -u^9 - 2u^8 + \cdots + 4u^2 + 4b,\ u^9 + u^8 + \cdots + 4a + 4u,\ u^{11} + u^{10} + \cdots + 4u + 4\rangle}$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -\frac{1}{4}u^9 - \frac{1}{4}u^8 + \cdots + \frac{1}{2}u^2 - u \\ \frac{1}{4}u^9 + \frac{1}{2}u^8 + \cdots - u^3 - u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -\frac{1}{4}u^9 - \frac{1}{4}u^8 + \cdots + \frac{1}{2}u^2 + 1 \\ \frac{1}{4}u^9 + \frac{1}{4}u^7 + \frac{1}{4}u^5 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} \frac{1}{4}u^8 + \frac{1}{2}u^7 + \cdots - \frac{1}{2}u^2 - u \\ \frac{1}{4}u^{10} + \frac{1}{4}u^9 + \cdots - \frac{1}{2}u^4 + u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -\frac{1}{4}u^9 - \frac{1}{4}u^8 + \cdots + \frac{1}{2}u^3 - u \\ \frac{1}{4}u^9 + \frac{1}{2}u^8 + \cdots - \frac{1}{2}u^3 - u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} \frac{1}{4}u^{10} + \frac{1}{4}u^9 + \cdots - \frac{1}{2}u^3 - u \\ -\frac{1}{4}u^{10} - \frac{1}{4}u^9 + \cdots + \frac{1}{2}u^3 - u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -\frac{1}{4}u^8 - \frac{1}{2}u^7 + \cdots + u^2 + u \\ -\frac{1}{4}u^{10} - \frac{1}{4}u^9 + \cdots + \frac{1}{2}u^3 - u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} \frac{1}{2}u^6 + \frac{1}{2}u^4 + \frac{1}{2}u^2 - u \\ \frac{1}{2}u^8 + \frac{1}{2}u^7 + \cdots - \frac{1}{2}u^3 - u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} \frac{1}{2}u^6 + \frac{1}{2}u^4 + \frac{1}{2}u^2 - u \\ \frac{1}{2}u^8 + \frac{1}{2}u^7 + \cdots - \frac{1}{2}u^3 - u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -u^{10} - 3u^9 - 4u^8 - 5u^7 - 4u^6 - u^5 + 3u^4 + 4u^3 + 2u^2 + 4u - 10$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_6, c_8, c_{10}	$y^{11} - 5y^{10} + \cdots + 8y - 1$
c_2, c_9, c_{11}	$y^{11} + 7y^{10} + \cdots + 40y - 1$
c_3, c_7	$y^{11} + 3y^{10} + \cdots + 48y - 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.981646 + 0.091031I$ $a = 0.527474 + 0.160953I$ $b = -0.259189 + 0.777251I$ $c = -0.366942 - 0.136098I$ $d = 0.177956 + 0.945407I$	$-0.38453 + 3.51380I$	$-10.33478 - 7.33311I$
$u = 0.981646 - 0.091031I$ $a = 0.527474 - 0.160953I$ $b = -0.259189 - 0.777251I$ $c = -0.366942 + 0.136098I$ $d = 0.177956 - 0.945407I$	$-0.38453 - 3.51380I$	$-10.33478 + 7.33311I$
$u = 0.360685 + 1.114550I$ $a = 0.621176 - 0.836924I$ $b = 0.410237 + 0.659760I$ $c = 0.074184 - 1.245440I$ $d = 0.569474 + 1.085660I$	$3.72768 - 0.41249I$	$-4.65663 - 1.55838I$
$u = 0.360685 - 1.114550I$ $a = 0.621176 + 0.836924I$ $b = 0.410237 - 0.659760I$ $c = 0.074184 + 1.245440I$ $d = 0.569474 - 1.085660I$	$3.72768 + 0.41249I$	$-4.65663 + 1.55838I$
$u = -1.053240 + 0.696446I$ $a = 0.436462 - 0.109397I$ $b = -1.04374 - 1.24892I$ $c = -1.44166 + 0.27329I$ $d = 1.58561 + 1.00769I$	$-5.36867 - 9.54355I$	$-15.3185 + 7.2879I$
$u = -1.053240 - 0.696446I$ $a = 0.436462 + 0.109397I$ $b = -1.04374 + 1.24892I$ $c = -1.44166 - 0.27329I$ $d = 1.58561 - 1.00769I$	$-5.36867 + 9.54355I$	$-15.3185 - 7.2879I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.306817 + 1.268500I$ $a = 0.136985 + 1.403680I$ $b = -0.369008 - 1.314180I$ $c = -0.860509 + 0.304947I$ $d = -0.184720 - 0.266859I$	$3.91373 - 8.22510I$	$-8.34823 + 8.49377I$
$u = 0.306817 - 1.268500I$ $a = 0.136985 - 1.403680I$ $b = -0.369008 + 1.314180I$ $c = -0.860509 - 0.304947I$ $d = -0.184720 + 0.266859I$	$3.91373 + 8.22510I$	$-8.34823 - 8.49377I$
$u = -0.809328 + 1.127750I$ $a = -0.58283 - 1.50488I$ $b = -1.16377 + 1.41429I$ $c = -0.19914 + 1.98351I$ $d = 1.51573 - 1.89641I$	$-3.9531 + 16.3093I$	$-14.3050 - 10.3392I$
$u = -0.809328 - 1.127750I$ $a = -0.58283 + 1.50488I$ $b = -1.16377 - 1.41429I$ $c = -0.19914 - 1.98351I$ $d = 1.51573 + 1.89641I$	$-3.9531 - 16.3093I$	$-14.3050 + 10.3392I$
$u = -0.573171$ $a = 0.721466$ $b = -0.149048$ $c = 0.588134$ $d = -0.328093$	-0.805061	-12.0740

II. $\boldsymbol{I_2^u = \langle 3u^{15} + 3u^{14} + \cdots + 4d - 4,\ 2u^{16} + u^{15} + \cdots + 4c + 2,\ u^{14} + 2u^{12} + \cdots + 4b + 4,\ 2u^{15} + 4u^{14} + \cdots + 4a + 10,\ u^{17} + 2u^{16} + \cdots - 2u - 2\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -\frac{1}{2}u^{15} - u^{14} + \cdots - 7u - \frac{5}{2} \\ -\frac{1}{4}u^{14} - \frac{1}{2}u^{12} + \cdots - u^3 - 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -\frac{1}{2}u^{15} - u^{14} + \cdots - 8u - \frac{5}{2} \\ -\frac{3}{4}u^{14} - \frac{3}{2}u^{12} + \cdots - 2u^3 - 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -\frac{1}{2}u^{15} - \frac{5}{4}u^{14} + \cdots - 7u - \frac{7}{2} \\ -\frac{1}{4}u^{16} - \frac{1}{2}u^{14} + \cdots - 3u^2 - u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -\frac{1}{2}u^{16} - \frac{1}{4}u^{15} + \cdots - \frac{1}{2}u - \frac{1}{2} \\ -\frac{3}{4}u^{15} - \frac{3}{4}u^{14} + \cdots + \frac{1}{2}u + 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -\frac{1}{4}u^{16} - \frac{3}{4}u^{14} + \cdots - \frac{3}{2}u - \frac{1}{2} \\ -\frac{1}{4}u^{16} - u^{15} + \cdots + \frac{3}{2}u + 1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} \frac{1}{2}u^{16} + u^{15} + \cdots + \frac{11}{4}u^2 - \frac{1}{2} \\ -\frac{1}{4}u^{16} - u^{15} + \cdots + \frac{3}{2}u + 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -\frac{1}{2}u^{15} - u^{14} + \cdots - \frac{15}{2}u - 3 \\ -\frac{1}{2}u^{14} - u^{12} + \cdots - u^3 - 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -\frac{1}{2}u^{15} - u^{14} + \cdots - \frac{15}{2}u - 3 \\ -\frac{1}{2}u^{14} - u^{12} + \cdots - u^3 - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 2u^{16} + 4u^{15} + 6u^{14} + 8u^{13} + 8u^{12} + 14u^{11} + 10u^{10} + 12u^9 + 4u^8 + 10u^7 + 20u^6 + 26u^5 + 16u^4 - 4u^3 - 10u^2 - 8u - 16$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{17} - 5u^{15} + \cdots + 3u^2 - 4$
c_2	$u^{17} + 10u^{16} + \cdots + 24u + 16$
c_3, c_7	$u^{17} + 2u^{16} + \cdots - 2u - 2$
c_5, c_6, c_8 c_{10}	$u^{17} - 2u^{16} + \cdots - u + 1$
c_9, c_{11}	$u^{17} + 8u^{16} + \cdots + 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{17} - 10y^{16} + \cdots + 24y - 16$
c_2	$y^{17} - 10y^{16} + \cdots + 800y - 256$
c_3, c_7	$y^{17} + 6y^{16} + \cdots + 8y - 4$
c_5, c_6, c_8 c_{10}	$y^{17} - 8y^{16} + \cdots + 3y - 1$
c_9, c_{11}	$y^{17} + 4y^{16} + \cdots - 13y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.742615+0.650908I$ $a=-1.40070-2.38570I$ $b=-1.30236+0.73752I$ $c=-0.757942+1.169930I$ $d=\ \ 1.088610+0.211420I$	$-6.94910-1.22724I$	$-18.1485+0.8551I$
$u=-0.742615-0.650908I$ $a=-1.40070+2.38570I$ $b=-1.30236-0.73752I$ $c=-0.757942-1.169930I$ $d=\ \ 1.088610-0.211420I$	$-6.94910+1.22724I$	$-18.1485-0.8551I$
$u=-0.834865+0.265014I$ $a=\ \ 0.511597-0.109110I$ $b=-0.597254-0.693509I$ $c=\ \ 0.800041-0.146031I$ $d=-0.807482-0.323646I$	$-0.670307-0.433874I$	$-9.43166-0.87540I$
$u=-0.834865-0.265014I$ $a=\ \ 0.511597+0.109110I$ $b=-0.597254+0.693509I$ $c=\ \ 0.800041+0.146031I$ $d=-0.807482+0.323646I$	$-0.670307+0.433874I$	$-9.43166+0.87540I$
$u=\ \ 0.976738+0.562668I$ $a=\ \ 0.583366-0.363840I$ $b=\ \ 0.537642-0.360420I$ $c=\ \ 0.879539+0.321552I$ $d=-1.09988+0.90044I$	$-2.67943+4.64771I$	$-12.43915-4.11695I$
$u=\ \ 0.976738-0.562668I$ $a=\ \ 0.583366+0.363840I$ $b=\ \ 0.537642+0.360420I$ $c=\ \ 0.879539-0.321552I$ $d=-1.09988-0.90044I$	$-2.67943-4.64771I$	$-12.43915+4.11695I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.003992+0.842342I$ $a=0.444102-0.000358I$ $b=-1.56684-0.00455I$ $c=0.054218-0.565099I$ $d=-0.672214+0.818183I$	$-1.98005-1.46955I$	$-8.36417+4.66528I$
$u=-0.003992-0.842342I$ $a=0.444102+0.000358I$ $b=-1.56684+0.00455I$ $c=0.054218+0.565099I$ $d=-0.672214-0.818183I$	$-1.98005+1.46955I$	$-8.36417-4.66528I$
$u=-0.656745+1.004700I$ $a=0.422901-0.058229I$ $b=-1.64195-0.84395I$ $c=-0.374228+1.227350I$ $d=1.64609-1.04829I$	$-5.86965+6.57063I$	$-15.2601-6.4345I$
$u=-0.656745-1.004700I$ $a=0.422901+0.058229I$ $b=-1.64195+0.84395I$ $c=-0.374228-1.227350I$ $d=1.64609+1.04829I$	$-5.86965-6.57063I$	$-15.2601+6.4345I$
$u=-0.110097+1.246510I$ $a=0.487558+1.065780I$ $b=0.185932-1.001000I$ $c=0.792244-0.317990I$ $d=0.132799+0.325259I$	$4.74481+2.71165I$	$-6.15758-3.13710I$
$u=-0.110097-1.246510I$ $a=0.487558-1.065780I$ $b=0.185932+1.001000I$ $c=0.792244+0.317990I$ $d=0.132799-0.325259I$	$4.74481-2.71165I$	$-6.15758+3.13710I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.578864 + 1.116300I$ $a = -0.25417 - 1.67482I$ $b = -0.84436 + 1.27067I$ $c = \ \ 0.33097 - 1.54877I$ $d = -0.92580 + 1.26344I$	$1.75994 + 5.51158I$	$-7.74874 - 3.84490I$
$u = -0.578864 - 1.116300I$ $a = -0.25417 + 1.67482I$ $b = -0.84436 - 1.27067I$ $c = \ \ 0.33097 + 1.54877I$ $d = -0.92580 - 1.26344I$	$1.75994 - 5.51158I$	$-7.74874 + 3.84490I$
$u = \ \ 0.718492 + 1.129370I$ $a = \ \ 0.527514 - 0.625770I$ $b = \ \ 0.827540 + 0.397027I$ $c = \ \ 0.03532 + 1.64508I$ $d = -1.31198 - 1.54232I$	$-0.88663 - 10.83370I$	$-11.10622 + 7.41261I$
$u = \ \ 0.718492 - 1.129370I$ $a = \ \ 0.527514 + 0.625770I$ $b = \ \ 0.827540 - 0.397027I$ $c = \ \ 0.03532 - 1.64508I$ $d = -1.31198 + 1.54232I$	$-0.88663 + 10.83370I$	$-11.10622 - 7.41261I$
$u = \ \ 0.463897$ $a = -10.6443$ $b = -1.19672$ $c = -1.52034$ $d = -0.100298$	-4.54799	-20.6880

III. $\boldsymbol{I_3^u = \langle 3u^{15} + 3u^{14} + \cdots + 4d - 4,\ 2u^{16} + u^{15} + \cdots + 4c + 2,\ -u^{15} - u^{14} + \cdots + 4b + 4,\ -2u^{16} - 3u^{15} + \cdots + 4a - 2,\ u^{17} + 2u^{16} + \cdots - 2u - 2\rangle}$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{1}{2}u^{16} + \frac{3}{4}u^{15} + \cdots - \frac{1}{2}u + \frac{1}{2} \\ \frac{1}{4}u^{15} + \frac{1}{4}u^{14} + \cdots - \frac{1}{2}u - 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{1}{4}u^{15} + \frac{1}{2}u^{13} + \cdots + \frac{1}{2}u + 1 \\ -\frac{1}{4}u^{15} - \frac{3}{4}u^{13} + \cdots - \frac{1}{2}u^2 - \frac{1}{2}u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} \frac{1}{2}u^{16} + u^{15} + \cdots - u - \frac{1}{2} \\ -\frac{3}{4}u^{16} - u^{15} + \cdots + \frac{3}{2}u + 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -\frac{1}{2}u^{16} - \frac{1}{4}u^{15} + \cdots - \frac{1}{2}u - \frac{1}{2} \\ -\frac{3}{4}u^{15} - \frac{3}{4}u^{14} + \cdots + \frac{1}{2}u + 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -\frac{1}{4}u^{16} - \frac{3}{4}u^{14} + \cdots - \frac{3}{2}u - \frac{1}{2} \\ -\frac{1}{4}u^{16} - u^{15} + \cdots + \frac{3}{2}u + 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} \frac{1}{2}u^{16} + u^{15} + \cdots + \frac{11}{4}u^2 - \frac{1}{2} \\ -\frac{1}{4}u^{16} - u^{15} + \cdots + \frac{3}{2}u + 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{1}{2}u^{16} - \frac{3}{2}u^{14} + \cdots - \frac{5}{2}u^2 - \frac{1}{2}u \\ -u^{15} - u^{14} + \cdots - 2u^2 + 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{1}{2}u^{16} - \frac{3}{2}u^{14} + \cdots - \frac{5}{2}u^2 - \frac{1}{2}u \\ -u^{15} - u^{14} + \cdots - 2u^2 + 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 2u^{16} + 4u^{15} + 6u^{14} + 8u^{13} + 8u^{12} + 14u^{11} + 10u^{10} + 12u^9 + 4u^8 + 10u^7 + 20u^6 + 26u^5 + 16u^4 - 4u^3 - 10u^2 - 8u - 16$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_6 c_8	$u^{17} - 2u^{16} + \cdots - u + 1$
c_2, c_9	$u^{17} + 8u^{16} + \cdots + 3u + 1$
c_3, c_7	$u^{17} + 2u^{16} + \cdots - 2u - 2$
c_5, c_{10}	$u^{17} - 5u^{15} + \cdots + 3u^2 - 4$
c_{11}	$u^{17} + 10u^{16} + \cdots + 24u + 16$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_6 c_8	$y^{17} - 8y^{16} + \cdots + 3y - 1$
c_2, c_9	$y^{17} + 4y^{16} + \cdots - 13y - 1$
c_3, c_7	$y^{17} + 6y^{16} + \cdots + 8y - 4$
c_5, c_{10}	$y^{17} - 10y^{16} + \cdots + 24y - 16$
c_{11}	$y^{17} - 10y^{16} + \cdots + 800y - 256$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.742615 + 0.650908I$ $a = 0.456798 - 0.077068I$ $b = -1.144690 - 0.810574I$ $c = -0.757942 + 1.169930I$ $d = 1.088610 + 0.211420I$	$-6.94910 - 1.22724I$	$-18.1485 + 0.8551I$
$u = -0.742615 - 0.650908I$ $a = 0.456798 + 0.077068I$ $b = -1.144690 + 0.810574I$ $c = -0.757942 - 1.169930I$ $d = 1.088610 - 0.211420I$	$-6.94910 + 1.22724I$	$-18.1485 - 0.8551I$
$u = -0.834865 + 0.265014I$ $a = 0.636187 + 0.240948I$ $b = 0.130684 + 0.390145I$ $c = 0.800041 - 0.146031I$ $d = -0.807482 - 0.323646I$	$-0.670307 - 0.433874I$	$-9.43166 - 0.87540I$
$u = -0.834865 - 0.265014I$ $a = 0.636187 - 0.240948I$ $b = 0.130684 - 0.390145I$ $c = 0.800041 + 0.146031I$ $d = -0.807482 + 0.323646I$	$-0.670307 + 0.433874I$	$-9.43166 + 0.87540I$
$u = 0.976738 + 0.562668I$ $a = 0.456039 + 0.109653I$ $b = -0.902787 + 1.069590I$ $c = 0.879539 + 0.321552I$ $d = -1.09988 + 0.90044I$	$-2.67943 + 4.64771I$	$-12.43915 - 4.11695I$
$u = 0.976738 - 0.562668I$ $a = 0.456039 - 0.109653I$ $b = -0.902787 - 1.069590I$ $c = 0.879539 - 0.321552I$ $d = -1.09988 - 0.90044I$	$-2.67943 - 4.64771I$	$-12.43915 + 4.11695I$

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.003992 + 0.842342I$ $a = 1.18580 + 1.31498I$ $b = -0.210717 - 0.521575I$ $c = 0.054218 - 0.565099I$ $d = -0.672214 + 0.818183I$	$-1.98005 - 1.46955I$	$-8.36417 + 4.66528I$
$u = -0.003992 - 0.842342I$ $a = 1.18580 - 1.31498I$ $b = -0.210717 + 0.521575I$ $c = 0.054218 + 0.565099I$ $d = -0.672214 - 0.818183I$	$-1.98005 + 1.46955I$	$-8.36417 - 4.66528I$
$u = -0.656745 + 1.004700I$ $a = -0.46618 - 1.83030I$ $b = -1.01520 + 1.16025I$ $c = -0.374228 + 1.227350I$ $d = 1.64609 - 1.04829I$	$-5.86965 + 6.57063I$	$-15.2601 - 6.4345I$
$u = -0.656745 - 1.004700I$ $a = -0.46618 + 1.83030I$ $b = -1.01520 - 1.16025I$ $c = -0.374228 - 1.227350I$ $d = 1.64609 + 1.04829I$	$-5.86965 - 6.57063I$	$-15.2601 + 6.4345I$
$u = -0.110097 + 1.246510I$ $a = 0.360483 - 1.280850I$ $b = -0.110904 + 1.152270I$ $c = 0.792244 - 0.317990I$ $d = 0.132799 + 0.325259I$	$4.74481 + 2.71165I$	$-6.15758 - 3.13710I$
$u = -0.110097 - 1.246510I$ $a = 0.360483 + 1.280850I$ $b = -0.110904 - 1.152270I$ $c = 0.792244 + 0.317990I$ $d = 0.132799 - 0.325259I$	$4.74481 - 2.71165I$	$-6.15758 + 3.13710I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.578864+1.116300I$ $a=\ \ 0.568056+0.689908I$ $b=\ \ 0.662834-0.498844I$ $c=\ \ 0.33097-1.54877I$ $d=-0.92580+1.26344I$	$1.75994+5.51158I$	$-7.74874-3.84490I$
$u=-0.578864-1.116300I$ $a=\ \ 0.568056-0.689908I$ $b=\ \ 0.662834+0.498844I$ $c=\ \ 0.33097+1.54877I$ $d=-0.92580-1.26344I$	$1.75994-5.51158I$	$-7.74874+3.84490I$
$u=\ \ 0.718492+1.129370I$ $a=-0.46497+1.57649I$ $b=-1.03332-1.36799I$ $c=\ \ 0.03532+1.64508I$ $d=-1.31198-1.54232I$	$-0.88663-10.83370I$	$-11.10622+7.41261I$
$u=\ \ 0.718492-1.129370I$ $a=-0.46497-1.57649I$ $b=-1.03332+1.36799I$ $c=\ \ 0.03532-1.64508I$ $d=-1.31198+1.54232I$	$-0.88663+10.83370I$	$-11.10622-7.41261I$
$u=\ \ 0.463897$ $a=\ \ 0.535599$ $b=-0.751807$ $c=-1.52034$ $d=-0.100298$	-4.54799	-20.6880

IV. $\boldsymbol{I_4^u = \langle 2u^{16} + 5u^{15} + \cdots + 4d + 14u,\ -u^{15} - 2u^{13} + \cdots + 4c - 4,\ -u^{15} - u^{14} + \cdots + 4b + 4,\ -2u^{16} - 3u^{15} + \cdots + 4a - 2,\ u^{17} + 2u^{16} + \cdots - 2u - 2\rangle}$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{1}{2}u^{16} + \frac{3}{4}u^{15} + \cdots - \frac{1}{2}u + \frac{1}{2} \\ \frac{1}{4}u^{15} + \frac{1}{4}u^{14} + \cdots - \frac{1}{2}u - 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{1}{4}u^{15} + \frac{1}{2}u^{13} + \cdots + \frac{1}{2}u + 1 \\ -\frac{1}{4}u^{15} - \frac{3}{4}u^{13} + \cdots - \frac{1}{2}u^2 - \frac{1}{2}u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} \frac{1}{2}u^{16} + u^{15} + \cdots - u - \frac{1}{2} \\ -\frac{3}{4}u^{16} - u^{15} + \cdots + \frac{3}{2}u + 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} \frac{1}{4}u^{15} + \frac{1}{2}u^{13} + \cdots + 3u + 1 \\ -\frac{1}{2}u^{16} - \frac{5}{4}u^{15} + \cdots - 7u^2 - \frac{7}{2}u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} \frac{1}{2}u^{11} + u^9 + \cdots + 2u + 1 \\ -\frac{1}{2}u^{16} - u^{15} + \cdots - 7u^2 - \frac{5}{2}u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} \frac{1}{2}u^{16} + u^{15} + \cdots + \frac{1}{2}u - 1 \\ -\frac{1}{2}u^{16} - u^{15} + \cdots - 7u^2 - \frac{5}{2}u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} \frac{1}{2}u^{11} + u^9 + \cdots + \frac{5}{2}u + 1 \\ -\frac{1}{2}u^{16} - u^{15} + \cdots - \frac{13}{2}u^2 - 3u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} \frac{1}{2}u^{11} + u^9 + \cdots + \frac{5}{2}u + 1 \\ -\frac{1}{2}u^{16} - u^{15} + \cdots - \frac{13}{2}u^2 - 3u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 2u^{16} + 4u^{15} + 6u^{14} + 8u^{13} + 8u^{12} + 14u^{11} + 10u^{10} + 12u^9 + 4u^8 + 10u^7 + 20u^6 + 26u^5 + 16u^4 - 4u^3 - 10u^2 - 8u - 16$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5 c_{10}	$u^{17} - 2u^{16} + \cdots - u + 1$
c_2, c_{11}	$u^{17} + 8u^{16} + \cdots + 3u + 1$
c_3, c_7	$u^{17} + 2u^{16} + \cdots - 2u - 2$
c_6, c_8	$u^{17} - 5u^{15} + \cdots + 3u^2 - 4$
c_9	$u^{17} + 10u^{16} + \cdots + 24u + 16$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_{10}	$y^{17} - 8y^{16} + \cdots + 3y - 1$
c_2, c_{11}	$y^{17} + 4y^{16} + \cdots - 13y - 1$
c_3, c_7	$y^{17} + 6y^{16} + \cdots + 8y - 4$
c_6, c_8	$y^{17} - 10y^{16} + \cdots + 24y - 16$
c_9	$y^{17} - 10y^{16} + \cdots + 800y - 256$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.742615 + 0.650908I$ $a = 0.456798 - 0.077068I$ $b = -1.144690 - 0.810574I$ $c = -1.59606 + 0.84314I$ $d = 3.08014 - 0.53548I$	$-6.94910 - 1.22724I$	$-18.1485 + 0.8551I$
$u = -0.742615 - 0.650908I$ $a = 0.456798 + 0.077068I$ $b = -1.144690 + 0.810574I$ $c = -1.59606 - 0.84314I$ $d = 3.08014 + 0.53548I$	$-6.94910 + 1.22724I$	$-18.1485 - 0.8551I$
$u = -0.834865 + 0.265014I$ $a = 0.636187 + 0.240948I$ $b = 0.130684 + 0.390145I$ $c = 0.126137 + 0.313566I$ $d = 0.284217 + 0.647378I$	$-0.670307 - 0.433874I$	$-9.43166 - 0.87540I$
$u = -0.834865 - 0.265014I$ $a = 0.636187 - 0.240948I$ $b = 0.130684 - 0.390145I$ $c = 0.126137 - 0.313566I$ $d = 0.284217 - 0.647378I$	$-0.670307 + 0.433874I$	$-9.43166 + 0.87540I$
$u = 0.976738 + 0.562668I$ $a = 0.456039 + 0.109653I$ $b = -0.902787 + 1.069590I$ $c = -1.248760 - 0.438489I$ $d = 1.50245 - 0.07666I$	$-2.67943 + 4.64771I$	$-12.43915 - 4.11695I$
$u = 0.976738 - 0.562668I$ $a = 0.456039 - 0.109653I$ $b = -0.902787 - 1.069590I$ $c = -1.248760 + 0.438489I$ $d = 1.50245 + 0.07666I$	$-2.67943 - 4.64771I$	$-12.43915 + 4.11695I$

Solutions to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.003992 + 0.842342I$ $a = 1.18580 + 1.31498I$ $b = -0.210717 - 0.521575I$ $c = -0.00520 + 2.80579I$ $d = 0.008617 - 0.945710I$	$-1.98005 - 1.46955I$	$-8.36417 + 4.66528I$
$u = -0.003992 - 0.842342I$ $a = 1.18580 - 1.31498I$ $b = -0.210717 + 0.521575I$ $c = -0.00520 - 2.80579I$ $d = 0.008617 + 0.945710I$	$-1.98005 + 1.46955I$	$-8.36417 - 4.66528I$
$u = -0.656745 + 1.004700I$ $a = -0.46618 - 1.83030I$ $b = -1.01520 + 1.16025I$ $c = -1.54709 + 2.16200I$ $d = 1.70703 - 0.63228I$	$-5.86965 + 6.57063I$	$-15.2601 - 6.4345I$
$u = -0.656745 - 1.004700I$ $a = -0.46618 + 1.83030I$ $b = -1.01520 - 1.16025I$ $c = -1.54709 - 2.16200I$ $d = 1.70703 + 0.63228I$	$-5.86965 - 6.57063I$	$-15.2601 + 6.4345I$
$u = -0.110097 + 1.246510I$ $a = 0.360483 - 1.280850I$ $b = -0.110904 + 1.152270I$ $c = -0.654988 - 0.910006I$ $d = -0.154907 + 0.832377I$	$4.74481 + 2.71165I$	$-6.15758 - 3.13710I$
$u = -0.110097 - 1.246510I$ $a = 0.360483 + 1.280850I$ $b = -0.110904 - 1.152270I$ $c = -0.654988 + 0.910006I$ $d = -0.154907 - 0.832377I$	$4.74481 - 2.71165I$	$-6.15758 + 3.13710I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.578864+1.116300I$ $a=\ 0.568056+0.689908I$ $b=\ 0.662834-0.498844I$ $c=\ 0.119127+1.123250I$ $d=\ 1.08705-0.99233I$	$1.75994+5.51158I$	$-7.74874-3.84490I$
$u=-0.578864-1.116300I$ $a=\ 0.568056-0.689908I$ $b=\ 0.662834+0.498844I$ $c=\ 0.119127-1.123250I$ $d=\ 1.08705+0.99233I$	$1.75994-5.51158I$	$-7.74874+3.84490I$
$u=\ 0.718492+1.129370I$ $a=-0.46497+1.57649I$ $b=-1.03332-1.36799I$ $c=-0.64982-1.72842I$ $d=\ 1.23193+1.36601I$	$-0.88663-10.83370I$	$-11.10622+7.41261I$
$u=\ 0.718492-1.129370I$ $a=-0.46497-1.57649I$ $b=-1.03332+1.36799I$ $c=-0.64982+1.72842I$ $d=\ 1.23193-1.36601I$	$-0.88663+10.83370I$	$-11.10622-7.41261I$
$u=\ 0.463897$ $a=\ 0.535599$ $b=-0.751807$ $c=\ 2.91332$ $d=-5.49303$	-4.54799	-20.6880

V. $\boldsymbol{I^u_5 = \langle -2a^2cu + cau + \cdots + a + 1,\ a^2cu - 4cau + \cdots - 3a + 2,\ -a^2u - au + \cdots - a + 2,\ a^3 - 2a^2u + 3au - u,\ u^2 - u + 1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ u-1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} a \\ a^2u - a^2 + au + a - 2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -a^2u + a^2 - a + 2 \\ 2a^2u - a^2 - au + 3a + 2u - 4 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} a^2u - a^2 + au + 2a - 2 \\ -2a^2u + a^2 + au - 4a - 2u + 4 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} c \\ a^2cu - \frac{1}{2}cau + \cdots - \frac{1}{2}a - \frac{1}{2} \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -\frac{1}{2}a^2cu + 2cau + \cdots + \frac{3}{2}c + \frac{3}{2}a \\ \frac{3}{2}a^2cu - \frac{5}{2}cau + \cdots - 2a - \frac{1}{2} \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -a^2cu + \frac{1}{2}cau + \cdots + \frac{1}{2}a + \frac{1}{2} \\ \frac{3}{2}a^2cu - \frac{5}{2}cau + \cdots - 2a - \frac{1}{2} \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} \frac{3}{2}cau + \frac{1}{2}a^2u + \cdots + \frac{3}{2}a + \frac{1}{2} \\ -\frac{3}{2}cau - \frac{1}{2}a^2u + \cdots - \frac{3}{2}a - \frac{3}{2} \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} \frac{3}{2}cau + \frac{1}{2}a^2u + \cdots + \frac{3}{2}a + \frac{1}{2} \\ -\frac{3}{2}cau - \frac{1}{2}a^2u + \cdots - \frac{3}{2}a - \frac{3}{2} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u - 14$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.500000 + 0.866025I$ $a = 0.741145 - 0.632163I$ $b = 0.395862 + 0.291743I$ $c = 0.562490 + 0.528127I$ $d = -1.77196 - 0.20576I$	$-3.28987 - 2.02988I$	$-12.00000 + 3.46410I$
$u = 0.500000 + 0.866025I$ $a = 0.741145 - 0.632163I$ $b = 0.395862 + 0.291743I$ $c = 0.85024 + 2.21534I$ $d = -1.091350 - 0.608709I$	$-3.28987 - 2.02988I$	$-12.00000 + 3.46410I$
$u = 0.500000 + 0.866025I$ $a = 0.439111 + 0.046276I$ $b = -1.51194 + 0.59451I$ $c = -0.412728 - 1.011420I$ $d = 0.863315 + 0.814466I$	$-3.28987 - 2.02988I$	$-12.00000 + 3.46410I$
$u = 0.500000 + 0.866025I$ $a = 0.439111 + 0.046276I$ $b = -1.51194 + 0.59451I$ $c = 0.562490 + 0.528127I$ $d = -1.77196 - 0.20576I$	$-3.28987 - 2.02988I$	$-12.00000 + 3.46410I$
$u = 0.500000 + 0.866025I$ $a = -0.18026 + 2.31794I$ $b = -0.883917 - 0.886250I$ $c = -0.412728 - 1.011420I$ $d = 0.863315 + 0.814466I$	$-3.28987 - 2.02988I$	$-12.00000 + 3.46410I$
$u = 0.500000 + 0.866025I$ $a = -0.18026 + 2.31794I$ $b = -0.883917 - 0.886250I$ $c = 0.85024 + 2.21534I$ $d = -1.091350 - 0.608709I$	$-3.28987 - 2.02988I$	$-12.00000 + 3.46410I$

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.500000 - 0.866025I$ $a = 0.741145 + 0.632163I$ $b = 0.395862 - 0.291743I$ $c = 0.562490 - 0.528127I$ $d = -1.77196 + 0.20576I$	$-3.28987 + 2.02988I$	$-12.00000 - 3.46410I$
$u = 0.500000 - 0.866025I$ $a = 0.741145 + 0.632163I$ $b = 0.395862 - 0.291743I$ $c = 0.85024 - 2.21534I$ $d = -1.091350 + 0.608709I$	$-3.28987 + 2.02988I$	$-12.00000 - 3.46410I$
$u = 0.500000 - 0.866025I$ $a = 0.439111 - 0.046276I$ $b = -1.51194 - 0.59451I$ $c = -0.412728 + 1.011420I$ $d = 0.863315 - 0.814466I$	$-3.28987 + 2.02988I$	$-12.00000 - 3.46410I$
$u = 0.500000 - 0.866025I$ $a = 0.439111 - 0.046276I$ $b = -1.51194 - 0.59451I$ $c = 0.562490 - 0.528127I$ $d = -1.77196 + 0.20576I$	$-3.28987 + 2.02988I$	$-12.00000 - 3.46410I$
$u = 0.500000 - 0.866025I$ $a = -0.18026 - 2.31794I$ $b = -0.883917 + 0.886250I$ $c = -0.412728 + 1.011420I$ $d = 0.863315 - 0.814466I$	$-3.28987 + 2.02988I$	$-12.00000 - 3.46410I$
$u = 0.500000 - 0.866025I$ $a = -0.18026 - 2.31794I$ $b = -0.883917 + 0.886250I$ $c = 0.85024 - 2.21534I$ $d = -1.091350 + 0.608709I$	$-3.28987 + 2.02988I$	$-12.00000 - 3.46410I$

VI. $I_1^v = \langle a,\ d,\ c+1,\ b+1,\ v+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = -1.00000$ $a = 0$ $b = -1.00000$ $c = -1.00000$ $d = 0$	-3.28987	-12.0000

VII. $I_2^v = \langle c,\ d+1,\ b,\ a-1,\ v+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = -1.00000$		
$a = 1.00000$		
$b = 0$	-3.28987	-12.0000
$c = 0$		
$d = -1.00000$		

VIII. $I_3^v = \langle a,\ d+1,\ c-a,\ b+1,\ v+1\rangle$

(i) Arc colorings

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

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

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

$a_1 = \begin{pmatrix}0\\-1\end{pmatrix}$

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

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

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

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

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

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

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = -1.00000$ $a = 0$ $b = -1.00000$ $c = 0$ $d = -1.00000$	-3.28987	-12.0000

IX. $\boldsymbol{I_4^v = \langle a,\ da + c + 1,\ dv - 1,\ cv + a + v,\ b + 1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -1 \\ d \end{pmatrix}$$
$$a_9 = \begin{pmatrix} v - 1 \\ d \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ -d \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -1 \\ d - 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -1 \\ d - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= d^2 + v^2 - 20$

(iv) u-Polynomials at the component : It cannot be defined for a positive dimension component.

(v) Riley Polynomials at the component : It cannot be defined for a positive dimension component.

(iv) Complex Volumes and Cusp Shapes

Solution to I_4^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = \cdots$		
$a = \cdots$		
$b = \cdots$	-4.93480	$-19.9459 + 0.3728I$
$c = \cdots$		
$d = \cdots$		

X. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_6	$u(u-1)^2(u^6-2u^4+u^3+u^2-u+1)^2$ $\cdot(u^{11}-u^{10}-2u^9+3u^8+3u^7-5u^6+4u^4-2u^2+2u+1)$ $\cdot(u^{17}-5u^{15}+\cdots+3u^2-4)(u^{17}-2u^{16}+\cdots-u+1)^2$
c_2, c_9, c_{11}	$u(u+1)^2(u^6+4u^5+6u^4+3u^3-u^2-u+1)^2$ $\cdot(u^{11}+5u^{10}+\cdots+8u+1)(u^{17}+8u^{16}+\cdots+3u+1)^2$ $\cdot(u^{17}+10u^{16}+\cdots+24u+16)$
c_3, c_7	$u^3(u^2-u+1)^6$ $\cdot(u^{11}+u^{10}+2u^9+u^8+2u^7-3u^6-3u^5-4u^4-4u^2+4u+4)$ $\cdot(u^{17}+2u^{16}+\cdots-2u-2)^3$
c_4, c_8	$u(u+1)^2(u^6-2u^4+u^3+u^2-u+1)^2$ $\cdot(u^{11}-u^{10}-2u^9+3u^8+3u^7-5u^6+4u^4-2u^2+2u+1)$ $\cdot(u^{17}-5u^{15}+\cdots+3u^2-4)(u^{17}-2u^{16}+\cdots-u+1)^2$
c_5, c_{10}	$u(u-1)(u+1)(u^6-2u^4+u^3+u^2-u+1)^2$ $\cdot(u^{11}-u^{10}-2u^9+3u^8+3u^7-5u^6+4u^4-2u^2+2u+1)$ $\cdot(u^{17}-5u^{15}+\cdots+3u^2-4)(u^{17}-2u^{16}+\cdots-u+1)^2$

XI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_6, c_8, c_{10}	$y(y-1)^2(y^6-4y^5+6y^4-3y^3-y^2+y+1)^2$ $\cdot(y^{11}-5y^{10}+\cdots+8y-1)(y^{17}-10y^{16}+\cdots+24y-16)$ $\cdot(y^{17}-8y^{16}+\cdots+3y-1)^2$
c_2, c_9, c_{11}	$y(y-1)^2(y^6-4y^5+10y^4-11y^3+19y^2-3y+1)^2$ $\cdot(y^{11}+7y^{10}+\cdots+40y-1)(y^{17}-10y^{16}+\cdots+800y-256)$ $\cdot(y^{17}+4y^{16}+\cdots-13y-1)^2$
c_3, c_7	$y^3(y^2+y+1)^6(y^{11}+3y^{10}+\cdots+48y-16)$ $\cdot(y^{17}+6y^{16}+\cdots+8y-4)^3$