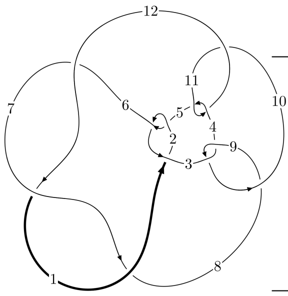
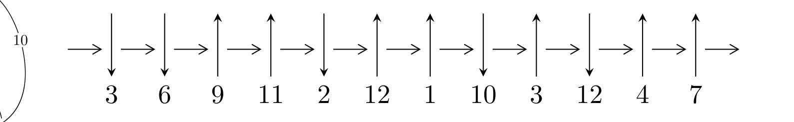
$12n_{0495}$ $(K12n_{0495})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$
\begin{aligned}
I_1^u = \langle & 5u^{14} - 18u^{13} + \cdots + 32b - 6,\ 10u^{14} - 33u^{13} + \cdots + 16a - 24, \\
& u^{15} - 3u^{14} + 7u^{13} - 11u^{12} + 26u^{11} - 40u^{10} + 58u^9 - 56u^8 + 77u^7 - 59u^6 + 55u^5 - 15u^4 + 16u^3 + 6u^2 + 2\rangle \\
I_2^u = \langle & u^3 + u^2 + 2b,\ u^3 + 2a + u,\ u^4 + u^2 + 2\rangle \\
I_3^u = \langle & -71485u^{13} - 71179u^{12} + \cdots + 855248b - 1081596, \\
& -61525u^{13} + 23653u^{12} + \cdots + 1710496a + 2423156, \\
& u^{14} + u^{13} + u^{12} + 7u^{11} + 12u^{10} + 12u^9 + 36u^8 + 46u^7 + 51u^6 + 89u^5 + 73u^4 + 57u^3 + 58u^2 + 12u + 8\rangle \\
I_4^u = \langle & -a^3u - a^3 + 2a^2 + 3au + 2b + a - u - 3,\ a^4 + a^3u - 3a^2 - 2au + 1,\ u^2 + 1\rangle \\
I_5^u = \langle & -a^2 + 4b - 3a,\ a^3 + 2a^2 + a + 4,\ u + 1\rangle \\
I_6^u = \langle & u^3 - u^2 + 2b - u + 1,\ u^3 + a,\ u^4 + 1\rangle
\end{aligned}
$$

$$I_1^v = \langle a,\ b + 1,\ v - 1\rangle$$

* 7 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 49 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. $\boldsymbol{I_1^u = \langle 5u^{14} - 18u^{13} + \cdots + 32b - 6,\ 10u^{14} - 33u^{13} + \cdots + 16a - 24,\ u^{15} - 3u^{14} + \cdots + 6u^2 + 2\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -\frac{5}{8}u^{14} + \frac{33}{16}u^{13} + \cdots - \frac{23}{8}u + \frac{3}{2} \\ -0.156250u^{14} + 0.562500u^{13} + \cdots - 0.312500u + 0.187500 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} \frac{1}{16}u^{14} - \frac{1}{2}u^{13} + \cdots - \frac{7}{8}u + \frac{1}{8} \\ 0.156250u^{14} - 0.562500u^{13} + \cdots + 0.312500u - 0.187500 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -\frac{1}{8}u^{13} + \frac{3}{8}u^{12} + \cdots - \frac{5}{2}u^2 + \frac{3}{4} \\ -u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -\frac{9}{16}u^{14} + \frac{7}{4}u^{13} + \cdots - 4u + \frac{3}{2} \\ \frac{1}{32}u^{14} - \frac{1}{8}u^{13} + \cdots - \frac{5}{16}u + \frac{1}{16} \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -\frac{5}{8}u^{14} + \frac{33}{16}u^{13} + \cdots - \frac{23}{8}u + \frac{3}{2} \\ \frac{1}{32}u^{14} - \frac{1}{8}u^{13} + \cdots + \frac{15}{16}u - \frac{3}{16} \end{pmatrix}$$
$$a_5 = \begin{pmatrix} \frac{1}{8}u^{14} - \frac{3}{8}u^{13} + \cdots + \frac{3}{2}u^3 - \frac{7}{4}u \\ -u^5 - u^3 - u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -\frac{1}{8}u^{13} + \frac{3}{8}u^{12} + \cdots - \frac{3}{2}u^2 + \frac{3}{4} \\ u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{17}{8}u^{14} - \frac{27}{4}u^{13} + \frac{125}{8}u^{12} - \frac{99}{4}u^{11} + \frac{113}{2}u^{10} - \frac{181}{2}u^9 + \frac{515}{4}u^8 - \frac{501}{4}u^7 + \frac{1299}{8}u^6 - \frac{273}{2}u^5 + \frac{927}{8}u^4 - 34u^3 + 20u^2 + \frac{11}{4}u - \frac{1}{4}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{15} + 18u^{13} + \cdots + 1061u + 121$
c_2, c_5	$u^{15} + 6u^{14} + \cdots + 7u - 11$
c_3, c_4, c_9 c_{11}	$u^{15} + 3u^{14} + \cdots - 6u^2 - 2$
c_6, c_7, c_{12}	$u^{15} - 6u^{14} + \cdots - 5u - 11$
c_8, c_{10}	$u^{15} + 5u^{14} + \cdots - 24u - 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{15} + 36y^{14} + \cdots + 486357y - 14641$
c_2, c_5	$y^{15} + 18y^{13} + \cdots + 1061y - 121$
c_3, c_4, c_9 c_{11}	$y^{15} + 5y^{14} + \cdots - 24y - 4$
c_6, c_7, c_{12}	$y^{15} - 24y^{14} + \cdots - 459y - 121$
c_8, c_{10}	$y^{15} + 45y^{14} + \cdots + 768y - 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.697385 + 0.828178I$ $a = 0.320085 - 1.205310I$ $b = 0.596828 - 0.784304I$	$-1.30143 + 4.86126I$	$-1.54571 - 6.09014I$
$u = 0.697385 - 0.828178I$ $a = 0.320085 + 1.205310I$ $b = 0.596828 + 0.784304I$	$-1.30143 - 4.86126I$	$-1.54571 + 6.09014I$
$u = -0.568338 + 1.053040I$ $a = 0.458588 - 0.214607I$ $b = 0.355345 + 0.509744I$	$2.62859 - 6.17338I$	$5.25348 + 7.15560I$
$u = -0.568338 - 1.053040I$ $a = 0.458588 + 0.214607I$ $b = 0.355345 - 0.509744I$	$2.62859 + 6.17338I$	$5.25348 - 7.15560I$
$u = -0.059276 + 0.727915I$ $a = -1.94701 - 0.12490I$ $b = -1.037900 + 0.063892I$	$4.57881 + 2.95035I$	$8.93827 - 0.98271I$
$u = -0.059276 - 0.727915I$ $a = -1.94701 + 0.12490I$ $b = -1.037900 - 0.063892I$	$4.57881 - 2.95035I$	$8.93827 + 0.98271I$
$u = 0.142281 + 0.483742I$ $a = 1.39721 - 0.99957I$ $b = 0.178761 - 0.047955I$	$-1.49033 - 1.08782I$	$-1.21432 + 1.45793I$
$u = 0.142281 - 0.483742I$ $a = 1.39721 + 0.99957I$ $b = 0.178761 + 0.047955I$	$-1.49033 + 1.08782I$	$-1.21432 - 1.45793I$
$u = 1.18615 + 1.00645I$ $a = -1.46570 - 0.18514I$ $b = -0.570924 - 0.788977I$	$6.77956 + 6.79736I$	$4.43994 - 4.51085I$
$u = 1.18615 - 1.00645I$ $a = -1.46570 + 0.18514I$ $b = -0.570924 + 0.788977I$	$6.77956 - 6.79736I$	$4.43994 + 4.51085I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.423770$ $a=-0.380234$ $b=-0.682622$	0.948533	11.8010
$u=-0.90624+1.36309I$ $a=\ \ 1.16372-1.52636I$ $b=\ \ 0.36666-2.75118I$	$16.2386-13.6992I$	$2.92416+5.89399I$
$u=-0.90624-1.36309I$ $a=\ \ 1.16372+1.52636I$ $b=\ \ 0.36666+2.75118I$	$16.2386+13.6992I$	$2.92416-5.89399I$
$u=\ \ 1.21992+1.30757I$ $a=\ \ 0.76322+1.95846I$ $b=-0.04746+2.68598I$	$18.1501+4.1175I$	$4.30382-1.81660I$
$u=\ \ 1.21992-1.30757I$ $a=\ \ 0.76322-1.95846I$ $b=-0.04746-2.68598I$	$18.1501-4.1175I$	$4.30382+1.81660I$

II. $I_2^u = \langle u^3 + u^2 + 2b,\ u^3 + 2a + u,\ u^4 + u^2 + 2\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -\frac{1}{2}u^3 - \frac{1}{2}u \\ -\frac{1}{2}u^3 - \frac{1}{2}u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -\frac{1}{2}u^3 + u^2 - \frac{1}{2}u + 1 \\ -\frac{1}{2}u^3 + \frac{1}{2}u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^2 - 1 \\ -u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -\frac{1}{2}u^3 - \frac{1}{2}u \\ -\frac{1}{2}u^3 - \frac{1}{2}u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -\frac{1}{2}u^3 - \frac{1}{2}u \\ -\frac{1}{2}u^3 - \frac{1}{2}u^2 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ -u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -1 \\ -u^2 - 2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_6 c_7	$(u-1)^4$
c_2, c_{12}	$(u+1)^4$
c_3, c_4, c_9 c_{11}	u^4+u^2+2
c_8, c_{10}	$(u^2-u+2)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5 c_6, c_7, c_{12}	$(y-1)^4$
c_3, c_4, c_9 c_{11}	$(y^2+y+2)^2$
c_8, c_{10}	$(y^2+3y+4)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.676097 + 0.978318I$ $a = 0.478073 - 0.691776I$ $b = 1.066120 - 0.864054I$	$0.82247 + 5.33349I$	$2.00000 - 5.29150I$
$u = 0.676097 - 0.978318I$ $a = 0.478073 + 0.691776I$ $b = 1.066120 + 0.864054I$	$0.82247 - 5.33349I$	$2.00000 + 5.29150I$
$u = -0.676097 + 0.978318I$ $a = -0.478073 - 0.691776I$ $b = -0.566121 + 0.458821I$	$0.82247 - 5.33349I$	$2.00000 + 5.29150I$
$u = -0.676097 - 0.978318I$ $a = -0.478073 + 0.691776I$ $b = -0.566121 - 0.458821I$	$0.82247 + 5.33349I$	$2.00000 - 5.29150I$

III.

$\boldsymbol{I^u_3 = \langle -7.15 \times 10^4 u^{13} - 7.12 \times 10^4 u^{12} + \cdots + 8.55 \times 10^5 b - 1.08 \times 10^6,\ -6.15 \times 10^4 u^{13} + 2.37 \times 10^4 u^{12} + \cdots + 1.71 \times 10^6 a + 2.42 \times 10^6,\ u^{14} + u^{13} + \cdots + 12u + 8 \rangle}$

(i) Arc colorings

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

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

$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0359691u^{13} - 0.0138282u^{12} + \cdots - 0.612814u - 1.41664 \\ 0.0835839u^{13} + 0.0832262u^{12} + \cdots + 2.37555u + 1.26466 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.0716091u^{13} - 0.0864036u^{12} + \cdots - 2.69890u - 0.496032 \\ 0.0256803u^{13} + 0.0829128u^{12} + \cdots + 3.52899u + 1.16024 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.0423257u^{13} + 0.0196119u^{12} + \cdots + 0.694498u - 1.67568 \\ -0.00489683u^{13} - 0.000238527u^{12} + \cdots - 0.0660393u + 1.18171 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.0923358u^{13} - 0.177850u^{12} + \cdots - 4.80626u - 2.20422 \\ 0.0564421u^{13} + 0.128466u^{12} + \cdots + 5.94481u + 2.59514 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.0359691u^{13} - 0.0138282u^{12} + \cdots - 0.612814u - 1.41664 \\ 0.105884u^{13} + 0.0653296u^{12} + \cdots + 2.68537u + 1.66304 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.120342u^{13} - 0.180647u^{12} + \cdots - 6.00953u - 1.46083 \\ 0.0761440u^{13} + 0.0459726u^{12} + \cdots + 5.11046u + 0.860223 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.0374289u^{13} + 0.0193733u^{12} + \cdots + 0.628459u - 1.49397 \\ -0.0700990u^{13} - 0.0120106u^{12} + \cdots - 0.148804u + 1.32616 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{133137}{213812}u^{13} - \frac{52127}{213812}u^{12} + \cdots - \frac{496203}{53453}u + \frac{335445}{53453}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^7-2u^6+15u^5-35u^4+11u^3+20u^2+13u+9)^2$
c_2, c_5	$(u^7-2u^6+3u^5-u^4+5u^3+2u^2-u-3)^2$
c_3, c_4, c_9 c_{11}	$u^{14}-u^{13}+\cdots-12u+8$
c_6, c_7, c_{12}	$(u^7+2u^6-5u^5-9u^4+9u^3+14u^2+3u-3)^2$
c_8, c_{10}	$u^{14}+u^{13}+\cdots+784u+64$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^7+26y^6+107y^5-789y^4+1947y^3+516y^2-191y-81)^2$
c_2, c_5	$(y^7+2y^6+15y^5+35y^4+11y^3-20y^2+13y-9)^2$
c_3, c_4, c_9 c_{11}	$y^{14}+y^{13}+\cdots+784y+64$
c_6, c_7, c_{12}	$(y^7-14y^6+79y^5-221y^4+315y^3-196y^2+93y-9)^2$
c_8, c_{10}	$y^{14}+21y^{13}+\cdots-209664y+4096$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.189350 + 1.052410I$ $a = 0.100138 - 0.556568I$ $b = 1.64987 + 0.29513I$	-4.30745	$-7.31983 + 0.I$
$u = 0.189350 - 1.052410I$ $a = 0.100138 + 0.556568I$ $b = 1.64987 - 0.29513I$	-4.30745	$-7.31983 + 0.I$
$u = 0.009734 + 1.144270I$ $a = 0.482951 - 0.115663I$ $b = -0.207824 + 0.900142I$	$-2.06755 - 1.45738I$	$4.50826 + 4.10370I$
$u = 0.009734 - 1.144270I$ $a = 0.482951 + 0.115663I$ $b = -0.207824 - 0.900142I$	$-2.06755 + 1.45738I$	$4.50826 - 4.10370I$
$u = -1.185310 + 0.249865I$ $a = 1.21841 + 0.75477I$ $b = 0.108273 + 0.365843I$	$5.47090 + 1.03782I$	$5.54723 - 0.70964I$
$u = -1.185310 - 0.249865I$ $a = 1.21841 - 0.75477I$ $b = 0.108273 - 0.365843I$	$5.47090 - 1.03782I$	$5.54723 + 0.70964I$
$u = 0.74851 + 1.30026I$ $a = -0.883878 + 0.746918I$ $b = -0.98455 + 1.12797I$	$5.47090 + 1.03782I$	$5.54723 - 0.70964I$
$u = 0.74851 - 1.30026I$ $a = -0.883878 - 0.746918I$ $b = -0.98455 - 1.12797I$	$5.47090 - 1.03782I$	$5.54723 + 0.70964I$
$u = -0.062057 + 0.426068I$ $a = -1.313380 - 0.130369I$ $b = 1.048580 + 0.721441I$	$-2.06755 + 1.45738I$	$4.50826 - 4.10370I$
$u = -0.062057 - 0.426068I$ $a = -1.313380 + 0.130369I$ $b = 1.048580 - 0.721441I$	$-2.06755 - 1.45738I$	$4.50826 + 4.10370I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.48947+0.77264I$ $a=-1.17405+2.01302I$ $b=-0.15440+2.28010I$	$18.4896+5.2126I$	$4.60442-1.93466I$
$u=-1.48947-0.77264I$ $a=-1.17405-2.01302I$ $b=-0.15440-2.28010I$	$18.4896-5.2126I$	$4.60442+1.93466I$
$u=\ \ 1.28924+1.19882I$ $a=-1.43019-1.69938I$ $b=-0.45995-2.46137I$	$18.4896+5.2126I$	$4.60442-1.93466I$
$u=\ \ 1.28924-1.19882I$ $a=-1.43019+1.69938I$ $b=-0.45995+2.46137I$	$18.4896-5.2126I$	$4.60442+1.93466I$

IV.

$\boldsymbol{I_4^u = \langle -a^3u - a^3 + 2a^2 + 3au + 2b + a - u - 3,\ a^4 + a^3u - 3a^2 - 2au + 1,\ u^2 + 1\rangle}$

(i) Arc colorings

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

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

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

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

$$a_1 = \begin{pmatrix} a \\ \frac{1}{2}a^3u - \frac{3}{2}au + \cdots - \frac{1}{2}a + \frac{3}{2} \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} a^2 \\ -\frac{1}{2}a^3u + \frac{3}{2}au + \cdots + \frac{1}{2}a - \frac{3}{2} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -a^3 + a \\ 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} a^3u - a^2 - 2au + 1 \\ -\frac{1}{2}a^3u + \frac{3}{2}au + \cdots + \frac{3}{2}a - \frac{3}{2} \end{pmatrix}$$

$$a_2 = \begin{pmatrix} a \\ \frac{1}{2}a^3u - \frac{3}{2}au + \cdots - \frac{3}{2}a + \frac{3}{2} \end{pmatrix}$$

$$a_5 = \begin{pmatrix} a^3u - au \\ -u \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4a^3u + 4a^2 + 12au - 8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^4+5y^3+7y^2+2y+1)^2$
c_2, c_5	$(y^4-y^3+3y^2-2y+1)^2$
c_3, c_4, c_9 c_{11}	$(y+1)^8$
c_6, c_7, c_{12}	$(y^4-5y^3+7y^2-2y+1)^2$
c_8, c_{10}	$(y-1)^8$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.000000I$ $a = 0.506844 - 0.395123I$ $b = 0.620943 + 0.162823I$	$-3.50087 - 1.41510I$	$-3.82674 + 4.90874I$
$u = 1.000000I$ $a = -0.506844 - 0.395123I$ $b = 1.23497 + 0.98948I$	$-3.50087 + 1.41510I$	$-3.82674 - 4.90874I$
$u = 1.000000I$ $a = 1.55249 - 0.10488I$ $b = 0.391114 + 0.016070I$	$3.50087 - 3.16396I$	$-0.17326 + 2.56480I$
$u = 1.000000I$ $a = -1.55249 - 0.10488I$ $b = -1.74703 + 0.33163I$	$3.50087 + 3.16396I$	$-0.17326 - 2.56480I$
$u = -1.000000I$ $a = 0.506844 + 0.395123I$ $b = 0.620943 - 0.162823I$	$-3.50087 + 1.41510I$	$-3.82674 - 4.90874I$
$u = -1.000000I$ $a = -0.506844 + 0.395123I$ $b = 1.23497 - 0.98948I$	$-3.50087 - 1.41510I$	$-3.82674 + 4.90874I$
$u = -1.000000I$ $a = 1.55249 + 0.10488I$ $b = 0.391114 - 0.016070I$	$3.50087 + 3.16396I$	$-0.17326 - 2.56480I$
$u = -1.000000I$ $a = -1.55249 + 0.10488I$ $b = -1.74703 - 0.33163I$	$3.50087 - 3.16396I$	$-0.17326 + 2.56480I$

V. $I_5^u = \langle -a^2 + 4b - 3a,\ a^3 + 2a^2 + a + 4,\ u + 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.00000$ $a=\quad 0.157298+1.305150I$ $b=-0.301696+1.081510I$	1.64493	6.00000
$u=-1.00000$ $a=\quad 0.157298-1.305150I$ $b=-0.301696-1.081510I$	1.64493	6.00000
$u=-1.00000$ $a=-2.31460$ $b=-0.396608$	1.64493	6.00000

VI. $I_6^u = \langle u^3 - u^2 + 2b - u + 1,\ u^3 + a,\ u^4 + 1 \rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^3 \\ -\frac{1}{2}u^3 + \frac{1}{2}u^2 + \frac{1}{2}u - \frac{1}{2} \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^3 + u^2 + 1 \\ \frac{1}{2}u^3 + \frac{1}{2}u^2 - \frac{1}{2}u + \frac{1}{2} \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^3 \\ \frac{1}{2}u^3 - \frac{1}{2}u^2 - \frac{1}{2}u + \frac{1}{2} \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^3 \\ -\frac{1}{2}u^3 + \frac{1}{2}u^2 + \frac{3}{2}u - \frac{1}{2} \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^2 \\ -1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_{12}	$(u-1)^4$
c_3, c_4, c_9 c_{11}	u^4+1
c_5, c_6, c_7	$(u+1)^4$
c_8, c_{10}	$(u^2+1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5 c_6, c_7, c_{12}	$(y-1)^4$
c_3, c_4, c_9 c_{11}	$(y^2+1)^2$
c_8, c_{10}	$(y+1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.707107 + 0.707107I$ $a = 0.707107 - 0.707107I$ $b = 0.207107 + 0.500000I$	1.64493	4.00000
$u = 0.707107 - 0.707107I$ $a = 0.707107 + 0.707107I$ $b = 0.207107 - 0.500000I$	1.64493	4.00000
$u = -0.707107 + 0.707107I$ $a = -0.707107 - 0.707107I$ $b = -1.207110 - 0.500000I$	1.64493	4.00000
$u = -0.707107 - 0.707107I$ $a = -0.707107 + 0.707107I$ $b = -1.207110 + 0.500000I$	1.64493	4.00000

VII. $I_1^v = \langle a,\ b+1,\ v-1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

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

VIII. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^9(u^3+2u^2+u+4)(u^4-u^3+3u^2-2u+1)^2$ $\cdot(u^7-2u^6+15u^5-35u^4+11u^3+20u^2+13u+9)^2$ $\cdot(u^{15}+18u^{13}+\cdots+1061u+121)$
c_2	$(u-1)^5(u+1)^4(u^3-u+2)$ $\cdot(u^7-2u^6+3u^5-u^4+5u^3+2u^2-u-3)^2(u^8-u^6+3u^4-2u^2+1)$ $\cdot(u^{15}+6u^{14}+\cdots+7u-11)$
c_3, c_4, c_9 c_{11}	$u(u-1)^3(u^2+1)^4(u^4+1)(u^4+u^2+2)(u^{14}-u^{13}+\cdots-12u+8)$ $\cdot(u^{15}+3u^{14}+\cdots-6u^2-2)$
c_5	$(u-1)^4(u+1)^5(u^3-u+2)$ $\cdot(u^7-2u^6+3u^5-u^4+5u^3+2u^2-u-3)^2(u^8-u^6+3u^4-2u^2+1)$ $\cdot(u^{15}+6u^{14}+\cdots+7u-11)$
c_6, c_7	$(u-1)^4(u+1)^5(u^3-u+2)$ $\cdot(u^7+2u^6-5u^5-9u^4+9u^3+14u^2+3u-3)^2$ $\cdot(u^8-5u^6+7u^4-2u^2+1)(u^{15}-6u^{14}+\cdots-5u-11)$
c_8, c_{10}	$u(u-1)^{11}(u^2+1)^2(u^2-u+2)^2(u^{14}+u^{13}+\cdots+784u+64)$ $\cdot(u^{15}+5u^{14}+\cdots-24u-4)$
c_{12}	$(u-1)^5(u+1)^4(u^3-u+2)$ $\cdot(u^7+2u^6-5u^5-9u^4+9u^3+14u^2+3u-3)^2$ $\cdot(u^8-5u^6+7u^4-2u^2+1)(u^{15}-6u^{14}+\cdots-5u-11)$

IX. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^9(y^3-2y^2-15y-16)(y^4+5y^3+7y^2+2y+1)^2$ $\cdot(y^7+26y^6+107y^5-789y^4+1947y^3+516y^2-191y-81)^2$ $\cdot(y^{15}+36y^{14}+\cdots+486357y-14641)$
c_2, c_5	$(y-1)^9(y^3-2y^2+y-4)(y^4-y^3+3y^2-2y+1)^2$ $\cdot(y^7+2y^6+15y^5+35y^4+11y^3-20y^2+13y-9)^2$ $\cdot(y^{15}+18y^{13}+\cdots+1061y-121)$
c_3, c_4, c_9 c_{11}	$y(y-1)^3(y+1)^8(y^2+1)^2(y^2+y+2)^2$ $\cdot(y^{14}+y^{13}+\cdots+784y+64)(y^{15}+5y^{14}+\cdots-24y-4)$
c_6, c_7, c_{12}	$(y-1)^9(y^3-2y^2+y-4)(y^4-5y^3+7y^2-2y+1)^2$ $\cdot(y^7-14y^6+79y^5-221y^4+315y^3-196y^2+93y-9)^2$ $\cdot(y^{15}-24y^{14}+\cdots-459y-121)$
c_8, c_{10}	$y(y-1)^{11}(y+1)^4(y^2+3y+4)^2$ $\cdot(y^{14}+21y^{13}+\cdots-209664y+4096)(y^{15}+45y^{14}+\cdots+768y-16)$