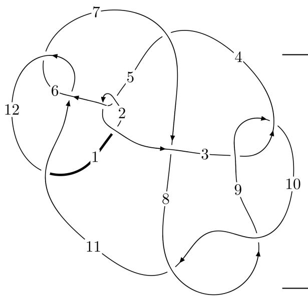
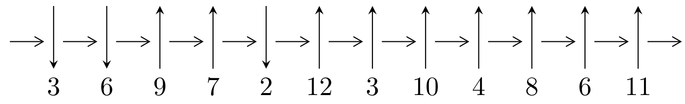
$12n_{0379}$ ($K12n_{0379}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -u^{30} - 3u^{29} + \cdots + 4b + 4,\ 3u^{30} - 4u^{29} + \cdots + 4a + 2,\ u^{31} - 2u^{30} + \cdots + 4u - 2\rangle$$
$$I_2^u = \langle u^3 - u^2 + b + 1,\ -u^3 + 2a + u - 2,\ u^4 - u^2 + 2\rangle$$
$$I_3^u = \langle a^2u^2 + a^2u - u^2a + au + b + 2a,\ 2a^2u^2 + a^3 + 2a^2u + au + a + u,\ u^3 + u^2 - 1\rangle$$
$$I_4^u = \langle b,\ a + 1,\ u + 1\rangle$$
$$I_5^u = \langle b - 1,\ a + 2,\ u - 1\rangle$$
$$I_6^u = \langle b + 1,\ a,\ u + 1\rangle$$
$$I_7^u = \langle b - 1,\ a + 1,\ u - 1\rangle$$
$$I_8^u = \langle -u^2 + b + u - 1,\ -u^3 + u^2 + a,\ u^4 + 1\rangle$$

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

* 9 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 53 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.

$$I_1^u = \langle -u^{30} - 3u^{29} + \cdots + 4b + 4,\ 3u^{30} - 4u^{29} + \cdots + 4a + 2,\ u^{31} - 2u^{30} + \cdots + 4u - 2 \rangle$$

(i) Arc colorings

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

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

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

$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -\frac{3}{4}u^{30} + u^{29} + \cdots + 3u - \frac{1}{2} \\ \frac{1}{4}u^{30} + \frac{3}{4}u^{29} + \cdots + \frac{1}{2}u - 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{1}{4}u^{30} - u^{29} + \cdots - 2u + \frac{1}{2} \\ -\frac{3}{2}u^{30} + 2u^{29} + \cdots + 5u - 2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{1}{4}u^{28} - \frac{5}{4}u^{26} + \cdots - \frac{1}{2}u - \frac{1}{2} \\ -\frac{1}{4}u^{28} + u^{26} + \cdots + \frac{1}{2}u^2 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^{13} - 2u^{11} + 5u^9 - 6u^7 + 6u^5 - 4u^3 + u \\ u^{15} - 3u^{13} + 6u^{11} - 9u^9 + 8u^7 - 6u^5 + 2u^3 + u \end{pmatrix}$$

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

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

$$a_{12} = \begin{pmatrix} -\frac{1}{4}u^{30} + u^{29} + \cdots + 3u - \frac{1}{2} \\ \frac{1}{2}u^{30} - u^{29} + \cdots - \frac{5}{2}u + 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^6 + u^4 - 2u^2 + 1 \\ -u^8 + 2u^6 - 2u^4 + 2u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= -2u^{30} + 4u^{29} + 8u^{28} - 16u^{27} - 26u^{26} + 56u^{25} + 58u^{24} - 122u^{23} - 108u^{22} + 230u^{21} + 168u^{20} - 328u^{19} - 224u^{18} + 400u^{17} + 252u^{16} - 370u^{15} - 246u^{14} + 270u^{13} + 190u^{12} - 98u^{11} - 122u^{10} - 12u^9 + 54u^8 + 90u^7 + 8u^6 - 58u^5 - 6u^4 + 38u^3 + 16u^2 + 10u$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{31} + 49u^{30} + \cdots - 15231u + 529$
c_2, c_5	$u^{31} + 3u^{30} + \cdots + 77u - 23$
c_3, c_9	$u^{31} - 2u^{30} + \cdots + 4u - 2$
c_4	$u^{31} + 7u^{30} + \cdots + 69324u - 24982$
c_6, c_{11}	$u^{31} - 3u^{30} + \cdots + 9u - 9$
c_7	$u^{31} + 2u^{30} + \cdots - 1028u - 3866$
c_8, c_{10}	$u^{31} - 8u^{30} + \cdots + 76u^2 - 4$
c_{12}	$u^{31} - u^{30} + \cdots - 783u - 81$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{31} - 121y^{30} + \cdots + 137554745y - 279841$
c_2, c_5	$y^{31} - 49y^{30} + \cdots - 15231y - 529$
c_3, c_9	$y^{31} - 8y^{30} + \cdots + 76y^2 - 4$
c_4	$y^{31} + 61y^{30} + \cdots + 2635081032y - 624100324$
c_6, c_{11}	$y^{31} - y^{30} + \cdots - 783y - 81$
c_7	$y^{31} + 16y^{30} + \cdots + 26974448y - 14945956$
c_8, c_{10}	$y^{31} + 28y^{30} + \cdots + 608y - 16$
c_{12}	$y^{31} + 71y^{30} + \cdots + 24057y - 6561$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.663469 + 0.751213I$ $a = 0.351205 + 0.923577I$ $b = 1.105880 - 0.396734I$	$-3.68245 + 0.08795I$	$-0.712597 + 0.455533I$
$u = -0.663469 - 0.751213I$ $a = 0.351205 - 0.923577I$ $b = 1.105880 + 0.396734I$	$-3.68245 - 0.08795I$	$-0.712597 - 0.455533I$
$u = 0.728867 + 0.652617I$ $a = -0.139459 - 0.952361I$ $b = 1.33700 + 0.85927I$	$0.259635 - 0.106495I$	$9.87430 + 1.04296I$
$u = 0.728867 - 0.652617I$ $a = -0.139459 + 0.952361I$ $b = 1.33700 - 0.85927I$	$0.259635 + 0.106495I$	$9.87430 - 1.04296I$
$u = -0.935170 + 0.222618I$ $a = 0.574653 + 1.214550I$ $b = -0.079692 - 1.257260I$	$1.12870 - 3.87074I$	$8.86243 + 7.64140I$
$u = -0.935170 - 0.222618I$ $a = 0.574653 - 1.214550I$ $b = -0.079692 + 1.257260I$	$1.12870 + 3.87074I$	$8.86243 - 7.64140I$
$u = -1.068290 + 0.325898I$ $a = -1.043310 - 0.044790I$ $b = 1.40274 + 1.11223I$	$-7.45526 + 0.17674I$	$5.77037 + 1.13403I$
$u = -1.068290 - 0.325898I$ $a = -1.043310 + 0.044790I$ $b = 1.40274 - 1.11223I$	$-7.45526 - 0.17674I$	$5.77037 - 1.13403I$
$u = 1.095710 + 0.242215I$ $a = 1.26095 - 0.95798I$ $b = -0.735307 + 1.042830I$	$-6.91990 + 7.21748I$	$6.74465 - 5.27304I$
$u = 1.095710 - 0.242215I$ $a = 1.26095 + 0.95798I$ $b = -0.735307 - 1.042830I$	$-6.91990 - 7.21748I$	$6.74465 + 5.27304I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.781352 + 0.817214I$ $a = -1.37993 + 0.39344I$ $b = -0.10938 - 2.09740I$	$-5.48154 - 2.37155I$	$1.17244 + 2.28435I$
$u = 0.781352 - 0.817214I$ $a = -1.37993 - 0.39344I$ $b = -0.10938 + 2.09740I$	$-5.48154 + 2.37155I$	$1.17244 - 2.28435I$
$u = -0.720251 + 0.881314I$ $a = -1.63175 - 1.06162I$ $b = -0.47498 + 2.37274I$	$-14.4731 + 7.0018I$	$1.25090 - 2.32641I$
$u = -0.720251 - 0.881314I$ $a = -1.63175 + 1.06162I$ $b = -0.47498 - 2.37274I$	$-14.4731 - 7.0018I$	$1.25090 + 2.32641I$
$u = 0.963769 + 0.665989I$ $a = 1.008580 + 0.085082I$ $b = -0.50239 + 1.42848I$	$0.98115 + 5.27885I$	$11.70308 - 5.96602I$
$u = 0.963769 - 0.665989I$ $a = 1.008580 - 0.085082I$ $b = -0.50239 - 1.42848I$	$0.98115 - 5.27885I$	$11.70308 + 5.96602I$
$u = 0.773274 + 0.881332I$ $a = 0.987775 - 0.615547I$ $b = 0.713092 + 0.884815I$	$-15.4700 + 1.2037I$	$0.44734 - 1.88848I$
$u = 0.773274 - 0.881332I$ $a = 0.987775 + 0.615547I$ $b = 0.713092 - 0.884815I$	$-15.4700 - 1.2037I$	$0.44734 + 1.88848I$
$u = -1.001840 + 0.678352I$ $a = 0.875242 + 0.190119I$ $b = -0.99047 - 1.70764I$	$-2.66141 - 5.53232I$	$1.04333 + 5.08829I$
$u = -1.001840 - 0.678352I$ $a = 0.875242 - 0.190119I$ $b = -0.99047 + 1.70764I$	$-2.66141 + 5.53232I$	$1.04333 - 5.08829I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.055960 + 0.767487I$ $a = 0.29212 - 2.05873I$ $b = -0.610484 + 0.959338I$	$-10.76740 - 3.89804I$	$0.78804 + 2.34042I$
$u = -0.055960 - 0.767487I$ $a = 0.29212 + 2.05873I$ $b = -0.610484 - 0.959338I$	$-10.76740 + 3.89804I$	$0.78804 - 2.34042I$
$u = 0.970212 + 0.761534I$ $a = -0.416925 + 1.343310I$ $b = -1.61267 - 2.44399I$	$-4.90025 + 8.29290I$	$2.65243 - 7.48178I$
$u = 0.970212 - 0.761534I$ $a = -0.416925 - 1.343310I$ $b = -1.61267 + 2.44399I$	$-4.90025 - 8.29290I$	$2.65243 + 7.48178I$
$u = 1.002290 + 0.793385I$ $a = 0.462370 - 0.838920I$ $b = -0.06322 + 2.17897I$	$-14.7566 + 5.0057I$	$1.43866 - 2.92043I$
$u = 1.002290 - 0.793385I$ $a = 0.462370 + 0.838920I$ $b = -0.06322 - 2.17897I$	$-14.7566 - 5.0057I$	$1.43866 + 2.92043I$
$u = -1.028320 + 0.765921I$ $a = -0.95391 - 1.51050I$ $b = -0.93688 + 3.31151I$	$-13.5166 - 13.1152I$	$2.72835 + 7.05424I$
$u = -1.028320 - 0.765921I$ $a = -0.95391 + 1.51050I$ $b = -0.93688 - 3.31151I$	$-13.5166 + 13.1152I$	$2.72835 - 7.05424I$
$u = -0.082878 + 0.511912I$ $a = 1.27490 + 1.44891I$ $b = -0.387924 - 0.478500I$	$-1.45714 + 1.31342I$	$-0.58494 - 2.75883I$
$u = -0.082878 - 0.511912I$ $a = 1.27490 - 1.44891I$ $b = -0.387924 + 0.478500I$	$-1.45714 - 1.31342I$	$-0.58494 + 2.75883I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.481415$ $a = -0.0450372$ $b = 0.889366$	0.952264	11.6420

II. $\boldsymbol{I_2^u = \langle u^3 - u^2 + b + 1,\ -u^3 + 2a + u - 2,\ u^4 - u^2 + 2\rangle}$

(i) Arc colorings

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

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

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

$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

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

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

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

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

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

$$a_{11} = \begin{pmatrix} -1 \\ -u^2 + 2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} \frac{1}{2}u^3 - \frac{1}{2}u \\ -u^3 + 1 \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^2 + 8$

(iv) u-Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.978318 + 0.676097I$ $a = 0.308224 + 0.478073I$ $b = -0.094767 - 0.309366I$	$-0.82247 + 5.33349I$	$6.00000 - 5.29150I$
$u = 0.978318 - 0.676097I$ $a = 0.308224 - 0.478073I$ $b = -0.094767 + 0.309366I$	$-0.82247 - 5.33349I$	$6.00000 + 5.29150I$
$u = -0.978318 + 0.676097I$ $a = 1.69178 + 0.47807I$ $b = -0.90523 - 2.95512I$	$-0.82247 - 5.33349I$	$6.00000 + 5.29150I$
$u = -0.978318 - 0.676097I$ $a = 1.69178 - 0.47807I$ $b = -0.90523 + 2.95512I$	$-0.82247 + 5.33349I$	$6.00000 - 5.29150I$

III.

$\boldsymbol{I_3^u = \langle a^2u^2+a^2u-u^2a+au+b+2a,\ 2a^2u^2+a^3+2a^2u+au+a+u,\ u^3+u^2-1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

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

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^9+6u^8+15u^7+17u^6+3u^5-12u^4-9u^3+u^2+2u+1$
c_2, c_5, c_6 c_{11}	$u^9-3u^7+u^6+3u^5-2u^4+u^3+u^2-2u+1$
c_3, c_9	$(u^3+u^2-1)^3$
c_4	u^9
c_7, c_8, c_{10}	$(u^3-u^2+2u-1)^3$
c_{12}	$u^9-6u^8+15u^7-17u^6+3u^5+12u^4-9u^3-u^2+2u-1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{12}	$y^9 - 6y^8 + 27y^7 - 73y^6 + 139y^5 - 184y^4 + 83y^3 - 13y^2 + 2y - 1$
c_2, c_5, c_6 c_{11}	$y^9 - 6y^8 + 15y^7 - 17y^6 + 3y^5 + 12y^4 - 9y^3 - y^2 + 2y - 1$
c_3, c_9	$(y^3 - y^2 + 2y - 1)^3$
c_4	y^9
c_7, c_8, c_{10}	$(y^3 + 3y^2 + 2y - 1)^3$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.877439 + 0.744862I$ $a = 0.214566 + 1.359580I$ $b = 1.07324 - 2.30110I$	$-3.02413 - 2.82812I$	$2.49024 + 2.97945I$
$u = -0.877439 + 0.744862I$ $a = -0.356972 - 0.437449I$ $b = -0.79165 + 1.30040I$	$-3.02413 - 2.82812I$	$2.49024 + 2.97945I$
$u = -0.877439 + 0.744862I$ $a = 1.46712 + 0.20243I$ $b = 0.14857 - 1.61358I$	$-3.02413 - 2.82812I$	$2.49024 + 2.97945I$
$u = -0.877439 - 0.744862I$ $a = 0.214566 - 1.359580I$ $b = 1.07324 + 2.30110I$	$-3.02413 + 2.82812I$	$2.49024 - 2.97945I$
$u = -0.877439 - 0.744862I$ $a = -0.356972 + 0.437449I$ $b = -0.79165 - 1.30040I$	$-3.02413 + 2.82812I$	$2.49024 - 2.97945I$
$u = -0.877439 - 0.744862I$ $a = 1.46712 - 0.20243I$ $b = 0.14857 + 1.61358I$	$-3.02413 + 2.82812I$	$2.49024 - 2.97945I$
$u = 0.754878$ $a = -0.351052 + 0.514208I$ $b = 0.954075 - 0.645303I$	1.11345	9.01950
$u = 0.754878$ $a = -0.351052 - 0.514208I$ $b = 0.954075 + 0.645303I$	1.11345	9.01950
$u = 0.754878$ $a = -1.94733$ $b = -0.768470$	1.11345	9.01950

IV. $I_4^u = \langle b,\ a+1,\ u+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 18$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = -1.00000$ $b = \quad 0$	4.93480	18.0000

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 1.00000$ $a = -2.00000$ $b = \quad 1.00000$	3.28987	12.0000

VI. $I_6^u = \langle b+1,\ a,\ u+1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = 0$ $b = -1.00000$	3.28987	12.0000

VII. $I^u_7 = \langle b-1,\ a+1,\ u-1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_7^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -1.00000$ $b = 1.00000$	1.64493	6.00000

VIII. $\boldsymbol{I_8^u = \langle -u^2 + b + u - 1,\ -u^3 + u^2 + a,\ u^4 + 1\rangle}$

(i) Arc colorings

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

(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_{11} c_{12}	$(u-1)^4$
c_3, c_4, c_7 c_9	u^4+1
c_5, c_6	$(u+1)^4$
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_{11}, c_{12}	$(y-1)^4$
c_3, c_4, c_7 c_9	$(y^2+1)^2$
c_8, c_{10}	$(y+1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_8^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.707107 + 0.707107I$ $a = -0.707107 - 0.292893I$ $b = 0.292893 + 0.292893I$	-1.64493	4.00000
$u = 0.707107 - 0.707107I$ $a = -0.707107 + 0.292893I$ $b = 0.292893 - 0.292893I$	-1.64493	4.00000
$u = -0.707107 + 0.707107I$ $a = 0.70711 + 1.70711I$ $b = 1.70711 - 1.70711I$	-1.64493	4.00000
$u = -0.707107 - 0.707107I$ $a = 0.70711 - 1.70711I$ $b = 1.70711 + 1.70711I$	-1.64493	4.00000

IX. $\boldsymbol{I_1^v = \langle a,\ b-1,\ v-1\rangle}$

(i) Arc colorings

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

(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_{11} c_{12}	$u - 1$
c_3, c_4, c_7 c_8, c_9, c_{10}	u
c_5, c_6	$u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5 c_6, c_{11}, c_{12}	$y-1$
c_3, c_4, c_7 c_8, c_9, c_{10}	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	0	0
$b =$	1.00000		

X. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u(u-1)^{11}(u+1)$ $\cdot\,(u^9+6u^8+15u^7+17u^6+3u^5-12u^4-9u^3+u^2+2u+1)$ $\cdot\,(u^{31}+49u^{30}+\cdots-15231u+529)$
c_2	$u(u-1)^6(u+1)^6(u^9-3u^7+u^6+3u^5-2u^4+u^3+u^2-2u+1)$ $\cdot\,(u^{31}+3u^{30}+\cdots+77u-23)$
c_3, c_9	$u(u-1)^2(u+1)^2(u^3+u^2-1)^3(u^4+1)(u^4-u^2+2)$ $\cdot\,(u^{31}-2u^{30}+\cdots+4u-2)$
c_4	$u^{10}(u-1)^2(u+1)^2(u^4+1)(u^4-u^2+2)$ $\cdot\,(u^{31}+7u^{30}+\cdots+69324u-24982)$
c_5	$u(u-1)^7(u+1)^5(u^9-3u^7+u^6+3u^5-2u^4+u^3+u^2-2u+1)$ $\cdot\,(u^{31}+3u^{30}+\cdots+77u-23)$
c_6	$u(u-1)^6(u+1)^6(u^9-3u^7+u^6+3u^5-2u^4+u^3+u^2-2u+1)$ $\cdot\,(u^{31}-3u^{30}+\cdots+9u-9)$
c_7	$u(u-1)^2(u+1)^2(u^3-u^2+2u-1)^3(u^4+1)(u^4-u^2+2)$ $\cdot\,(u^{31}+2u^{30}+\cdots-1028u-3866)$
c_8	$u(u-1)^2(u+1)^2(u^2+1)^2(u^2+u+2)^2(u^3-u^2+2u-1)^3$ $\cdot\,(u^{31}-8u^{30}+\cdots+76u^2-4)$
c_{10}	$u(u-1)^4(u^2+1)^2(u^2-u+2)^2(u^3-u^2+2u-1)^3$ $\cdot\,(u^{31}-8u^{30}+\cdots+76u^2-4)$
c_{11}	$u(u-1)^5(u+1)^7(u^9-3u^7+u^6+3u^5-2u^4+u^3+u^2-2u+1)$ $\cdot\,(u^{31}-3u^{30}+\cdots+9u-9)$
c_{12}	$u(u-1)^{12}(u^9-6u^8+\cdots+2u-1)$ $\cdot\,(u^{31}-u^{30}+\cdots-783u-81)$

XI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y(y-1)^{12}$ $\cdot(y^9-6y^8+27y^7-73y^6+139y^5-184y^4+83y^3-13y^2+2y-1)$ $\cdot(y^{31}-121y^{30}+\cdots+137554745y-279841)$
c_2, c_5	$y(y-1)^{12}(y^9-6y^8+\cdots+2y-1)$ $\cdot(y^{31}-49y^{30}+\cdots-15231y-529)$
c_3, c_9	$y(y-1)^4(y^2+1)^2(y^2-y+2)^2(y^3-y^2+2y-1)^3$ $\cdot(y^{31}-8y^{30}+\cdots+76y^2-4)$
c_4	$y^{10}(y-1)^4(y^2+1)^2(y^2-y+2)^2$ $\cdot(y^{31}+61y^{30}+\cdots+2635081032y-624100324)$
c_6, c_{11}	$y(y-1)^{12}(y^9-6y^8+\cdots+2y-1)$ $\cdot(y^{31}-y^{30}+\cdots-783y-81)$
c_7	$y(y-1)^4(y^2+1)^2(y^2-y+2)^2(y^3+3y^2+2y-1)^3$ $\cdot(y^{31}+16y^{30}+\cdots+26974448y-14945956)$
c_8, c_{10}	$y(y-1)^4(y+1)^4(y^2+3y+4)^2(y^3+3y^2+2y-1)^3$ $\cdot(y^{31}+28y^{30}+\cdots+608y-16)$
c_{12}	$y(y-1)^{12}$ $\cdot(y^9-6y^8+27y^7-73y^6+139y^5-184y^4+83y^3-13y^2+2y-1)$ $\cdot(y^{31}+71y^{30}+\cdots+24057y-6561)$