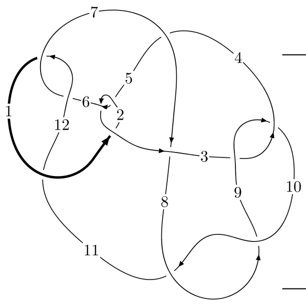
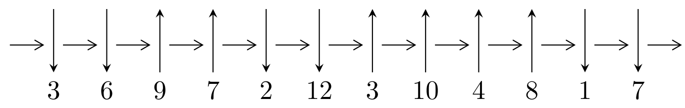
$12n_{0380}$ ($K12n_{0380}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{24} + 2u^{23} + \cdots + b - 1,\ -u^{24} - u^{23} + \cdots + 2a - 2,\ u^{25} + 3u^{24} + \cdots - 4u - 2\rangle$$
$$I_2^u = \langle -36u^{11}a + 71u^{11} + \cdots + 286a - 731,\ -2u^{11}a + 2u^{10}a + \cdots - 4a - 1,$$
$$u^{12} - 2u^{10} + u^9 + 4u^8 - u^7 - 3u^6 + 3u^5 + 3u^4 - u^3 - u^2 + 2u + 1\rangle$$
$$I_3^u = \langle b + 1,\ -u^3 + 2u^2 + 2a + u - 2,\ u^4 - u^2 + 2\rangle$$
$$I_4^u = \langle b - 1,\ a - u,\ u^4 + 1\rangle$$
$$I_5^u = \langle b,\ a + 1,\ u - 1\rangle$$
$$I_6^u = \langle b + 1,\ a - 2,\ u - 1\rangle$$
$$I_7^u = \langle b + 1,\ a - 3,\ u - 1\rangle$$
$$I_8^u = \langle b + 1,\ a - 1,\ u + 1\rangle$$

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

* 9 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 62 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.

$$\boldsymbol{I_1^u = \langle u^{24}+2u^{23}+\cdots+b-1,\ -u^{24}-u^{23}+\cdots+2a-2,\ u^{25}+3u^{24}+\cdots-4u-2\rangle}$$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix}0\\u\end{pmatrix}$$

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

$$a_6 = \begin{pmatrix}\frac{1}{2}u^{24}+\frac{1}{2}u^{23}+\cdots+u^2+1\\-u^{24}-2u^{23}+\cdots+2u+1\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}u\\-u^3+u\end{pmatrix}$$

$$a_2 = \begin{pmatrix}\frac{1}{2}u^{24}+\frac{5}{2}u^{23}+\cdots-3u-2\\-u^{23}-u^{22}+\cdots+2u+1\end{pmatrix}$$

$$a_1 = \begin{pmatrix}\frac{1}{2}u^{24}+\frac{3}{2}u^{23}+\cdots-u-1\\-u^{23}-u^{22}+\cdots+2u+1\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-u^{12}+u^{10}-3u^8+2u^6-2u^4+u^2+1\\u^{12}-2u^{10}+4u^8-4u^6+3u^4-2u^2\end{pmatrix}$$

$$a_8 = \begin{pmatrix}-u^3\\u^5-u^3+u\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}u^5+u\\-u^7+u^5-2u^3+u\end{pmatrix}$$

$$a_7 = \begin{pmatrix}-u^5-u\\u^5-u^3+u\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}-\frac{1}{2}u^{24}-\frac{5}{2}u^{23}+\cdots+4u+3\\u^{23}+u^{22}+\cdots-u-1\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= -2u^{24}+10u^{22}+6u^{21}-30u^{20}-24u^{19}+54u^{18}+64u^{17}-72u^{16}-112u^{15}+54u^{14}+150u^{13}-12u^{12}-142u^{11}-42u^{10}+100u^9+66u^8-34u^7-56u^6-6u^5+22u^4+18u^3-2u-4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{11}	$u^{25} + 5u^{24} + \cdots + 11u + 1$
c_2, c_5, c_6 c_{12}	$u^{25} + u^{24} + \cdots + u - 1$
c_3, c_9	$u^{25} + 3u^{24} + \cdots - 4u - 2$
c_4	$u^{25} + 21u^{24} + \cdots + 13332u + 2962$
c_7	$u^{25} - 3u^{24} + \cdots - 92u - 26$
c_8, c_{10}	$u^{25} - 9u^{24} + \cdots - 8u - 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$y^{25} + 43y^{24} + \cdots + 11y - 1$
c_2, c_5, c_6 c_{12}	$y^{25} - 5y^{24} + \cdots + 11y - 1$
c_3, c_9	$y^{25} - 9y^{24} + \cdots - 8y - 4$
c_4	$y^{25} - 33y^{24} + \cdots - 42476552y - 8773444$
c_7	$y^{25} - 21y^{24} + \cdots - 4952y - 676$
c_8, c_{10}	$y^{25} + 15y^{24} + \cdots + 320y - 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.980316 + 0.233102I$ $a = 0.44130 + 2.47602I$ $b = -0.622808 - 0.762022I$	$2.82058 - 3.81422I$	$4.98039 + 6.61368I$
$u = -0.980316 - 0.233102I$ $a = 0.44130 - 2.47602I$ $b = -0.622808 + 0.762022I$	$2.82058 + 3.81422I$	$4.98039 - 6.61368I$
$u = -0.568077 + 0.832369I$ $a = 0.51973 - 1.50739I$ $b = -1.13721 + 0.86526I$	$4.15791 + 8.74016I$	$-1.84068 - 4.40634I$
$u = -0.568077 - 0.832369I$ $a = 0.51973 + 1.50739I$ $b = -1.13721 - 0.86526I$	$4.15791 - 8.74016I$	$-1.84068 + 4.40634I$
$u = -0.733592 + 0.747057I$ $a = 0.337972 - 0.198014I$ $b = 0.611523 + 0.222308I$	$-3.30756 - 0.71712I$	$-2.44059 + 3.90523I$
$u = -0.733592 - 0.747057I$ $a = 0.337972 + 0.198014I$ $b = 0.611523 - 0.222308I$	$-3.30756 + 0.71712I$	$-2.44059 - 3.90523I$
$u = 0.932488 + 0.483370I$ $a = 0.96761 + 1.60037I$ $b = -0.206915 - 0.805921I$	$1.59893 + 1.80276I$	$4.99535 - 2.09686I$
$u = 0.932488 - 0.483370I$ $a = 0.96761 - 1.60037I$ $b = -0.206915 + 0.805921I$	$1.59893 - 1.80276I$	$4.99535 + 2.09686I$
$u = 0.932840$ $a = 0.687051$ $b = -0.498290$	1.77401	4.83650
$u = 0.764755 + 0.774203I$ $a = 0.171446 - 0.325902I$ $b = 0.784319 + 0.533336I$	$-3.51376 - 2.47052I$	$-3.49276 + 4.45848I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.764755 - 0.774203I$ $a = 0.171446 + 0.325902I$ $b = 0.784319 - 0.533336I$	$-3.51376 + 2.47052I$	$-3.49276 - 4.45848I$
$u = -0.437237 + 0.783767I$ $a = 0.49146 + 1.67035I$ $b = -1.037150 - 0.927401I$	$4.93859 - 5.35756I$	$-1.01874 + 4.42089I$
$u = -0.437237 - 0.783767I$ $a = 0.49146 - 1.67035I$ $b = -1.037150 + 0.927401I$	$4.93859 + 5.35756I$	$-1.01874 - 4.42089I$
$u = 1.156340 + 0.047910I$ $a = -2.12651 + 3.13266I$ $b = 1.12099 - 0.93923I$	$10.42970 + 7.39157I$	$4.47957 - 4.57784I$
$u = 1.156340 - 0.047910I$ $a = -2.12651 - 3.13266I$ $b = 1.12099 + 0.93923I$	$10.42970 - 7.39157I$	$4.47957 + 4.57784I$
$u = -0.970077 + 0.698318I$ $a = 0.166009 + 0.595943I$ $b = -0.620681 + 0.170359I$	$-2.58593 - 4.79128I$	$-0.37722 + 2.00234I$
$u = -0.970077 - 0.698318I$ $a = 0.166009 - 0.595943I$ $b = -0.620681 - 0.170359I$	$-2.58593 + 4.79128I$	$-0.37722 - 2.00234I$
$u = 0.951621 + 0.731482I$ $a = -0.63483 - 1.61897I$ $b = -0.831342 + 0.569410I$	$-2.94773 + 8.15802I$	$-2.49516 - 9.64578I$
$u = 0.951621 - 0.731482I$ $a = -0.63483 + 1.61897I$ $b = -0.831342 - 0.569410I$	$-2.94773 - 8.15802I$	$-2.49516 + 9.64578I$
$u = -1.076120 + 0.616232I$ $a = -2.32949 + 1.21588I$ $b = 1.02897 - 0.98641I$	$6.80687 + 0.12880I$	$1.81794 + 0.42247I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.076120 - 0.616232I$ $a = -2.32949 - 1.21588I$ $b = 1.02897 + 0.98641I$	$6.80687 - 0.12880I$	$1.81794 - 0.42247I$
$u = -1.066850 + 0.683933I$ $a = -0.18246 - 3.26046I$ $b = 1.16937 + 0.87177I$	$5.6578 - 14.4091I$	$0.10967 + 8.76133I$
$u = -1.066850 - 0.683933I$ $a = -0.18246 + 3.26046I$ $b = 1.16937 - 0.87177I$	$5.6578 + 14.4091I$	$0.10967 - 8.76133I$
$u = 0.060646 + 0.510945I$ $a = 0.334239 + 0.498112I$ $b = 0.490067 - 0.520637I$	$-0.268317 + 1.373590I$	$-2.13600 - 4.81420I$
$u = 0.060646 - 0.510945I$ $a = 0.334239 - 0.498112I$ $b = 0.490067 + 0.520637I$	$-0.268317 - 1.373590I$	$-2.13600 + 4.81420I$

II. $\boldsymbol{I_2^u = \langle -36u^{11}a + 71u^{11} + \cdots + 286a - 731,\ -2u^{11}a + 2u^{10}a + \cdots - 4a - 1,\ u^{12} - 2u^{10} + \cdots + 2u + 1\rangle}$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} a \\ 0.0599002au^{11} - 0.118136u^{11} + \cdots - 0.475874a + 1.21631 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.118136au^{11} - 0.128120u^{11} + \cdots + 1.21631a + 1.62895 \\ 0.0682196au^{11} + 0.0599002u^{11} + \cdots - 0.153078a - 1.47587 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.0499168au^{11} - 0.0682196u^{11} + \cdots + 1.06323a + 0.153078 \\ 0.0682196au^{11} + 0.0599002u^{11} + \cdots - 0.153078a - 1.47587 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^{10} + u^9 + u^8 - u^7 - u^6 + 3u^5 + u^4 - u^3 + 2u + 2 \\ -u^9 + u^7 - u^6 - 3u^5 + u^3 - u^2 - 2u - 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^5 + u \\ -u^7 + u^5 - 2u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^5 - u \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.118136au^{11} - 0.128120u^{11} + \cdots + 1.21631a - 0.371048 \\ -1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{11} - 8u^9 + 4u^8 + 12u^7 - 4u^6 - 8u^5 + 8u^4 + 4u^3 - 4u^2 - 4u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{11}	$u^{24} + 8u^{23} + \cdots + 268u + 49$
c_2, c_5, c_6 c_{12}	$u^{24} + 2u^{23} + \cdots + 4u - 7$
c_3, c_9	$(u^{12} - 2u^{10} + u^9 + 4u^8 - u^7 - 3u^6 + 3u^5 + 3u^4 - u^3 - u^2 + 2u + 1)^2$
c_4	$(u^{12} - 8u^{11} + \cdots - 48u - 23)^2$
c_7	$(u^{12} + 2u^{11} + \cdots + 4u + 1)^2$
c_8, c_{10}	$(u^{12} - 4u^{11} + \cdots - 6u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$y^{24} + 16y^{23} + \cdots + 54988y + 2401$
c_2, c_5, c_6 c_{12}	$y^{24} - 8y^{23} + \cdots - 268y + 49$
c_3, c_9	$(y^{12} - 4y^{11} + \cdots - 6y + 1)^2$
c_4	$(y^{12} - 28y^{11} + \cdots - 9802y + 529)^2$
c_7	$(y^{12} - 16y^{11} + \cdots - 6y + 1)^2$
c_8, c_{10}	$(y^{12} + 8y^{11} + \cdots - 14y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.511432 + 0.812623I$ $a = 0.67786 + 1.48575I$ $b = -0.900728 - 1.001250I$	$5.38423 - 1.70959I$	$-0.128193 + 0.167200I$
$u = 0.511432 + 0.812623I$ $a = 0.55283 - 1.54744I$ $b = -0.756837 + 1.060930I$	$5.38423 - 1.70959I$	$-0.128193 + 0.167200I$
$u = 0.511432 - 0.812623I$ $a = 0.67786 - 1.48575I$ $b = -0.900728 + 1.001250I$	$5.38423 + 1.70959I$	$-0.128193 - 0.167200I$
$u = 0.511432 - 0.812623I$ $a = 0.55283 + 1.54744I$ $b = -0.756837 - 1.060930I$	$5.38423 + 1.70959I$	$-0.128193 - 0.167200I$
$u = 0.850204 + 0.630914I$ $a = -0.132727 - 0.669979I$ $b = 1.145980 + 0.247522I$	$-5.05906 + 2.46907I$	$-5.52253 - 3.95252I$
$u = 0.850204 + 0.630914I$ $a = 0.07414 - 2.86500I$ $b = -1.068390 + 0.305673I$	$-5.05906 + 2.46907I$	$-5.52253 - 3.95252I$
$u = 0.850204 - 0.630914I$ $a = -0.132727 + 0.669979I$ $b = 1.145980 - 0.247522I$	$-5.05906 - 2.46907I$	$-5.52253 + 3.95252I$
$u = 0.850204 - 0.630914I$ $a = 0.07414 + 2.86500I$ $b = -1.068390 - 0.305673I$	$-5.05906 - 2.46907I$	$-5.52253 + 3.95252I$
$u = -0.635020 + 0.640255I$ $a = -0.226456 + 0.011257I$ $b = 1.204970 - 0.052489I$	$-3.08210 + 0.49850I$	$-1.36863 - 1.38008I$
$u = -0.635020 + 0.640255I$ $a = 1.55856 - 1.03377I$ $b = -0.457992 + 0.354536I$	$-3.08210 + 0.49850I$	$-1.36863 - 1.38008I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.635020-0.640255I$ $a=-0.226456-0.011257I$ $b=1.204970+0.052489I$	$-3.08210-0.49850I$	$-1.36863+1.38008I$
$u=-0.635020-0.640255I$ $a=1.55856+1.03377I$ $b=-0.457992-0.354536I$	$-3.08210-0.49850I$	$-1.36863+1.38008I$
$u=-1.16193$ $a=-1.91107+3.18977I$ $b=0.855561-1.093600I$	11.2998	5.66710
$u=-1.16193$ $a=-1.91107-3.18977I$ $b=0.855561+1.093600I$	11.2998	5.66710
$u=-0.985497+0.634576I$ $a=-0.67437-1.64764I$ $b=0.301152+0.483288I$	$-2.05779-5.52285I$	$0.56374+6.48307I$
$u=-0.985497+0.634576I$ $a=0.79418+1.81824I$ $b=-1.207840-0.138399I$	$-2.05779-5.52285I$	$0.56374+6.48307I$
$u=-0.985497-0.634576I$ $a=-0.67437+1.64764I$ $b=0.301152-0.483288I$	$-2.05779+5.52285I$	$0.56374-6.48307I$
$u=-0.985497-0.634576I$ $a=0.79418-1.81824I$ $b=-1.207840+0.138399I$	$-2.05779+5.52285I$	$0.56374-6.48307I$
$u=1.075030+0.655125I$ $a=-2.21955-1.41327I$ $b=0.739507+1.114900I$	$7.05914+7.20360I$	$2.08749-4.71657I$
$u=1.075030+0.655125I$ $a=-0.12063+3.16354I$ $b=0.949962-1.026010I$	$7.05914+7.20360I$	$2.08749-4.71657I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.075030 - 0.655125I$ $a = -2.21955 + 1.41327I$ $b = 0.739507 - 1.114900I$	$7.05914 - 7.20360I$	$2.08749 + 4.71657I$
$u = 1.075030 - 0.655125I$ $a = -0.12063 - 3.16354I$ $b = 0.949962 + 1.026010I$	$7.05914 - 7.20360I$	$2.08749 + 4.71657I$
$u = -0.470358$ $a = -0.00729607$ $b = 1.13611$	-2.62918	3.06920
$u = -0.470358$ $a = 4.26177$ $b = -0.746787$	-2.62918	3.06920

III. $\boldsymbol{I_3^u = \langle b+1,\ -u^3+2u^2+2a+u-2,\ u^4-u^2+2\rangle}$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

$$a_{10} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

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

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

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

$$a_8 = \begin{pmatrix} -u^3 \\ -u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^3 - u \\ u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^3 + u \\ -u \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_{11} c_{12}	$(u-1)^4$
c_2, c_6	$(u+1)^4$
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_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.978318 + 0.676097I$ $a = -0.191776 - 0.844803I$ $b = -1.00000$	$-4.11234 + 5.33349I$	$-6.00000 - 5.29150I$
$u = 0.978318 - 0.676097I$ $a = -0.191776 + 0.844803I$ $b = -1.00000$	$-4.11234 - 5.33349I$	$-6.00000 + 5.29150I$
$u = -0.978318 + 0.676097I$ $a = 1.19178 + 1.80095I$ $b = -1.00000$	$-4.11234 - 5.33349I$	$-6.00000 + 5.29150I$
$u = -0.978318 - 0.676097I$ $a = 1.19178 - 1.80095I$ $b = -1.00000$	$-4.11234 + 5.33349I$	$-6.00000 - 5.29150I$

IV. $I_4^u = \langle b-1,\ a-u,\ u^4+1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -8$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_6 c_{11}	$(u-1)^4$
c_3, c_4, c_7 c_9	u^4+1
c_5, c_{12}	$(u+1)^4$
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_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.707107 + 0.707107I$ $a = 0.707107 + 0.707107I$ $b = 1.00000$	-4.93480	-8.00000
$u = 0.707107 - 0.707107I$ $a = 0.707107 - 0.707107I$ $b = 1.00000$	-4.93480	-8.00000
$u = -0.707107 + 0.707107I$ $a = -0.707107 + 0.707107I$ $b = 1.00000$	-4.93480	-8.00000
$u = -0.707107 - 0.707107I$ $a = -0.707107 - 0.707107I$ $b = 1.00000$	-4.93480	-8.00000

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

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

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

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

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

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

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

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

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

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

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

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(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_5^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -1.00000$ $b = 0$	1.64493	6.00000

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

(i) Arc colorings

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

(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_6^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \ \ 1.00000$ $a = \ \ 2.00000$ $b = -1.00000$	1.64493	6.00000

VII. $\boldsymbol{I^u_7 = \langle b+1,\ a-3,\ u-1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(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_7^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$		
$a = 3.00000$	0	0
$b = -1.00000$		

VIII. $I_8^u = \langle b+1,\ a-1,\ u+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(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_8^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$		
$a = 1.00000$	0	0
$b = -1.00000$		

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

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

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

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

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

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

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

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

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

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

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

$$a_{12} = \begin{pmatrix} -1 \\ -1 \end{pmatrix}$$

(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_6 c_{11}	$u-1$
c_3, c_4, c_7 c_8, c_9, c_{10}	u
c_5, c_{12}	$u+1$

(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
$v = -1.00000$ $a = 0$ $b = 1.00000$	-3.28987	-12.0000

X. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_{11}	$u(u-1)^{11}(u+1)(u^{24}+8u^{23}+\cdots+268u+49)$ $\cdot(u^{25}+5u^{24}+\cdots+11u+1)$
c_2, c_6	$u(u-1)^{6}(u+1)^{6}(u^{24}+2u^{23}+\cdots+4u-7)(u^{25}+u^{24}+\cdots+u-1)$
c_3, c_9	$u(u-1)^{3}(u+1)(u^{4}+1)(u^{4}-u^{2}+2)$ $\cdot(u^{12}-2u^{10}+u^{9}+4u^{8}-u^{7}-3u^{6}+3u^{5}+3u^{4}-u^{3}-u^{2}+2u+1)^{2}$ $\cdot(u^{25}+3u^{24}+\cdots-4u-2)$
c_4	$u(u-1)(u+1)^{3}(u^{4}+1)(u^{4}-u^{2}+2)(u^{12}-8u^{11}+\cdots-48u-23)^{2}$ $\cdot(u^{25}+21u^{24}+\cdots+13332u+2962)$
c_5, c_{12}	$u(u-1)^{7}(u+1)^{5}(u^{24}+2u^{23}+\cdots+4u-7)(u^{25}+u^{24}+\cdots+u-1)$
c_7	$u(u-1)^{3}(u+1)(u^{4}+1)(u^{4}-u^{2}+2)(u^{12}+2u^{11}+\cdots+4u+1)^{2}$ $\cdot(u^{25}-3u^{24}+\cdots-92u-26)$
c_8	$u(u-1)^{2}(u+1)^{2}(u^{2}+1)^{2}(u^{2}+u+2)^{2}$ $\cdot((u^{12}-4u^{11}+\cdots-6u+1)^{2})(u^{25}-9u^{24}+\cdots-8u-4)$
c_{10}	$u(u-1)^{4}(u^{2}+1)^{2}(u^{2}-u+2)^{2}(u^{12}-4u^{11}+\cdots-6u+1)^{2}$ $\cdot(u^{25}-9u^{24}+\cdots-8u-4)$

XI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$y(y-1)^{12}(y^{24}+16y^{23}+\cdots+54988y+2401)$ $\cdot(y^{25}+43y^{24}+\cdots+11y-1)$
c_2, c_5, c_6 c_{12}	$y(y-1)^{12}(y^{24}-8y^{23}+\cdots-268y+49)(y^{25}-5y^{24}+\cdots+11y-1)$
c_3, c_9	$y(y-1)^4(y^2+1)^2(y^2-y+2)^2(y^{12}-4y^{11}+\cdots-6y+1)^2$ $\cdot(y^{25}-9y^{24}+\cdots-8y-4)$
c_4	$y(y-1)^4(y^2+1)^2(y^2-y+2)^2$ $\cdot(y^{12}-28y^{11}+\cdots-9802y+529)^2$ $\cdot(y^{25}-33y^{24}+\cdots-42476552y-8773444)$
c_7	$y(y-1)^4(y^2+1)^2(y^2-y+2)^2(y^{12}-16y^{11}+\cdots-6y+1)^2$ $\cdot(y^{25}-21y^{24}+\cdots-4952y-676)$
c_8, c_{10}	$y(y-1)^4(y+1)^4(y^2+3y+4)^2(y^{12}+8y^{11}+\cdots-14y+1)^2$ $\cdot(y^{25}+15y^{24}+\cdots+320y-16)$