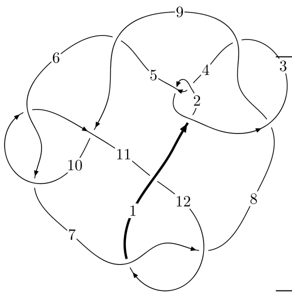
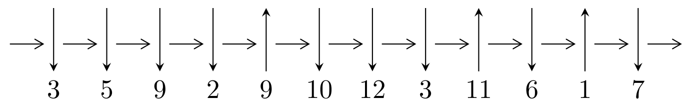
$12n_{0157}$ ($K12n_{0157}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{16} - 3u^{15} + 6u^{14} - 8u^{13} + 12u^{12} - 12u^{11} + 12u^{10} - 3u^9 - 3u^8 + 5u^7 - 9u^6 + 9u^5 - 5u^4 - 6u^3 + 8b - u -$$
$$- 3u^{16} + 5u^{15} + \cdots + 4a - 7,\ u^{17} + 5u^{15} + \cdots + 2u - 1\rangle$$
$$I_2^u = \langle -92905u^{29} + 216359u^{28} + \cdots + 130935b + 251026,$$
$$263141u^{29} - 444141u^{28} + \cdots + 130935a - 340714,\ u^{30} - 2u^{29} + \cdots - 2u + 1\rangle$$
$$I_3^u = \langle -u^3 - u^2 + 2b - 1,\ u^3 + a + u + 1,\ u^4 + u^2 + u + 1\rangle$$
$$I_4^u = \langle u^4 - u^3 + u^2 + b - u + 1,\ u^5 - u^4 + 2u^3 - 2u^2 + a + 2u - 2,\ u^6 - u^5 + 2u^4 - 2u^3 + 2u^2 - 2u + 1\rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 57 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.

$$I_1^u = \langle u^{16} - 3u^{15} + \cdots + 8b - 3,\ -3u^{16} + 5u^{15} + \cdots + 4a - 7,\ u^{17} + 5u^{15} + \cdots + 2u - 1\rangle$$

(i) Arc colorings

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

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

$$a_{10} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

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

$$a_3 = \begin{pmatrix} \frac{3}{4}u^{16} - \frac{5}{4}u^{15} + \cdots - \frac{15}{4}u + \frac{7}{4} \\ -\frac{1}{8}u^{16} + \frac{3}{8}u^{15} + \cdots + \frac{1}{8}u + \frac{3}{8} \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^5 - 2u^3 - u \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{3}{4}u^{16} - \frac{1}{4}u^{15} + \cdots - \frac{15}{4}u + \frac{7}{4} \\ -\frac{3}{8}u^{16} + \frac{1}{8}u^{15} + \cdots + \frac{3}{8}u + \frac{1}{8} \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^{15} + 4u^{13} + \cdots - 2u^2 + 2u \\ u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} \frac{3}{4}u^{16} - \frac{9}{4}u^{15} + \cdots - \frac{19}{4}u + \frac{7}{4} \\ \frac{3}{8}u^{16} + \frac{7}{8}u^{15} + \cdots - \frac{11}{8}u + \frac{7}{8} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u^{15} + 4u^{13} + \cdots - u^2 + 2u \\ -u^4 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^{16} - 4u^{14} + \cdots - 2u^2 - u \\ u^5 + u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{31}{16}u^{16} - \frac{43}{16}u^{15} - \frac{73}{8}u^{14} - \frac{29}{2}u^{13} - \frac{107}{4}u^{12} - \frac{145}{4}u^{11} - \frac{177}{4}u^{10} - \frac{851}{16}u^9 - \frac{835}{16}u^8 - \frac{763}{16}u^7 - \frac{625}{16}u^6 - \frac{487}{16}u^5 - \frac{477}{16}u^4 - \frac{127}{8}u^3 - 7u^2 - \frac{97}{16}u - \frac{115}{16}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{17}+3u^{16}+\cdots+209u+16$
c_2,c_4	$u^{17}-3u^{16}+\cdots-15u+4$
c_3,c_8	$u^{17}+3u^{16}+\cdots+144u+64$
c_5	$u^{17}-6u^{16}+\cdots+4u+4$
c_6,c_7,c_{10} c_{12}	$u^{17}+5u^{15}+\cdots+2u+1$
c_9,c_{11}	$u^{17}-10u^{16}+\cdots+2u+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{17} + 25y^{16} + \cdots + 9953y - 256$
c_2, c_4	$y^{17} - 3y^{16} + \cdots + 209y - 16$
c_3, c_8	$y^{17} + 21y^{16} + \cdots - 28416y - 4096$
c_5	$y^{17} - 20y^{16} + \cdots + 8y - 16$
c_6, c_7, c_{10} c_{12}	$y^{17} + 10y^{16} + \cdots + 2y - 1$
c_9, c_{11}	$y^{17} - 2y^{16} + \cdots + 62y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.322169 + 0.932839I$ $a = 1.62275 - 0.13510I$ $b = -0.887795 - 0.139754I$	$0.45185 - 4.10615I$	$-5.36541 + 8.40411I$
$u = 0.322169 - 0.932839I$ $a = 1.62275 + 0.13510I$ $b = -0.887795 + 0.139754I$	$0.45185 + 4.10615I$	$-5.36541 - 8.40411I$
$u = -0.942204 + 0.079923I$ $a = 0.14770 - 2.09951I$ $b = 0.10264 + 1.92963I$	$5.75170 - 3.64530I$	$-7.03668 + 2.07740I$
$u = -0.942204 - 0.079923I$ $a = 0.14770 + 2.09951I$ $b = 0.10264 - 1.92963I$	$5.75170 + 3.64530I$	$-7.03668 - 2.07740I$
$u = 0.644046 + 0.585914I$ $a = 0.110639 - 0.237693I$ $b = 0.141114 + 0.412958I$	$-1.54328 - 1.26290I$	$-4.69916 + 2.78148I$
$u = 0.644046 - 0.585914I$ $a = 0.110639 + 0.237693I$ $b = 0.141114 - 0.412958I$	$-1.54328 + 1.26290I$	$-4.69916 - 2.78148I$
$u = -0.365355 + 1.127480I$ $a = -0.001951 + 1.108840I$ $b = -0.461535 + 0.413910I$	$5.03884 + 6.08356I$	$-0.37752 - 7.44095I$
$u = -0.365355 - 1.127480I$ $a = -0.001951 - 1.108840I$ $b = -0.461535 - 0.413910I$	$5.03884 - 6.08356I$	$-0.37752 + 7.44095I$
$u = -0.603603 + 1.090260I$ $a = -0.576964 + 0.057793I$ $b = -0.208622 - 0.448687I$	$1.68715 + 8.69176I$	$-1.96939 - 9.35770I$
$u = -0.603603 - 1.090260I$ $a = -0.576964 - 0.057793I$ $b = -0.208622 + 0.448687I$	$1.68715 - 8.69176I$	$-1.96939 + 9.35770I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.204874 + 0.705829I$ $a = -1.11943 - 2.16921I$ $b = 0.782082 - 0.120438I$	$-1.27035 + 1.28580I$	$-7.39957 - 4.02248I$
$u = -0.204874 - 0.705829I$ $a = -1.11943 + 2.16921I$ $b = 0.782082 + 0.120438I$	$-1.27035 - 1.28580I$	$-7.39957 + 4.02248I$
$u = 0.445712 + 1.288030I$ $a = -1.82989 - 0.01952I$ $b = 0.74942 + 2.06882I$	$14.2142 - 5.9853I$	$-0.22003 + 3.96763I$
$u = 0.445712 - 1.288030I$ $a = -1.82989 + 0.01952I$ $b = 0.74942 - 2.06882I$	$14.2142 + 5.9853I$	$-0.22003 - 3.96763I$
$u = 0.524102 + 1.283480I$ $a = 1.78460 + 0.35804I$ $b = -0.69769 - 2.47703I$	$13.1143 - 14.2375I$	$-1.63337 + 7.74538I$
$u = 0.524102 - 1.283480I$ $a = 1.78460 - 0.35804I$ $b = -0.69769 + 2.47703I$	$13.1143 + 14.2375I$	$-1.63337 - 7.74538I$
$u = 0.360012$ $a = 0.725098$ $b = 0.460755$	-0.866858	-11.8480

II.
$\boldsymbol{I^u_2 = \langle -9.29\times10^4u^{29} + 2.16\times10^5u^{28} + \cdots + 1.31\times10^5b + 2.51\times10^5,\ 2.63\times10^5u^{29} - 4.44\times10^5u^{28} + \cdots + 1.31\times10^5a - 3.41\times10^5,\ u^{30} - 2u^{29} + \cdots - 2u + 1\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^2 + 1 \\ -u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -2.00971u^{29} + 3.39207u^{28} + \cdots - 5.34987u + 2.60216 \\ 0.709551u^{29} - 1.65242u^{28} + \cdots + 4.31412u - 1.91718 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^5 - 2u^3 - u \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.985413u^{29} + 2.58805u^{28} + \cdots - 1.73251u + 0.970054 \\ -0.0934739u^{29} - 1.15465u^{28} + \cdots + 1.36986u - 0.724375 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1.10899u^{29} + 2.08162u^{28} + \cdots + 7.36940u + 0.914484 \\ 0.581747u^{29} - 0.918028u^{28} + \cdots - 0.836285u - 1.13635 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -3.03400u^{29} + 4.19610u^{28} + \cdots - 9.96723u + 4.23427 \\ 1.30708u^{29} - 2.17849u^{28} + \cdots + 5.03852u - 2.49276 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -1.69073u^{29} + 2.99965u^{28} + \cdots + 8.20569u + 1.05083 \\ 1.96604u^{29} - 2.83797u^{28} + \cdots - 1.76339u - 1.51817 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -1.24547u^{29} + 1.68839u^{28} + \cdots - 2.02714u + 2.58175 \\ 0.712292u^{29} - 1.03145u^{28} + \cdots - 0.916722u - 0.275305 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{240791}{130935}u^{29} - \frac{162874}{43645}u^{28} + \cdots - \frac{489788}{43645}u - \frac{735898}{130935}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{15}+2u^{14}+\cdots-3u+1)^2$
c_2, c_4	$(u^{15}-4u^{14}+\cdots-3u+1)^2$
c_3, c_8	$(u^{15}-u^{14}+\cdots+12u-8)^2$
c_5	$(u^{15}+2u^{14}+\cdots+2u-1)^2$
c_6, c_7, c_{10} c_{12}	$u^{30}+2u^{29}+\cdots+2u+1$
c_9, c_{11}	$u^{30}-18u^{29}+\cdots+20u^2+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{15} + 26y^{14} + \cdots - 3y - 1)^2$
c_2, c_4	$(y^{15} - 2y^{14} + \cdots - 3y - 1)^2$
c_3, c_8	$(y^{15} + 21y^{14} + \cdots - 48y - 64)^2$
c_5	$(y^{15} - 20y^{14} + \cdots + 20y - 1)^2$
c_6, c_7, c_{10} c_{12}	$y^{30} + 18y^{29} + \cdots + 20y^2 + 1$
c_9, c_{11}	$y^{30} - 14y^{29} + \cdots + 40y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.113884 + 1.019270I$ $a = 0.083302 - 0.745556I$ $b = -3.08095 + 2.65889I$	2.02375	$-13.41313 + 0.I$
$u = 0.113884 - 1.019270I$ $a = 0.083302 + 0.745556I$ $b = -3.08095 - 2.65889I$	2.02375	$-13.41313 + 0.I$
$u = 0.968195 + 0.069474I$ $a = 0.13797 - 2.33358I$ $b = -0.34781 + 2.07950I$	$9.38409 + 8.90152I$	$-4.37309 - 5.02376I$
$u = 0.968195 - 0.069474I$ $a = 0.13797 + 2.33358I$ $b = -0.34781 - 2.07950I$	$9.38409 - 8.90152I$	$-4.37309 + 5.02376I$
$u = 0.919318 + 0.052871I$ $a = -0.58314 - 2.24993I$ $b = 0.20945 + 2.09210I$	$10.07630 - 1.17157I$	$-3.47853 + 0.84051I$
$u = 0.919318 - 0.052871I$ $a = -0.58314 + 2.24993I$ $b = 0.20945 - 2.09210I$	$10.07630 + 1.17157I$	$-3.47853 - 0.84051I$
$u = -0.382683 + 1.019330I$ $a = -0.100174 + 0.245215I$ $b = -1.043020 + 0.299494I$	$4.66000 + 0.70150I$	$1.29100 - 2.23884I$
$u = -0.382683 - 1.019330I$ $a = -0.100174 - 0.245215I$ $b = -1.043020 - 0.299494I$	$4.66000 - 0.70150I$	$1.29100 + 2.23884I$
$u = -0.205921 + 0.850565I$ $a = -1.04297 - 1.20710I$ $b = 1.238940 - 0.251605I$	$-1.01332 + 1.14653I$	$-7.69630 + 0.14216I$
$u = -0.205921 - 0.850565I$ $a = -1.04297 + 1.20710I$ $b = 1.238940 + 0.251605I$	$-1.01332 - 1.14653I$	$-7.69630 - 0.14216I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.779082+0.386456I$ $a=-0.002343-0.498402I$ $b=-0.087330+0.645001I$	$-0.36549-3.51330I$	$-3.79294+4.67402I$
$u=-0.779082-0.386456I$ $a=-0.002343+0.498402I$ $b=-0.087330-0.645001I$	$-0.36549+3.51330I$	$-3.79294-4.67402I$
$u=\quad 0.285236+1.100680I$ $a=\quad 0.248621+0.458325I$ $b=-0.050199+0.632654I$	$1.96945-2.58137I$	$-3.99557+4.00241I$
$u=\quad 0.285236-1.100680I$ $a=\quad 0.248621-0.458325I$ $b=-0.050199-0.632654I$	$1.96945+2.58137I$	$-3.99557-4.00241I$
$u=\quad 0.581753+0.981574I$ $a=\quad 0.378951+0.026508I$ $b=\quad 0.335458-0.088672I$	$-0.36549-3.51330I$	$-3.79294+4.67402I$
$u=\quad 0.581753-0.981574I$ $a=\quad 0.378951-0.026508I$ $b=\quad 0.335458+0.088672I$	$-0.36549+3.51330I$	$-3.79294-4.67402I$
$u=-0.221864+1.217690I$ $a=\quad 0.186395+0.139826I$ $b=-0.081740+1.033740I$	$4.66000-0.70150I$	$1.29100+2.23884I$
$u=-0.221864-1.217690I$ $a=\quad 0.186395-0.139826I$ $b=-0.081740-1.033740I$	$4.66000+0.70150I$	$1.29100-2.23884I$
$u=\quad 0.505703+1.263210I$ $a=\quad 1.53273+0.65637I$ $b=-0.01619-2.51545I$	$13.7555-3.9297I$	$-0.74800+2.37642I$
$u=\quad 0.505703-1.263210I$ $a=\quad 1.53273-0.65637I$ $b=-0.01619+2.51545I$	$13.7555+3.9297I$	$-0.74800-2.37642I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.522779+1.269460I$ $a=-1.59728+0.42484I$ $b=\ \ 0.39291-2.31888I$	$9.38409+8.90152I$	$-4.37309-5.02376I$
$u=-0.522779-1.269460I$ $a=-1.59728-0.42484I$ $b=\ \ 0.39291+2.31888I$	$9.38409-8.90152I$	$-4.37309+5.02376I$
$u=-0.431128+1.304160I$ $a=\ \ 1.54639-0.19135I$ $b=-0.48250+1.97368I$	$10.07630+1.17157I$	$-3.47853-0.84051I$
$u=-0.431128-1.304160I$ $a=\ \ 1.54639+0.19135I$ $b=-0.48250-1.97368I$	$10.07630-1.17157I$	$-3.47853+0.84051I$
$u=\ \ 0.441120+1.321990I$ $a=-1.55605-0.47835I$ $b=\ \ 0.28997+2.13261I$	$13.7555+3.9297I$	$-0.74800-2.37642I$
$u=\ \ 0.441120-1.321990I$ $a=-1.55605+0.47835I$ $b=\ \ 0.28997-2.13261I$	$13.7555-3.9297I$	$-0.74800+2.37642I$
$u=-0.556485+0.018600I$ $a=\ \ 0.802481-0.699849I$ $b=-0.908162-0.199648I$	$1.96945-2.58137I$	$-3.99557+4.00241I$
$u=-0.556485-0.018600I$ $a=\ \ 0.802481+0.699849I$ $b=-0.908162+0.199648I$	$1.96945+2.58137I$	$-3.99557-4.00241I$
$u=\ \ 0.284735+0.297386I$ $a=\ \ 0.96512-3.25062I$ $b=\ \ 0.131164+0.467054I$	$-1.01332+1.14653I$	$-7.69630+0.14216I$
$u=\ \ 0.284735-0.297386I$ $a=\ \ 0.96512+3.25062I$ $b=\ \ 0.131164-0.467054I$	$-1.01332-1.14653I$	$-7.69630-0.14216I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{21}{4}u^3 + \frac{11}{4}u^2 - \frac{1}{2}u - \frac{47}{4}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.547424 + 0.585652I$ $a = -0.851808 - 0.911292I$ $b = 0.677958 - 0.157780I$	$-2.62503 + 1.39709I$	$-13.6914 - 3.7657I$
$u = -0.547424 - 0.585652I$ $a = -0.851808 + 0.911292I$ $b = 0.677958 + 0.157780I$	$-2.62503 - 1.39709I$	$-13.6914 + 3.7657I$
$u = 0.547424 + 1.120870I$ $a = 0.351808 - 0.720342I$ $b = -0.927958 + 0.413327I$	$0.98010 - 7.64338I$	$-4.68363 + 4.91712I$
$u = 0.547424 - 1.120870I$ $a = 0.351808 + 0.720342I$ $b = -0.927958 - 0.413327I$	$0.98010 + 7.64338I$	$-4.68363 - 4.91712I$

IV. $\boldsymbol{I^u_4 = \langle u^4 - u^3 + u^2 + b - u + 1,\ u^5 - u^4 + 2u^3 - 2u^2 + a + 2u - 2,\ u^6 - u^5 + 2u^4 - 2u^3 + 2u^2 - 2u + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= u^5 - 3u^3 - u^2 - 3u - 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.498832+1.001300I$ $a=-0.398606-0.800120I$ $b=\ \ 1.060970+0.237841I$	$-1.37919+2.82812I$	$-9.17211-2.41717I$
$u=-0.498832-1.001300I$ $a=-0.398606+0.800120I$ $b=\ \ 1.060970-0.237841I$	$-1.37919-2.82812I$	$-9.17211+2.41717I$
$u=\ \ 0.284920+1.115140I$ $a=\ \ 0.215080-0.841795I$ $b=-1.53980+0.84179I$	2.75839	$-6-0.655771+0.10I$
$u=\ \ 0.284920-1.115140I$ $a=\ \ 0.215080+0.841795I$ $b=-1.53980-0.84179I$	2.75839	$-6-0.655771+0.10I$
$u=\ \ 0.713912+0.305839I$ $a=\ \ 1.183530-0.507021I$ $b=-0.521167-0.055259I$	$-1.37919+2.82812I$	$-9.17211-2.41717I$
$u=\ \ 0.713912-0.305839I$ $a=\ \ 1.183530+0.507021I$ $b=-0.521167+0.055259I$	$-1.37919-2.82812I$	$-9.17211+2.41717I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^{10})(u^{15}+2u^{14}+\cdots-3u+1)^2(u^{17}+3u^{16}+\cdots+209u+16)$
c_2	$((u-1)^{10})(u^{15}-4u^{14}+\cdots-3u+1)^2(u^{17}-3u^{16}+\cdots-15u+4)$
c_3, c_8	$u^{10}(u^{15}-u^{14}+\cdots+12u-8)^2(u^{17}+3u^{16}+\cdots+144u+64)$
c_4	$((u+1)^{10})(u^{15}-4u^{14}+\cdots-3u+1)^2(u^{17}-3u^{16}+\cdots-15u+4)$
c_5	$((u^3+u^2-1)^2)(u^4-3u^3+\cdots-3u+2)(u^{15}+2u^{14}+\cdots+2u-1)^2$ $\cdot(u^{17}-6u^{16}+\cdots+4u+4)$
c_6, c_7	$(u^4+u^2-u+1)(u^6+u^5+2u^4+2u^3+2u^2+2u+1)$ $\cdot(u^{17}+5u^{15}+\cdots+2u+1)(u^{30}+2u^{29}+\cdots+2u+1)$
c_9, c_{11}	$(u^4+2u^3+3u^2+u+1)(u^6+3u^5+4u^4+2u^3+1)$ $\cdot(u^{17}-10u^{16}+\cdots+2u+1)(u^{30}-18u^{29}+\cdots+20u^2+1)$
c_{10}, c_{12}	$(u^4+u^2+u+1)(u^6-u^5+2u^4-2u^3+2u^2-2u+1)$ $\cdot(u^{17}+5u^{15}+\cdots+2u+1)(u^{30}+2u^{29}+\cdots+2u+1)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^{10})(y^{15}+26y^{14}+\cdots-3y-1)^2$ $\cdot(y^{17}+25y^{16}+\cdots+9953y-256)$
c_2, c_4	$((y-1)^{10})(y^{15}-2y^{14}+\cdots-3y-1)^2(y^{17}-3y^{16}+\cdots+209y-16)$
c_3, c_8	$y^{10}(y^{15}+21y^{14}+\cdots-48y-64)^2$ $\cdot(y^{17}+21y^{16}+\cdots-28416y-4096)$
c_5	$(y^3-y^2+2y-1)^2(y^4-y^3+2y^2+7y+4)$ $\cdot((y^{15}-20y^{14}+\cdots+20y-1)^2)(y^{17}-20y^{16}+\cdots+8y-16)$
c_6, c_7, c_{10} c_{12}	$(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^{17}+10y^{16}+\cdots+2y-1)(y^{30}+18y^{29}+\cdots+20y^2+1)$
c_9, c_{11}	$(y^4+2y^3+7y^2+5y+1)(y^6-y^5+4y^4-2y^3+8y^2+1)$ $\cdot(y^{17}-2y^{16}+\cdots+62y-1)(y^{30}-14y^{29}+\cdots+40y+1)$