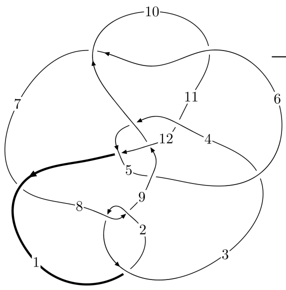
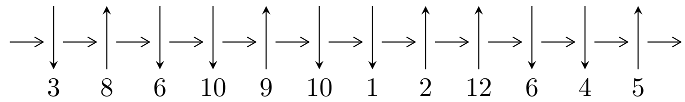
$12n_{0615}$ $(K12n_{0615})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle b-u,\ 9.22136\times10^{39}u^{35}+9.61638\times10^{39}u^{34}+\cdots+3.09061\times10^{39}a+1.18258\times10^{40},\ u^{36}+u^{35}+\cdots+$$

$$I_2^u = \langle b+u,\ -1.38841\times10^{20}u^{26}+1.60384\times10^{20}u^{25}+\cdots+4.99386\times10^{19}a-6.68150\times10^{19},$$
$$u^{27}-u^{26}+\cdots-10u^2-1\rangle$$

$$I_3^u = \langle 3.16250\times10^{115}u^{39}+8.23787\times10^{115}u^{38}+\cdots+1.00780\times10^{119}b+9.36325\times10^{117},$$
$$-3.47990\times10^{101}u^{39}-7.64552\times10^{101}u^{38}+\cdots+4.09554\times10^{104}a+7.59932\times10^{103},$$
$$u^{40}+3u^{39}+\cdots+2382u+643\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}}=0$, with total 103 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. $I_1^u = \langle b-u,\ 9.22\times10^{39}u^{35}+9.62\times10^{39}u^{34}+\cdots+3.09\times10^{39}a+1.18\times 10^{40},\ u^{36}+u^{35}+\cdots+u+1\rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_6 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-2.98367u^{35}-3.11149u^{34}+\cdots-115.302u-3.82636\\u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-6.16242u^{35}-6.04552u^{34}+\cdots-243.525u-13.8436\\0.211237u^{35}+0.365136u^{34}+\cdots+4.11149u+0.127813\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-2.38369u^{35}-0.856037u^{34}+\cdots-126.270u+47.5732\\0.148878u^{35}+0.123183u^{34}+\cdots-0.00667650u-0.728008\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-2.98367u^{35}-3.11149u^{34}+\cdots-114.302u-3.82636\\u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}0.582610u^{35}+0.220715u^{34}+\cdots+37.1948u-18.3213\\-0.0943851u^{35}-0.0352064u^{34}+\cdots+0.227391u+0.366113\end{pmatrix}$$
$$a_3 = \begin{pmatrix}0.433732u^{35}+0.0975317u^{34}+\cdots+37.2014u-17.5933\\-0.254215u^{35}-0.141930u^{34}+\cdots+0.104208u+0.391808\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1.66616u^{35}+1.85078u^{34}+\cdots+46.2547u+8.96445\\0.0535815u^{35}+0.110395u^{34}+\cdots-2.21514u+0.107894\end{pmatrix}$$
$$a_8 = \begin{pmatrix}0.209879u^{35}+0.404528u^{34}+\cdots-9.69810u+12.3718\\0.254215u^{35}+0.141930u^{34}+\cdots-0.104208u-0.391808\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-6.31730u^{35}-6.14088u^{34}+\cdots-253.682u-13.8545\\0.228158u^{35}+0.419587u^{34}+\cdots+4.01612u+0.187326\end{pmatrix}$$

(ii) Obstruction class $=-1$

(iii) Cusp Shapes $=-2.18996u^{35}-0.638271u^{34}+\cdots-106.713u+50.2757$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{36} + 17u^{35} + \cdots + 896u + 256$
c_2, c_8	$u^{36} + 9u^{35} + \cdots + 128u + 16$
c_3	$u^{36} - 19u^{35} + \cdots - 6400u + 1024$
c_4	$u^{36} - 16u^{34} + \cdots + 115u + 42$
c_5, c_{12}	$u^{36} - u^{35} + \cdots - u + 1$
c_6, c_{10}, c_{11}	$u^{36} + u^{35} + \cdots + 2u + 1$
c_7	$u^{36} - 9u^{35} + \cdots - 273856u + 43216$
c_9	$u^{36} + 19u^{35} + \cdots + 464u + 32$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{36} + 5y^{35} + \cdots + 303104y + 65536$
c_2, c_8	$y^{36} + 17y^{35} + \cdots + 896y + 256$
c_3	$y^{36} - 43y^{35} + \cdots + 39911424y + 1048576$
c_4	$y^{36} - 32y^{35} + \cdots - 6169y + 1764$
c_5, c_{12}	$y^{36} + 21y^{35} + \cdots + 103y + 1$
c_6, c_{10}, c_{11}	$y^{36} - 59y^{35} + \cdots - 18y + 1$
c_7	$y^{36} - 7y^{35} + \cdots + 320081792y + 1867622656$
c_9	$y^{36} - 3y^{35} + \cdots + 15616y + 1024$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.118220 + 0.978327I$ $a = 0.739900 + 0.147699I$ $b = -0.118220 + 0.978327I$	$-4.88832 - 1.24309I$	$-8.27685 + 1.44633I$
$u = -0.118220 - 0.978327I$ $a = 0.739900 - 0.147699I$ $b = -0.118220 - 0.978327I$	$-4.88832 + 1.24309I$	$-8.27685 - 1.44633I$
$u = 0.891670 + 0.405032I$ $a = -0.663932 - 0.116326I$ $b = 0.891670 + 0.405032I$	$0.41304 - 2.17632I$	$-2.21227 + 4.08709I$
$u = 0.891670 - 0.405032I$ $a = -0.663932 + 0.116326I$ $b = 0.891670 - 0.405032I$	$0.41304 + 2.17632I$	$-2.21227 - 4.08709I$
$u = -0.265738 + 0.876405I$ $a = 1.84073 + 0.78645I$ $b = -0.265738 + 0.876405I$	$-4.60827 - 1.82178I$	$-6.48879 + 2.84582I$
$u = -0.265738 - 0.876405I$ $a = 1.84073 - 0.78645I$ $b = -0.265738 - 0.876405I$	$-4.60827 + 1.82178I$	$-6.48879 - 2.84582I$
$u = 0.531923 + 0.956773I$ $a = -1.54750 + 0.22966I$ $b = 0.531923 + 0.956773I$	$-5.00027 + 7.84421I$	$-4.73170 - 7.47375I$
$u = 0.531923 - 0.956773I$ $a = -1.54750 - 0.22966I$ $b = 0.531923 - 0.956773I$	$-5.00027 - 7.84421I$	$-4.73170 + 7.47375I$
$u = 0.507758 + 0.970271I$ $a = 0.25842 + 1.54816I$ $b = 0.507758 + 0.970271I$	$-8.28613 + 2.69300I$	$-5.21869 - 2.66219I$
$u = 0.507758 - 0.970271I$ $a = 0.25842 - 1.54816I$ $b = 0.507758 - 0.970271I$	$-8.28613 - 2.69300I$	$-5.21869 + 2.66219I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.862089+0.681772I$ $a=\ \ 0.623323-0.090341I$ $b=-0.862089+0.681772I$	$1.34149-2.31581I$	$-1.56931+2.47888I$
$u=-0.862089-0.681772I$ $a=\ \ 0.623323+0.090341I$ $b=-0.862089-0.681772I$	$1.34149+2.31581I$	$-1.56931-2.47888I$
$u=\ \ 0.149552+0.886635I$ $a=\ \ 0.853564+0.323444I$ $b=\ \ 0.149552+0.886635I$	$-3.37517+6.25769I$	$-4.77547-7.56558I$
$u=\ \ 0.149552-0.886635I$ $a=\ \ 0.853564-0.323444I$ $b=\ \ 0.149552-0.886635I$	$-3.37517-6.25769I$	$-4.77547+7.56558I$
$u=-0.037592+0.765146I$ $a=-0.949161+0.180834I$ $b=-0.037592+0.765146I$	$-1.05608-1.63487I$	$-2.47499+3.77648I$
$u=-0.037592-0.765146I$ $a=-0.949161-0.180834I$ $b=-0.037592-0.765146I$	$-1.05608+1.63487I$	$-2.47499-3.77648I$
$u=-0.714501+1.020090I$ $a=-0.024002+1.309480I$ $b=-0.714501+1.020090I$	$-11.31080-8.41184I$	$-6.53000+5.72334I$
$u=-0.714501-1.020090I$ $a=-0.024002-1.309480I$ $b=-0.714501-1.020090I$	$-11.31080+8.41184I$	$-6.53000-5.72334I$
$u=\ \ 0.642524+1.081940I$ $a=-0.594301+0.008681I$ $b=\ \ 0.642524+1.081940I$	$-4.41629+1.23501I$	$-10.98929-1.86840I$
$u=\ \ 0.642524-1.081940I$ $a=-0.594301-0.008681I$ $b=\ \ 0.642524-1.081940I$	$-4.41629-1.23501I$	$-10.98929+1.86840I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.304510+1.244830I$ $a=-0.611400+1.161230I$ $b=-0.304510+1.244830I$	$-13.70880+1.48629I$	$-9.47906-0.90947I$
$u=-0.304510-1.244830I$ $a=-0.611400-1.161230I$ $b=-0.304510-1.244830I$	$-13.70880-1.48629I$	$-9.47906+0.90947I$
$u=-0.838328+1.021100I$ $a=\ \ 0.574776-0.036631I$ $b=-0.838328+1.021100I$	$-0.10678-4.05131I$	$-5.35718+2.78187I$
$u=-0.838328-1.021100I$ $a=\ \ 0.574776+0.036631I$ $b=-0.838328-1.021100I$	$-0.10678+4.05131I$	$-5.35718-2.78187I$
$u=\ \ 0.86929+1.12336I$ $a=-0.552780-0.027142I$ $b=\ \ 0.86929+1.12336I$	$-2.47606+8.95314I$	$-9.63843-6.69810I$
$u=\ \ 0.86929-1.12336I$ $a=-0.552780+0.027142I$ $b=\ \ 0.86929-1.12336I$	$-2.47606-8.95314I$	$-9.63843+6.69810I$
$u=\ \ 0.009985+0.390472I$ $a=-1.158280-0.683611I$ $b=\ \ 0.009985+0.390472I$	$-0.143687-1.154050I$	$-1.70239+6.30124I$
$u=\ \ 0.009985-0.390472I$ $a=-1.158280+0.683611I$ $b=\ \ 0.009985-0.390472I$	$-0.143687+1.154050I$	$-1.70239-6.30124I$
$u=\ \ 0.99600+1.37401I$ $a=-0.905942+0.047100I$ $b=\ \ 0.99600+1.37401I$	$-9.4005+11.0269I$	0
$u=\ \ 0.99600-1.37401I$ $a=-0.905942-0.047100I$ $b=\ \ 0.99600-1.37401I$	$-9.4005-11.0269I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.81790 + 1.51742I$ $a = 0.883941 + 0.187003I$ $b = -0.81790 + 1.51742I$	$-14.4218 - 6.9271I$	0
$u = -0.81790 - 1.51742I$ $a = 0.883941 - 0.187003I$ $b = -0.81790 - 1.51742I$	$-14.4218 + 6.9271I$	0
$u = -1.12027 + 1.43623I$ $a = 0.832072 + 0.016628I$ $b = -1.12027 + 1.43623I$	$-12.4101 - 16.4883I$	0
$u = -1.12027 - 1.43623I$ $a = 0.832072 - 0.016628I$ $b = -1.12027 - 1.43623I$	$-12.4101 + 16.4883I$	0
$u = -0.019556 + 0.157716I$ $a = -3.59942 - 13.15270I$ $b = -0.019556 + 0.157716I$	$5.85065 - 3.09111I$	$34.3315 - 14.8344I$
$u = -0.019556 - 0.157716I$ $a = -3.59942 + 13.15270I$ $b = -0.019556 - 0.157716I$	$5.85065 + 3.09111I$	$34.3315 + 14.8344I$

II. $I_2^u = \langle b+u,\ -1.39\times 10^{20}u^{26} + 1.60\times 10^{20}u^{25} + \cdots + 4.99\times 10^{19}a - 6.68\times 10^{19},\ u^{27} - u^{26} + \cdots - 10u^2 - 1\rangle$

(i) Arc colorings

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

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

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

$$a_{12} = \begin{pmatrix} 2.78024u^{26} - 3.21163u^{25} + \cdots - 21.1050u + 1.33794 \\ -u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 5.30922u^{26} - 6.52376u^{25} + \cdots - 42.9670u + 0.261911 \\ 0.295368u^{26} - 0.301221u^{25} + \cdots - 1.78024u + 0.431384 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -1.33794u^{26} - 1.44230u^{25} + \cdots - 15.2069u + 22.1050 \\ 0.341753u^{26} - 0.265611u^{25} + \cdots - 0.783163u + 0.688731 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 2.78024u^{26} - 3.21163u^{25} + \cdots - 22.1050u + 1.33794 \\ -u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.431384u^{26} - 1.13602u^{25} + \cdots - 7.33794u + 8.21976 \\ -0.335900u^{26} + 0.248427u^{25} + \cdots + 0.351779u + 0.0159013 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.0896309u^{26} - 0.870405u^{25} + \cdots - 6.55478u + 7.53103 \\ -0.418450u^{26} + 0.307498u^{25} + \cdots + 0.693532u + 0.0920432 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -1.05574u^{26} + 1.20442u^{25} + \cdots + 7.08036u + 1.76225 \\ -0.0188017u^{26} - 0.271955u^{25} + \cdots - 0.0680159u + 0.737192 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -1.14370u^{26} + 0.583208u^{25} + \cdots + 0.782926u + 4.82381 \\ 0.418450u^{26} - 0.307498u^{25} + \cdots - 0.693532u - 0.0920432 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 5.62049u^{26} - 7.17679u^{25} + \cdots - 46.4959u + 1.04507 \\ 0.371510u^{26} - 0.459914u^{25} + \cdots - 2.09151u + 0.773138 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{622830987444436135578}{49938603651971298581}u^{26} + \frac{232496535338997910625}{49938603651971298581}u^{25} + \cdots + \frac{2030283186351200219352}{49938603651971298581}u - \frac{2398399780063016104203}{49938603651971298581}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{27} - 14u^{26} + \cdots - 8u + 1$
c_2	$u^{27} + 7u^{25} + \cdots + 4u^2 + 1$
c_3	$u^{27} - 20u^{26} + \cdots + 413u - 181$
c_4	$u^{27} - 6u^{25} + \cdots + 14u - 5$
c_5, c_{12}	$u^{27} - u^{26} + \cdots - 10u^2 - 1$
c_6, c_{11}	$u^{27} + u^{26} + \cdots - u - 1$
c_7	$u^{27} - u^{25} + \cdots + 12u - 5$
c_8	$u^{27} + 7u^{25} + \cdots - 4u^2 - 1$
c_9	$u^{27} + 12u^{26} + \cdots + 5u^2 - 1$
c_{10}	$u^{27} - u^{26} + \cdots - u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{27} + 6y^{26} + \cdots - 8y - 1$
c_2, c_8	$y^{27} + 14y^{26} + \cdots - 8y - 1$
c_3	$y^{27} - 36y^{26} + \cdots + 599539y - 32761$
c_4	$y^{27} - 12y^{26} + \cdots - 34y - 25$
c_5, c_{12}	$y^{27} - 7y^{26} + \cdots - 20y - 1$
c_6, c_{10}, c_{11}	$y^{27} - 15y^{26} + \cdots - 19y - 1$
c_7	$y^{27} - 2y^{26} + \cdots - 236y - 25$
c_9	$y^{27} - 4y^{26} + \cdots + 10y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.336357+0.966243I$ $a=-0.686667+0.398689I$ $b=\ \ 0.336357-0.966243I$	$-6.68205-0.58234I$	$-13.57427+1.26764I$
$u=-0.336357-0.966243I$ $a=-0.686667-0.398689I$ $b=\ \ 0.336357+0.966243I$	$-6.68205+0.58234I$	$-13.57427-1.26764I$
$u=-1.005400+0.275951I$ $a=-1.037330+0.705161I$ $b=\ \ 1.005400-0.275951I$	$1.83930-2.45917I$	$1.80526+7.62829I$
$u=-1.005400-0.275951I$ $a=-1.037330-0.705161I$ $b=\ \ 1.005400+0.275951I$	$1.83930+2.45917I$	$1.80526-7.62829I$
$u=\ \ 0.606745+0.882798I$ $a=\ \ 0.331286+0.517855I$ $b=-0.606745-0.882798I$	$-5.64281-2.15614I$	$-9.19261-1.44075I$
$u=\ \ 0.606745-0.882798I$ $a=\ \ 0.331286-0.517855I$ $b=-0.606745+0.882798I$	$-5.64281+2.15614I$	$-9.19261+1.44075I$
$u=\ \ 1.07541$ $a=-0.461440$ $b=-1.07541$	-7.12921	-4.03220
$u=\ \ 0.537424+1.012470I$ $a=\ \ 0.721465-0.486432I$ $b=-0.537424-1.012470I$	$-3.11876+0.97105I$	$-4.34103-1.79332I$
$u=\ \ 0.537424-1.012470I$ $a=\ \ 0.721465+0.486432I$ $b=-0.537424+1.012470I$	$-3.11876-0.97105I$	$-4.34103+1.79332I$
$u=-0.816309+0.907921I$ $a=-0.862083-0.153746I$ $b=\ \ 0.816309-0.907921I$	$1.00458-4.33611I$	$2.54294+5.25647I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.816309 - 0.907921I$ $a = -0.862083 + 0.153746I$ $b = 0.816309 + 0.907921I$	$1.00458 + 4.33611I$	$2.54294 - 5.25647I$
$u = 1.216070 + 0.287083I$ $a = 0.772680 + 0.609470I$ $b = -1.216070 - 0.287083I$	$0.51517 + 5.99705I$	$-4.48976 - 8.64665I$
$u = 1.216070 - 0.287083I$ $a = 0.772680 - 0.609470I$ $b = -1.216070 + 0.287083I$	$0.51517 - 5.99705I$	$-4.48976 + 8.64665I$
$u = -1.127710 + 0.614247I$ $a = -0.861605 + 0.280734I$ $b = 1.127710 - 0.614247I$	$2.32898 - 3.69540I$	$1.96062 + 2.95334I$
$u = -1.127710 - 0.614247I$ $a = -0.861605 - 0.280734I$ $b = 1.127710 + 0.614247I$	$2.32898 + 3.69540I$	$1.96062 - 2.95334I$
$u = -0.079298 + 0.699557I$ $a = -1.57234 + 0.54120I$ $b = 0.079298 - 0.699557I$	$-5.11145 + 5.51494I$	$-8.41780 - 5.72397I$
$u = -0.079298 - 0.699557I$ $a = -1.57234 - 0.54120I$ $b = 0.079298 + 0.699557I$	$-5.11145 - 5.51494I$	$-8.41780 + 5.72397I$
$u = -1.326360 + 0.260463I$ $a = 0.244005 + 0.122908I$ $b = 1.326360 - 0.260463I$	$-10.69710 + 4.45935I$	$-7.92473 - 3.01900I$
$u = -1.326360 - 0.260463I$ $a = 0.244005 - 0.122908I$ $b = 1.326360 + 0.260463I$	$-10.69710 - 4.45935I$	$-7.92473 + 3.01900I$
$u = 0.859553 + 1.069800I$ $a = 0.705680 - 0.146031I$ $b = -0.859553 - 1.069800I$	$-1.59462 + 9.09497I$	$-0.27825 - 8.37177I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.859553 - 1.069800I$ $a = 0.705680 + 0.146031I$ $b = -0.859553 + 1.069800I$	$-1.59462 - 9.09497I$	$-0.27825 + 8.37177I$
$u = 1.286270 + 0.526184I$ $a = 0.741479 + 0.383886I$ $b = -1.286270 - 0.526184I$	$0.771357 - 0.260360I$	$-4.29150 + 1.30501I$
$u = 1.286270 - 0.526184I$ $a = 0.741479 - 0.383886I$ $b = -1.286270 + 0.526184I$	$0.771357 + 0.260360I$	$-4.29150 - 1.30501I$
$u = 0.221536 + 0.540952I$ $a = 1.34818 + 1.58969I$ $b = -0.221536 - 0.540952I$	$-3.77045 - 0.62259I$	$-2.79230 - 0.12381I$
$u = 0.221536 - 0.540952I$ $a = 1.34818 - 1.58969I$ $b = -0.221536 + 0.540952I$	$-3.77045 + 0.62259I$	$-2.79230 + 0.12381I$
$u = -0.073870 + 0.346449I$ $a = -2.11404 - 5.83905I$ $b = 0.073870 - 0.346449I$	$5.75856 - 3.13863I$	$-34.4905 + 20.3622I$
$u = -0.073870 - 0.346449I$ $a = -2.11404 + 5.83905I$ $b = 0.073870 + 0.346449I$	$5.75856 + 3.13863I$	$-34.4905 - 20.3622I$

III. $\boldsymbol{I_3^u = \langle 3.16 \times 10^{115} u^{39} + 8.24 \times 10^{115} u^{38} + \cdots + 1.01 \times 10^{119} b + 9.36 \times 10^{117},\ -3.48 \times 10^{101} u^{39} - 7.65 \times 10^{101} u^{38} + \cdots + 4.10 \times 10^{104} a + 7.60 \times 10^{103},\ u^{40} + 3u^{39} + \cdots + 2382u + 643 \rangle}$

(i) Arc colorings

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

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

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

$$a_{12} = \begin{pmatrix} 0.000849679u^{39} + 0.00186679u^{38} + \cdots + 6.51068u - 0.185551 \\ -0.000313802u^{39} - 0.000817408u^{38} + \cdots - 4.43952u - 0.0929075 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.000285297u^{39} + 0.000692402u^{38} + \cdots - 1.15794u + 2.02510 \\ -0.000188165u^{39} - 0.000867240u^{38} + \cdots - 0.373964u - 1.49124 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.0000666790u^{39} + 0.000133987u^{38} + \cdots + 1.52511u - 1.95131 \\ 0.000373461u^{39} + 0.00130423u^{38} + \cdots - 0.762077u + 1.71070 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.000535877u^{39} + 0.00104938u^{38} + \cdots + 2.07116u - 0.278459 \\ -0.000313802u^{39} - 0.000817408u^{38} + \cdots - 4.43952u - 0.0929075 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.000306782u^{39} + 0.00117024u^{38} + \cdots - 2.28718u + 3.66201 \\ -0.000336059u^{39} - 0.00126654u^{38} + \cdots + 1.55459u - 1.55002 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.0000666790u^{39} - 0.000133987u^{38} + \cdots - 1.52511u + 1.95131 \\ -0.000531243u^{39} - 0.00193316u^{38} + \cdots + 0.876534u - 1.66823 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.000887834u^{39} + 0.00224028u^{38} + \cdots + 8.02399u - 0.145440 \\ -0.000846462u^{39} - 0.00202870u^{38} + \cdots - 6.96651u + 0.487391 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.000654257u^{39} - 0.00227174u^{38} + \cdots - 0.869104u - 2.95403 \\ 0.000283061u^{39} + 0.000673324u^{38} + \cdots + 1.04746u + 2.51922 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.000643096u^{39} + 0.00183202u^{38} + \cdots - 0.989966u + 3.41122 \\ -0.000105609u^{39} - 0.000634796u^{38} + \cdots + 0.0138282u - 1.44866 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.00357512u^{39} - 0.0100039u^{38} + \cdots - 28.2430u - 9.94034$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^5+3u^4+4u^3+u^2-u-1)^8$
c_2, c_8	$(u^5-u^4+2u^3-u^2+u-1)^8$
c_3	$(u^4+3u^3+u^2-2u+1)^{10}$
c_4	$u^{40}-u^{39}+\cdots-525220u+436829$
c_5, c_{12}	$u^{40}-3u^{39}+\cdots-2382u+643$
c_6, c_{10}, c_{11}	$u^{40}-u^{39}+\cdots+60966u+88157$
c_7	$(u^5+u^4-2u^3-u^2+u-1)^8$
c_9	$(u^4-u^3+u^2+1)^{10}$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1)^8$
c_2, c_8	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)^8$
c_3	$(y^4 - 7y^3 + 15y^2 - 2y + 1)^{10}$
c_4	$y^{40} - 25y^{39} + \cdots - 458444454794y + 190819575241$
c_5, c_{12}	$y^{40} - 5y^{39} + \cdots + 1465948y + 413449$
c_6, c_{10}, c_{11}	$y^{40} - 45y^{39} + \cdots - 9888901040y + 7771656649$
c_7	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)^8$
c_9	$(y^4 + y^3 + 3y^2 + 2y + 1)^{10}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.915348 + 0.214144I$ $a = -0.189845 + 0.831374I$ $b = -0.106490 - 1.134420I$	$-5.47491 + 0.11547I$	$-6.34185 + 0.47809I$
$u = 0.915348 - 0.214144I$ $a = -0.189845 - 0.831374I$ $b = -0.106490 + 1.134420I$	$-5.47491 - 0.11547I$	$-6.34185 - 0.47809I$
$u = -0.683982 + 0.623025I$ $a = 0.805406 - 0.319531I$ $b = -1.92283 - 1.60754I$	$-11.01840 - 5.81594I$	$-10.57105 + 8.40733I$
$u = -0.683982 - 0.623025I$ $a = 0.805406 + 0.319531I$ $b = -1.92283 + 1.60754I$	$-11.01840 + 5.81594I$	$-10.57105 - 8.40733I$
$u = 1.078690 + 0.106927I$ $a = 0.864918 + 0.759081I$ $b = -1.023340 - 0.427389I$	$1.52684 + 1.63338I$	$-2.68838 + 1.86585I$
$u = 1.078690 - 0.106927I$ $a = 0.864918 - 0.759081I$ $b = -1.023340 + 0.427389I$	$1.52684 - 1.63338I$	$-2.68838 - 1.86585I$
$u = -0.355495 + 1.038010I$ $a = -1.037300 - 0.465364I$ $b = 0.99329 - 1.41252I$	$-4.01662 - 7.56480I$	$-6.91758 + 6.06338I$
$u = -0.355495 - 1.038010I$ $a = -1.037300 + 0.465364I$ $b = 0.99329 + 1.41252I$	$-4.01662 + 7.56480I$	$-6.91758 - 6.06338I$
$u = 0.507163 + 0.745285I$ $a = -0.880172 - 0.126908I$ $b = 1.80560 - 1.23303I$	$-7.54689 + 1.41510I$	$-7.30788 - 4.90874I$
$u = 0.507163 - 0.745285I$ $a = -0.880172 + 0.126908I$ $b = 1.80560 + 1.23303I$	$-7.54689 - 1.41510I$	$-7.30788 + 4.90874I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.612045+0.921062I$ $a=0.718589-0.095543I$ $b=-2.17034-1.07308I$	$-11.01840+2.98573I$	$-10.57105+1.41016I$
$u=-0.612045-0.921062I$ $a=0.718589+0.095543I$ $b=-2.17034+1.07308I$	$-11.01840-2.98573I$	$-10.57105-1.41016I$
$u=-1.023340+0.427389I$ $a=-1.025430+0.462244I$ $b=1.078690-0.106927I$	$1.52684-1.63338I$	$-2.68838-1.86585I$
$u=-1.023340-0.427389I$ $a=-1.025430-0.462244I$ $b=1.078690+0.106927I$	$1.52684+1.63338I$	$-2.68838+1.86585I$
$u=-0.106490+1.134420I$ $a=-0.600583+0.366499I$ $b=0.915348-0.214144I$	$-5.47491-0.11547I$	$-6.34185-0.47809I$
$u=-0.106490-1.134420I$ $a=-0.600583-0.366499I$ $b=0.915348+0.214144I$	$-5.47491+0.11547I$	$-6.34185+0.47809I$
$u=1.013930+0.588855I$ $a=1.018540+0.307239I$ $b=-1.316730-0.470234I$	$1.52684+4.69454I$	$-2.68838-6.99545I$
$u=1.013930-0.588855I$ $a=1.018540-0.307239I$ $b=-1.316730+0.470234I$	$1.52684-4.69454I$	$-2.68838+6.99545I$
$u=0.050553+0.805117I$ $a=-1.06126-1.12463I$ $b=0.44450-1.35463I$	$-4.01662+1.23687I$	$-6.91758-0.93379I$
$u=0.050553-0.805117I$ $a=-1.06126+1.12463I$ $b=0.44450+1.35463I$	$-4.01662-1.23687I$	$-6.91758+0.93379I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.289512+0.747747I$ $a = 1.44340-0.58031I$ $b = -0.775671-1.144290I$	$-0.54514+3.16396I$	$-3.65440-2.56480I$
$u = 0.289512-0.747747I$ $a = 1.44340+0.58031I$ $b = -0.775671+1.144290I$	$-0.54514-3.16396I$	$-3.65440+2.56480I$
$u = -0.775671+1.144290I$ $a = -0.891390-0.140159I$ $b = 0.289512-0.747747I$	$-0.54514-3.16396I$	$-3.65440+2.56480I$
$u = -0.775671-1.144290I$ $a = -0.891390+0.140159I$ $b = 0.289512+0.747747I$	$-0.54514+3.16396I$	$-3.65440-2.56480I$
$u = -1.316730+0.470234I$ $a = -0.792945+0.408910I$ $b = 1.013930-0.588855I$	$1.52684-4.69454I$	$-2.68838+6.99545I$
$u = -1.316730-0.470234I$ $a = -0.792945-0.408910I$ $b = 1.013930+0.588855I$	$1.52684+4.69454I$	$-2.68838-6.99545I$
$u = 0.44450+1.35463I$ $a = 0.793611-0.368401I$ $b = 0.050553-0.805117I$	$-4.01662-1.23687I$	$-6.91758+0.93379I$
$u = 0.44450-1.35463I$ $a = 0.793611+0.368401I$ $b = 0.050553+0.805117I$	$-4.01662+1.23687I$	$-6.91758-0.93379I$
$u = 0.56798+1.35900I$ $a = 0.359128+0.408966I$ $b = -0.199638-0.190466I$	$-5.47491-2.94568I$	$-6.34185+9.33939I$
$u = 0.56798-1.35900I$ $a = 0.359128-0.408966I$ $b = -0.199638+0.190466I$	$-5.47491+2.94568I$	$-6.34185-9.33939I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.199638+0.190466I$ $a=-0.87961+2.76905I$ $b=\ \ 0.56798-1.35900I$	$-5.47491+2.94568I$	$-6.34185-9.33939I$
$u=-0.199638-0.190466I$ $a=-0.87961-2.76905I$ $b=\ \ 0.56798+1.35900I$	$-5.47491-2.94568I$	$-6.34185+9.33939I$
$u=\ \ 0.99329+1.41252I$ $a=\ \ 0.715433-0.099946I$ $b=-0.355495-1.038010I$	$-4.01662+7.56480I$	0
$u=\ \ 0.99329-1.41252I$ $a=\ \ 0.715433+0.099946I$ $b=-0.355495+1.038010I$	$-4.01662-7.56480I$	0
$u=\ \ 1.80560+1.23303I$ $a=\ \ 0.052918+0.362812I$ $b=\ \ 0.507163-0.745285I$	$-7.54689-1.41510I$	0
$u=\ \ 1.80560-1.23303I$ $a=\ \ 0.052918-0.362812I$ $b=\ \ 0.507163+0.745285I$	$-7.54689+1.41510I$	0
$u=-2.17034+1.07308I$ $a=-0.001611+0.331107I$ $b=-0.612045-0.921062I$	$-11.01840-2.98573I$	0
$u=-2.17034-1.07308I$ $a=-0.001611-0.331107I$ $b=-0.612045+0.921062I$	$-11.01840+2.98573I$	0
$u=-1.92283+1.60754I$ $a=-0.076655+0.310539I$ $b=-0.683982-0.623025I$	$-11.01840+5.81594I$	0
$u=-1.92283-1.60754I$ $a=-0.076655-0.310539I$ $b=-0.683982+0.623025I$	$-11.01840-5.81594I$	0

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^5+3u^4+4u^3+u^2-u-1)^8)(u^{27}-14u^{26}+\cdots-8u+1)$ $\cdot(u^{36}+17u^{35}+\cdots+896u+256)$
c_2	$((u^5-u^4+2u^3-u^2+u-1)^8)(u^{27}+7u^{25}+\cdots+4u^2+1)$ $\cdot(u^{36}+9u^{35}+\cdots+128u+16)$
c_3	$((u^4+3u^3+u^2-2u+1)^{10})(u^{27}-20u^{26}+\cdots+413u-181)$ $\cdot(u^{36}-19u^{35}+\cdots-6400u+1024)$
c_4	$(u^{27}-6u^{25}+\cdots+14u-5)(u^{36}-16u^{34}+\cdots+115u+42)$ $\cdot(u^{40}-u^{39}+\cdots-525220u+436829)$
c_5, c_{12}	$(u^{27}-u^{26}+\cdots-10u^2-1)(u^{36}-u^{35}+\cdots-u+1)$ $\cdot(u^{40}-3u^{39}+\cdots-2382u+643)$
c_6, c_{11}	$(u^{27}+u^{26}+\cdots-u-1)(u^{36}+u^{35}+\cdots+2u+1)$ $\cdot(u^{40}-u^{39}+\cdots+60966u+88157)$
c_7	$((u^5+u^4-2u^3-u^2+u-1)^8)(u^{27}-u^{25}+\cdots+12u-5)$ $\cdot(u^{36}-9u^{35}+\cdots-273856u+43216)$
c_8	$((u^5-u^4+2u^3-u^2+u-1)^8)(u^{27}+7u^{25}+\cdots-4u^2-1)$ $\cdot(u^{36}+9u^{35}+\cdots+128u+16)$
c_9	$((u^4-u^3+u^2+1)^{10})(u^{27}+12u^{26}+\cdots+5u^2-1)$ $\cdot(u^{36}+19u^{35}+\cdots+464u+32)$
c_{10}	$(u^{27}-u^{26}+\cdots-u+1)(u^{36}+u^{35}+\cdots+2u+1)$ $\cdot(u^{40}-u^{39}+\cdots+60966u+88157)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1)^8)(y^{27} + 6y^{26} + \cdots - 8y - 1)$ $\cdot (y^{36} + 5y^{35} + \cdots + 303104y + 65536)$
c_2, c_8	$((y^5 + 3y^4 + 4y^3 + y^2 - y - 1)^8)(y^{27} + 14y^{26} + \cdots - 8y - 1)$ $\cdot (y^{36} + 17y^{35} + \cdots + 896y + 256)$
c_3	$((y^4 - 7y^3 + 15y^2 - 2y + 1)^{10})(y^{27} - 36y^{26} + \cdots + 599539y - 32761)$ $\cdot (y^{36} - 43y^{35} + \cdots + 39911424y + 1048576)$
c_4	$(y^{27} - 12y^{26} + \cdots - 34y - 25)(y^{36} - 32y^{35} + \cdots - 6169y + 1764)$ $\cdot (y^{40} - 25y^{39} + \cdots - 458444454794y + 190819575241)$
c_5, c_{12}	$(y^{27} - 7y^{26} + \cdots - 20y - 1)(y^{36} + 21y^{35} + \cdots + 103y + 1)$ $\cdot (y^{40} - 5y^{39} + \cdots + 1465948y + 413449)$
c_6, c_{10}, c_{11}	$(y^{27} - 15y^{26} + \cdots - 19y - 1)(y^{36} - 59y^{35} + \cdots - 18y + 1)$ $\cdot (y^{40} - 45y^{39} + \cdots - 9888901040y + 7771656649)$
c_7	$((y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)^8)(y^{27} - 2y^{26} + \cdots - 236y - 25)$ $\cdot (y^{36} - 7y^{35} + \cdots + 320081792y + 1867622656)$
c_9	$((y^4 + y^3 + 3y^2 + 2y + 1)^{10})(y^{27} - 4y^{26} + \cdots + 10y - 1)$ $\cdot (y^{36} - 3y^{35} + \cdots + 15616y + 1024)$