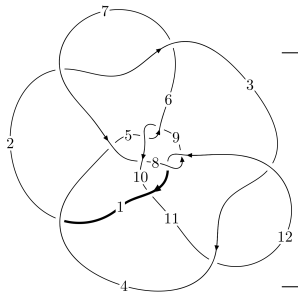
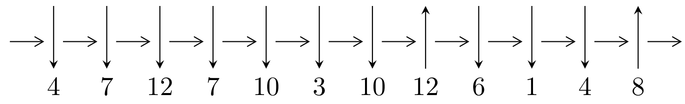
$12n_{0807}$ ($K12n_{0807}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 12477565171u^{19} - 2707721730u^{18} + \cdots + 64702086776b + 27595919604, \\
& 78169757719u^{19} - 30849689152u^{18} + \cdots + 129404173552a + 57487393140, \\
& u^{20} - u^{19} + \cdots - 24u + 4\rangle \\
I_2^u = \langle & -2.57900 \times 10^{40}u^{27} + 3.53622 \times 10^{40}u^{26} + \cdots + 9.02119 \times 10^{41}b - 2.68374 \times 10^{42}, \\
& -1.76496 \times 10^{42}u^{27} + 2.49630 \times 10^{42}u^{26} + \cdots + 8.57013 \times 10^{43}a - 4.54812 \times 10^{44}, \\
& u^{28} - u^{27} + \cdots + 95u + 25\rangle \\
I_3^u = \langle & -u^5 - 2u^4 - 3u^3 + 2b + u + 1,\ u^3 + u^2 + a + 2u - 1,\ u^6 + u^5 + 3u^4 - u^3 + u^2 - 2u + 1\rangle \\
I_4^u = \langle & 6613602u^{13} + 3587729u^{12} + \cdots + 4472398b + 51425184, \\
& 7928755u^{13} + 5002338u^{12} + \cdots + 8944796a + 66385836, \\
& u^{14} + u^{12} + 3u^{11} - 7u^{10} - u^9 + 5u^8 - 6u^7 + u^6 + u^5 + u^4 + 12u^3 - 22u^2 + 16u - 4\rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 68 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.

$\boldsymbol{I_1^u = \langle 1.25\times 10^{10}u^{19} - 2.71\times 10^{9}u^{18} + \cdots + 6.47\times 10^{10}b + 2.76\times 10^{10},\ 7.82\times 10^{10}u^{19} - 3.08\times 10^{10}u^{18} + \cdots + 1.29\times 10^{11}a + 5.75\times 10^{10},\ u^{20} - u^{19} + \cdots - 24u + 4\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.604074u^{19} + 0.238398u^{18} + \cdots - 4.76779u - 0.444247 \\ -0.192846u^{19} + 0.0418491u^{18} + \cdots + 1.83993u - 0.426507 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.516386u^{19} - 0.359863u^{18} + \cdots + 5.34580u + 0.660241 \\ 0.0583155u^{19} - 0.180402u^{18} + \cdots + 4.96135u - 0.712465 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.516386u^{19} + 0.359863u^{18} + \cdots - 5.34580u - 0.660241 \\ -0.125103u^{19} + 0.150575u^{18} + \cdots - 3.16402u + 0.759990 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.516386u^{19} - 0.359863u^{18} + \cdots + 5.34580u + 0.660241 \\ 0.179296u^{19} - 0.251320u^{18} + \cdots + 3.27034u - 0.0863736 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.298481u^{19} + 0.162206u^{18} + \cdots - 4.44207u + 1.60482 \\ -0.190429u^{19} + 0.224600u^{18} + \cdots - 4.91842u + 0.679023 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.0233919u^{19} + 0.141504u^{18} + \cdots - 0.574180u - 1.17094 \\ 0.0994137u^{19} - 0.225778u^{18} + \cdots + 6.99444u - 0.952482 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.0671954u^{19} - 0.268402u^{18} + \cdots + 10.5000u - 0.811473 \\ -0.0394315u^{19} + 0.0310711u^{18} + \cdots + 0.136398u - 0.0923623 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.740350u^{19} + 0.510891u^{18} + \cdots - 10.3265u + 0.749678 \\ -0.158675u^{19} + 0.234881u^{18} + \cdots - 2.05133u + 0.335208 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{28600507011}{16175521694}u^{19} - \frac{9150517238}{8087760847}u^{18} + \cdots + \frac{468797321056}{8087760847}u - \frac{126502436106}{8087760847}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{20} - 2u^{19} + \cdots - 14u + 1$
c_2, c_6	$u^{20} + 5u^{19} + \cdots + 28u + 10$
c_3, c_5, c_9 c_{11}	$u^{20} + u^{19} + \cdots + 24u + 4$
c_7, c_{10}	$u^{20} - u^{19} + \cdots + 9u + 1$
c_8, c_{12}	$u^{20} - 8u^{19} + \cdots + 26u - 14$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{20} - 30y^{19} + \cdots + 10y + 1$
c_2, c_6	$y^{20} + 7y^{19} + \cdots - 744y + 100$
c_3, c_5, c_9 c_{11}	$y^{20} + 19y^{19} + \cdots + 80y + 16$
c_7, c_{10}	$y^{20} - 17y^{19} + \cdots - 121y + 1$
c_8, c_{12}	$y^{20} - 4y^{19} + \cdots - 1516y + 196$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.12905$ $a = -0.359607$ $b = -1.01716$	-8.01665	-11.3930
$u = -0.606091 + 1.044440I$ $a = -0.154877 + 0.090999I$ $b = 0.246614 + 0.948938I$	$4.82527 - 0.08424I$	$-5.01924 - 0.20177I$
$u = -0.606091 - 1.044440I$ $a = -0.154877 - 0.090999I$ $b = 0.246614 - 0.948938I$	$4.82527 + 0.08424I$	$-5.01924 + 0.20177I$
$u = 0.330639 + 0.692945I$ $a = 1.36926 + 1.04069I$ $b = -0.252443 + 1.228440I$	$-6.44427 + 0.93056I$	$-10.49794 - 0.14511I$
$u = 0.330639 - 0.692945I$ $a = 1.36926 - 1.04069I$ $b = -0.252443 - 1.228440I$	$-6.44427 - 0.93056I$	$-10.49794 + 0.14511I$
$u = 0.040542 + 0.738588I$ $a = 2.28316 - 0.41519I$ $b = 0.861536 + 0.029448I$	$1.19115 + 4.34933I$	$-8.67394 + 0.08725I$
$u = 0.040542 - 0.738588I$ $a = 2.28316 + 0.41519I$ $b = 0.861536 - 0.029448I$	$1.19115 - 4.34933I$	$-8.67394 - 0.08725I$
$u = -0.461546 + 1.231960I$ $a = -0.561795 + 0.808913I$ $b = -0.85919 + 1.83207I$	$-4.99906 + 5.81831I$	$-7.50691 - 4.95248I$
$u = -0.461546 - 1.231960I$ $a = -0.561795 - 0.808913I$ $b = -0.85919 - 1.83207I$	$-4.99906 - 5.81831I$	$-7.50691 + 4.95248I$
$u = 0.332357 + 1.332800I$ $a = -0.037401 - 1.225500I$ $b = -0.25149 - 1.62627I$	$4.23168 - 3.75806I$	$-8.78905 + 3.32796I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.332357 - 1.332800I$ $a = -0.037401 + 1.225500I$ $b = -0.25149 + 1.62627I$	$4.23168 + 3.75806I$	$-8.78905 - 3.32796I$
$u = 0.267001 + 0.387206I$ $a = -1.12051 - 1.01732I$ $b = -0.112063 + 0.500261I$	$-0.434096 - 1.337960I$	$-3.82072 + 5.86960I$
$u = 0.267001 - 0.387206I$ $a = -1.12051 + 1.01732I$ $b = -0.112063 - 0.500261I$	$-0.434096 + 1.337960I$	$-3.82072 - 5.86960I$
$u = 0.379438$ $a = -0.343267$ $b = 0.662281$	-0.997451	-8.03610
$u = -0.53782 + 1.58865I$ $a = 0.217202 - 0.766665I$ $b = -0.04599 - 1.77133I$	$8.99311 + 1.97630I$	$-1.32435 - 3.05879I$
$u = -0.53782 - 1.58865I$ $a = 0.217202 + 0.766665I$ $b = -0.04599 + 1.77133I$	$8.99311 - 1.97630I$	$-1.32435 + 3.05879I$
$u = -0.65030 + 1.59655I$ $a = -1.028920 + 0.531678I$ $b = 0.066168 + 0.771188I$	$-2.70292 + 4.75701I$	$-8.90322 - 3.07361I$
$u = -0.65030 - 1.59655I$ $a = -1.028920 - 0.531678I$ $b = 0.066168 - 0.771188I$	$-2.70292 - 4.75701I$	$-8.90322 + 3.07361I$
$u = 1.03097 + 1.49136I$ $a = 0.385322 + 1.112120I$ $b = 0.52429 + 2.07473I$	$-1.7987 - 14.4623I$	$-8.25030 + 6.83242I$
$u = 1.03097 - 1.49136I$ $a = 0.385322 - 1.112120I$ $b = 0.52429 - 2.07473I$	$-1.7987 + 14.4623I$	$-8.25030 - 6.83242I$

II. $\boldsymbol{I_2^u = \langle -2.58\times 10^{40}u^{27} + 3.54\times 10^{40}u^{26} + \cdots + 9.02\times 10^{41}b - 2.68\times 10^{42},\ -1.76\times 10^{42}u^{27} + 2.50\times 10^{42}u^{26} + \cdots + 8.57\times 10^{43}a - 4.55\times 10^{44},\ u^{28} - u^{27} + \cdots + 95u + 25\rangle}$

(i) Arc colorings

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

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

$$a_5 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix}0.0205943u^{27} - 0.0291279u^{26} + \cdots - 2.74979u + 5.30694\\0.0285882u^{27} - 0.0391990u^{26} + \cdots - 3.07837u + 2.97493\end{pmatrix}$$

$$a_8 = \begin{pmatrix}0.0295456u^{27} - 0.0540163u^{26} + \cdots - 6.36659u + 1.04698\\0.0322136u^{27} - 0.0409569u^{26} + \cdots + 0.376791u + 1.67777\end{pmatrix}$$

$$a_1 = \begin{pmatrix}0.0771412u^{27} - 0.0790894u^{26} + \cdots + 3.05691u + 7.47630\\0.0384494u^{27} - 0.0482680u^{26} + \cdots - 0.878749u + 4.68521\end{pmatrix}$$

$$a_7 = \begin{pmatrix}0.0295456u^{27} - 0.0540163u^{26} + \cdots - 6.36659u + 1.04698\\0.0347077u^{27} - 0.0471353u^{26} + \cdots - 1.20929u + 1.06600\end{pmatrix}$$

$$a_4 = \begin{pmatrix}-0.0575867u^{27} + 0.0693145u^{26} + \cdots - 2.27382u - 8.21914\\-0.0238237u^{27} + 0.0350049u^{26} + \cdots + 2.95822u - 4.74941\end{pmatrix}$$

$$a_2 = \begin{pmatrix}-0.0752950u^{27} + 0.0687026u^{26} + \cdots - 5.09400u - 7.24933\\-0.0319712u^{27} + 0.0360560u^{26} + \cdots - 0.410280u - 4.02144\end{pmatrix}$$

$$a_3 = \begin{pmatrix}0.0886392u^{27} - 0.0807706u^{26} + \cdots + 10.1105u + 2.87510\\0.0241381u^{27} - 0.0163375u^{26} + \cdots + 4.61411u + 2.08392\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}0.186332u^{27} - 0.250049u^{26} + \cdots - 2.97174u + 16.2242\\0.125465u^{27} - 0.136882u^{26} + \cdots + 3.15967u + 12.8085\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.153961u^{27} - 0.244058u^{26} + \cdots - 14.1573u + 5.74251$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{28} - 2u^{27} + \cdots + 5356u - 619$
c_2, c_6	$(u^{14} - u^{13} + \cdots + 3u - 5)^2$
c_3, c_5, c_9 c_{11}	$u^{28} + u^{27} + \cdots - 95u + 25$
c_7, c_{10}	$u^{28} + 2u^{27} + \cdots + 170u - 53$
c_8, c_{12}	$(u^{14} + 3u^{13} + \cdots + u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{28} - 32y^{27} + \cdots - 2525320y + 383161$
c_2, c_6	$(y^{14} + 9y^{13} + \cdots + 271y + 25)^2$
c_3, c_5, c_9 c_{11}	$y^{28} + y^{27} + \cdots - 2075y + 625$
c_7, c_{10}	$y^{28} - 30y^{27} + \cdots - 14166y + 2809$
c_8, c_{12}	$(y^{14} - 3y^{13} + \cdots - 9y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.382569 + 0.961679I$ $a = 0.84193 + 1.31313I$ $b = 0.74021 + 1.62534I$	$-1.05651 + 1.71922I$	$-3.54630 + 3.88789I$
$u = -0.382569 - 0.961679I$ $a = 0.84193 - 1.31313I$ $b = 0.74021 - 1.62534I$	$-1.05651 - 1.71922I$	$-3.54630 - 3.88789I$
$u = -0.659980 + 0.684862I$ $a = -0.614643 + 0.241881I$ $b = 0.22392 + 1.79952I$	$5.74683 + 3.41396I$	$-10.73005 - 1.32661I$
$u = -0.659980 - 0.684862I$ $a = -0.614643 - 0.241881I$ $b = 0.22392 - 1.79952I$	$5.74683 - 3.41396I$	$-10.73005 + 1.32661I$
$u = -0.228826 + 0.744696I$ $a = 1.72758 - 0.31252I$ $b = -0.160568 - 0.530138I$	$-7.37370 - 3.17606I$	$-3.96370 + 3.07132I$
$u = -0.228826 - 0.744696I$ $a = 1.72758 + 0.31252I$ $b = -0.160568 + 0.530138I$	$-7.37370 + 3.17606I$	$-3.96370 - 3.07132I$
$u = 0.548168 + 1.129440I$ $a = -0.528269 - 0.526549I$ $b = -0.62027 - 1.83839I$	$-4.37474 - 4.68298I$	$-8.16766 + 3.94230I$
$u = 0.548168 - 1.129440I$ $a = -0.528269 + 0.526549I$ $b = -0.62027 + 1.83839I$	$-4.37474 + 4.68298I$	$-8.16766 - 3.94230I$
$u = 0.443597 + 1.210440I$ $a = -0.78830 - 1.27422I$ $b = -0.95981 - 2.01969I$	$3.68681 - 6.62681I$	$-5.84998 + 6.47809I$
$u = 0.443597 - 1.210440I$ $a = -0.78830 + 1.27422I$ $b = -0.95981 + 2.01969I$	$3.68681 + 6.62681I$	$-5.84998 - 6.47809I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.295300 + 0.052096I$ $a = 0.615026 - 0.559035I$ $b = 0.420326 - 0.383474I$	$-1.05651 - 1.71922I$	$-3.54630 - 3.88789I$
$u = 1.295300 - 0.052096I$ $a = 0.615026 + 0.559035I$ $b = 0.420326 + 0.383474I$	$-1.05651 + 1.71922I$	$-3.54630 + 3.88789I$
$u = 0.414876 + 0.547756I$ $a = 0.384169 + 0.098593I$ $b = 0.895190 - 0.576100I$	-0.830620	$-3.28687 + 0.I$
$u = 0.414876 - 0.547756I$ $a = 0.384169 - 0.098593I$ $b = 0.895190 + 0.576100I$	-0.830620	$-3.28687 + 0.I$
$u = -1.07957 + 0.93026I$ $a = 0.136747 - 0.269651I$ $b = -0.055912 - 0.934276I$	$3.68681 + 6.62681I$	$-5.84998 - 6.47809I$
$u = -1.07957 - 0.93026I$ $a = 0.136747 + 0.269651I$ $b = -0.055912 + 0.934276I$	$3.68681 - 6.62681I$	$-5.84998 + 6.47809I$
$u = 0.65120 + 1.27508I$ $a = -1.29935 + 0.59748I$ $b = -0.539193 + 1.025560I$	$0.06886 - 2.85502I$	$-7.04255 + 3.10308I$
$u = 0.65120 - 1.27508I$ $a = -1.29935 - 0.59748I$ $b = -0.539193 - 1.025560I$	$0.06886 + 2.85502I$	$-7.04255 - 3.10308I$
$u = -0.048562 + 0.546580I$ $a = 2.25353 - 1.01896I$ $b = -0.003743 - 0.725427I$	$0.06886 + 2.85502I$	$-7.04255 - 3.10308I$
$u = -0.048562 - 0.546580I$ $a = 2.25353 + 1.01896I$ $b = -0.003743 + 0.725427I$	$0.06886 - 2.85502I$	$-7.04255 + 3.10308I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.55577+0.38232I$ $a=\ \ 0.54476-1.59078I$ $b=\ \ 0.38666-2.50142I$	$-7.37370+3.17606I$	$-3.96370-3.07132I$
$u=-1.55577-0.38232I$ $a=\ \ 0.54476+1.59078I$ $b=\ \ 0.38666+2.50142I$	$-7.37370-3.17606I$	$-3.96370+3.07132I$
$u=-1.67541$ $a=\ \ 0.252517$ $b=-0.0936482$	-10.6588	16.8870
$u=-0.256228$ $a=\ \ 7.59230$ $b=\ \ 5.32881$	-10.6588	16.8870
$u=\ \ 0.25634+1.92846I$ $a=\ \ 0.039195+0.793027I$ $b=\ \ 0.16064+1.64932I$	$5.74683-3.41396I$	$-10.73005+1.32661I$
$u=\ \ 0.25634-1.92846I$ $a=\ \ 0.039195-0.793027I$ $b=\ \ 0.16064-1.64932I$	$5.74683+3.41396I$	$-10.73005-1.32661I$
$u=\ \ 1.81161+0.79415I$ $a=-0.934769-0.342558I$ $b=-0.105044-0.251982I$	$-4.37474+4.68298I$	$-8.00000-3.94230I$
$u=\ \ 1.81161-0.79415I$ $a=-0.934769+0.342558I$ $b=-0.105044+0.251982I$	$-4.37474-4.68298I$	$-8.00000+3.94230I$

III. $I_3^u =$
$\langle -u^5-2u^4-3u^3+2b+u+1,\ u^3+u^2+a+2u-1,\ u^6+u^5+3u^4-u^3+u^2-2u+1\rangle$

(i) Arc colorings

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

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

$$a_5 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

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

$$a_8 = \begin{pmatrix} -\frac{1}{2}u^5 - \frac{1}{2}u^3 + \cdots + \frac{1}{2}u + \frac{1}{2} \\ -\frac{1}{2}u^5 - u^4 - \frac{3}{2}u^3 + \frac{1}{2}u + \frac{1}{2} \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{1}{2}u^5 + \frac{1}{2}u^3 - 2u^2 - \frac{1}{2}u - \frac{1}{2} \\ u^5 + 2u^4 + 3u^3 - 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -\frac{1}{2}u^5 - \frac{1}{2}u^3 + \cdots + \frac{1}{2}u + \frac{1}{2} \\ -u^5 - u^4 - 3u^3 + u^2 - u + 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0 \\ u^3 + u - 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{1}{2}u^5 + \frac{1}{2}u^3 - 2u^2 - \frac{1}{2}u - \frac{1}{2} \\ \frac{3}{2}u^5 + 2u^4 + \frac{9}{2}u^3 + \frac{1}{2}u - \frac{3}{2} \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^4 - u^3 - 2u^2 + u \\ \frac{1}{2}u^5 + \frac{3}{2}u^3 - u^2 + \frac{3}{2}u - \frac{3}{2} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u^3 - u^2 - 2u + 1 \\ \frac{1}{2}u^5 + \frac{3}{2}u^3 - u^2 + \frac{1}{2}u - \frac{1}{2} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 3u^5 + 8u^4 + 13u^3 + 8u^2 - 4u - 12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y^3 + 2y^2 - 2y + 1)^2$
c_2, c_6	$y^6 + 4y^5 + 6y^4 + 3y^3 + y^2 + 4y + 4$
c_3, c_5, c_9 c_{11}	$y^6 + 5y^5 + 13y^4 + 11y^3 + 3y^2 - 2y + 1$
c_7, c_{10}	$y^6 - y^5 + 4y^4 - 4y^3 + 4y^2 - y + 1$
c_8, c_{12}	$y^6 - 5y^5 + 2y^4 + 20y^3 + 17y^2 + 8y + 4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.351154 + 0.963944I$ $a = 1.57262 - 0.71181I$ $b = 0.710600 - 0.298937I$	$1.38689 + 5.20040I$	$-6.70776 - 8.14756I$
$u = -0.351154 - 0.963944I$ $a = 1.57262 + 0.71181I$ $b = 0.710600 + 0.298937I$	$1.38689 - 5.20040I$	$-6.70776 + 8.14756I$
$u = 0.527759 + 0.238876I$ $a = -0.333639 - 0.915863I$ $b = -0.710600 + 0.298937I$	$-1.44750 - 0.78507I$	$-11.82206 + 4.53910I$
$u = 0.527759 - 0.238876I$ $a = -0.333639 + 0.915863I$ $b = -0.710600 - 0.298937I$	$-1.44750 + 0.78507I$	$-11.82206 - 4.53910I$
$u = -0.67660 + 1.54058I$ $a = -0.238984 + 0.544148I$ $b = 1.68261I$	$8.28528 + 1.18132I$	$-6.97019 + 1.68887I$
$u = -0.67660 - 1.54058I$ $a = -0.238984 - 0.544148I$ $b = - 1.68261I$	$8.28528 - 1.18132I$	$-6.97019 - 1.68887I$

IV.

$\boldsymbol{I_4^u = \langle 6.61 \times 10^6 u^{13} + 3.59 \times 10^6 u^{12} + \cdots + 4.47 \times 10^6 b + 5.14 \times 10^7,\ 7.93 \times 10^6 u^{13} + 5.00 \times 10^6 u^{12} + \cdots + 8.94 \times 10^6 a + 6.64 \times 10^7,\ u^{14} + u^{12} + \cdots + 16u - 4 \rangle}$

(i) Arc colorings

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

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

$$a_5 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} -0.886410u^{13} - 0.559246u^{12} + \cdots + 12.0076u - 7.42173 \\ -1.47876u^{13} - 0.802194u^{12} + \cdots + 22.2687u - 11.4983 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.272987u^{13} - 0.137329u^{12} + \cdots - 7.73482u + 5.22165 \\ 0.394381u^{13} + 0.189086u^{12} + \cdots - 6.45287u + 4.53865 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -1.72801u^{13} - 0.995710u^{12} + \cdots + 25.1472u - 12.1078 \\ -1.87585u^{13} - 0.784387u^{12} + \cdots + 30.6478u - 15.8580 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.272987u^{13} - 0.137329u^{12} + \cdots - 7.73482u + 5.22165 \\ 0.598057u^{13} + 0.326361u^{12} + \cdots - 9.74208u + 5.08797 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -1.15765u^{13} - 0.257052u^{12} + \cdots + 22.2389u - 12.9234 \\ -1.79179u^{13} - 0.902150u^{12} + \cdots + 26.9957u - 14.1414 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1.28004u^{13} + 0.941848u^{12} + \cdots - 14.8390u + 7.56987 \\ 1.45644u^{13} + 0.620242u^{12} + \cdots - 24.4286u + 12.0920 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.121394u^{13} + 0.326415u^{12} + \cdots + 2.28195u - 0.682994 \\ 0.482966u^{13} + 0.178873u^{12} + \cdots - 8.50155u + 4.01105 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -3.14891u^{13} - 1.32603u^{12} + \cdots + 52.7859u - 29.3838 \\ -4.17554u^{13} - 2.22940u^{12} + \cdots + 65.1527u - 34.2072 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{13592118}{2236199}u^{13} - \frac{7846957}{2236199}u^{12} + \cdots + \frac{200344516}{2236199}u - \frac{138314312}{2236199}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{14} - 7u^{13} + \cdots - 76u - 23$
c_2	$(u^7 + 2u^6 + 2u^5 - u^3 + u^2 - 2u + 1)^2$
c_3, c_9	$u^{14} + u^{12} + \cdots - 16u - 4$
c_5, c_{11}	$u^{14} + u^{12} + \cdots + 16u - 4$
c_6	$(u^7 - 2u^6 + 2u^5 - u^3 - u^2 - 2u - 1)^2$
c_7, c_{10}	$u^{14} - 5u^{13} + \cdots - 12u + 1$
c_8	$(u^7 - 3u^6 + 4u^5 - 3u^4 + u^3 - u^2 + u + 1)^2$
c_{12}	$(u^7 + 3u^6 + 4u^5 + 3u^4 + u^3 + u^2 + u - 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{14} - 19y^{13} + \cdots - 7064y + 529$
c_2, c_6	$(y^7 + 2y^5 - 12y^4 - 11y^3 + 3y^2 + 2y - 1)^2$
c_3, c_5, c_9 c_{11}	$y^{14} + 2y^{13} + \cdots - 80y + 16$
c_7, c_{10}	$y^{14} - 23y^{13} + \cdots - 36y + 1$
c_8, c_{12}	$(y^7 - y^6 - 5y^4 + 9y^3 + 7y^2 + 3y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.062180 + 0.124907I$ $a = 0.715657 + 0.799248I$ $b = 0.350888 + 0.153830I$	$-1.45870 + 2.15231I$	$-13.6974 - 5.2163I$
$u = 1.062180 - 0.124907I$ $a = 0.715657 - 0.799248I$ $b = 0.350888 - 0.153830I$	$-1.45870 - 2.15231I$	$-13.6974 + 5.2163I$
$u = -0.475882 + 0.967579I$ $a = -0.175035 - 0.754228I$ $b = -0.47409 - 1.99750I$	$6.66956 + 3.87774I$	$-3.00763 - 4.44001I$
$u = -0.475882 - 0.967579I$ $a = -0.175035 + 0.754228I$ $b = -0.47409 + 1.99750I$	$6.66956 - 3.87774I$	$-3.00763 + 4.44001I$
$u = 0.445391 + 0.989567I$ $a = -1.16665 + 1.08042I$ $b = -0.66834 + 1.61478I$	$-1.45870 - 2.15231I$	$-13.6974 + 5.2163I$
$u = 0.445391 - 0.989567I$ $a = -1.16665 - 1.08042I$ $b = -0.66834 - 1.61478I$	$-1.45870 + 2.15231I$	$-13.6974 - 5.2163I$
$u = 0.547747 + 0.489507I$ $a = -1.41654 - 1.08048I$ $b = 0.340538 - 0.523367I$	$-8.03082 + 3.18578I$	$-16.4787 - 3.7094I$
$u = 0.547747 - 0.489507I$ $a = -1.41654 + 1.08048I$ $b = 0.340538 + 0.523367I$	$-8.03082 - 3.18578I$	$-16.4787 + 3.7094I$
$u = -1.251080 + 0.458307I$ $a = 0.76520 - 1.52382I$ $b = 0.57996 - 2.52308I$	$-8.03082 + 3.18578I$	$-16.4787 - 3.7094I$
$u = -1.251080 - 0.458307I$ $a = 0.76520 + 1.52382I$ $b = 0.57996 + 2.52308I$	$-8.03082 - 3.18578I$	$-16.4787 + 3.7094I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.479131$ $a = -4.15458$ $b = -5.10698$	-10.8094	-36.6330
$u = -1.58531$ $a = -0.00465607$ $b = 0.283188$	-10.8094	-36.6330
$u = 0.22473 + 1.85996I$ $a = -0.143013 - 0.884457I$ $b = -0.21707 - 1.61668I$	$6.66956 - 3.87774I$	$-3.00763 + 4.44001I$
$u = 0.22473 - 1.85996I$ $a = -0.143013 + 0.884457I$ $b = -0.21707 + 1.61668I$	$6.66956 + 3.87774I$	$-3.00763 - 4.44001I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_4	$(u^6+2u^4-2u^2+1)(u^{14}-7u^{13}+\cdots-76u-23)$ $\cdot\,(u^{20}-2u^{19}+\cdots-14u+1)(u^{28}-2u^{27}+\cdots+5356u-619)$
c_2	$(u^6-2u^5+4u^4-5u^3+5u^2-4u+2)$ $\cdot\,((u^7+2u^6+2u^5-u^3+u^2-2u+1)^2)(u^{14}-u^{13}+\cdots+3u-5)^2$ $\cdot\,(u^{20}+5u^{19}+\cdots+28u+10)$
c_3, c_9	$(u^6-u^5+3u^4+u^3+u^2+2u+1)(u^{14}+u^{12}+\cdots-16u-4)$ $\cdot\,(u^{20}+u^{19}+\cdots+24u+4)(u^{28}+u^{27}+\cdots-95u+25)$
c_5, c_{11}	$(u^6+u^5+3u^4-u^3+u^2-2u+1)(u^{14}+u^{12}+\cdots+16u-4)$ $\cdot\,(u^{20}+u^{19}+\cdots+24u+4)(u^{28}+u^{27}+\cdots-95u+25)$
c_6	$(u^6+2u^5+4u^4+5u^3+5u^2+4u+2)$ $\cdot\,((u^7-2u^6+2u^5-u^3-u^2-2u-1)^2)(u^{14}-u^{13}+\cdots+3u-5)^2$ $\cdot\,(u^{20}+5u^{19}+\cdots+28u+10)$
c_7, c_{10}	$(u^6-u^5+2u^3-u+1)(u^{14}-5u^{13}+\cdots-12u+1)$ $\cdot\,(u^{20}-u^{19}+\cdots+9u+1)(u^{28}+2u^{27}+\cdots+170u-53)$
c_8	$(u^6+5u^5+10u^4+12u^3+11u^2+6u+2)$ $\cdot\,((u^7-3u^6+\cdots+u+1)^2)(u^{14}+3u^{13}+\cdots+u+1)^2$ $\cdot\,(u^{20}-8u^{19}+\cdots+26u-14)$
c_{12}	$(u^6-5u^5+10u^4-12u^3+11u^2-6u+2)$ $\cdot\,((u^7+3u^6+\cdots+u-1)^2)(u^{14}+3u^{13}+\cdots+u+1)^2$ $\cdot\,(u^{20}-8u^{19}+\cdots+26u-14)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y^3+2y^2-2y+1)^2)(y^{14}-19y^{13}+\cdots-7064y+529)$ $\cdot\,(y^{20}-30y^{19}+\cdots+10y+1)$ $\cdot\,(y^{28}-32y^{27}+\cdots-2525320y+383161)$
c_2, c_6	$(y^6+4y^5+6y^4+3y^3+y^2+4y+4)$ $\cdot\,(y^7+2y^5-12y^4-11y^3+3y^2+2y-1)^2$ $\cdot\,((y^{14}+9y^{13}+\cdots+271y+25)^2)(y^{20}+7y^{19}+\cdots-744y+100)$
c_3, c_5, c_9 c_{11}	$(y^6+5y^5+\cdots-2y+1)(y^{14}+2y^{13}+\cdots-80y+16)$ $\cdot\,(y^{20}+19y^{19}+\cdots+80y+16)(y^{28}+y^{27}+\cdots-2075y+625)$
c_7, c_{10}	$(y^6-y^5+4y^4-4y^3+4y^2-y+1)(y^{14}-23y^{13}+\cdots-36y+1)$ $\cdot\,(y^{20}-17y^{19}+\cdots-121y+1)(y^{28}-30y^{27}+\cdots-14166y+2809)$
c_8, c_{12}	$(y^6-5y^5+2y^4+20y^3+17y^2+8y+4)$ $\cdot\,((y^7-y^6-5y^4+9y^3+7y^2+3y-1)^2)(y^{14}-3y^{13}+\cdots-9y+1)^2$ $\cdot\,(y^{20}-4y^{19}+\cdots-1516y+196)$