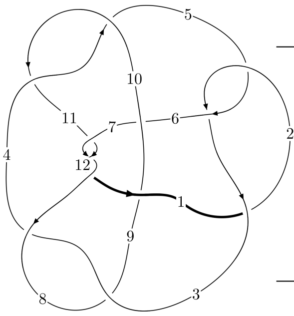
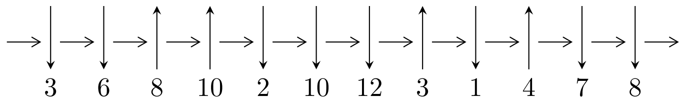
$12n_{0487}$ ($K12n_{0487}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 465502349422u^{14} - 79727868434u^{13} + \cdots + 5995499832656b + 123387962359, \\
& 851737214407u^{14} - 547553851564u^{13} + \cdots + 599549983265a - 2100202102861, \\
& u^{15} - 14u^{13} - 4u^{12} + 107u^{11} + 26u^{10} - 207u^9 - 86u^8 + 119u^7 - 16u^6 + 74u^5 + 44u^4 + 3u^3 + 7u^2 - 1\rangle \\
I_2^u = \langle & -8u^9 + 12u^8 - 14u^7 + 7u^6 + 8u^5 - 36u^4 + 17u^3 - 29u^2 + 25b - 13u + 34, \\
& -63u^9 + 32u^8 - 54u^7 - 23u^6 + 163u^5 - 171u^4 + 112u^3 - 19u^2 + 25a - 293u + 149, \\
& u^{10} - u^9 + u^8 - 3u^6 + 4u^5 - 3u^4 + u^3 + 5u^2 - 5u + 1\rangle
\end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 25 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. $\boldsymbol{I_1^u =}$
$\boldsymbol{\langle 4.66\times10^{11}u^{14}-7.97\times10^{10}u^{13}+\cdots+6.00\times10^{11}b+1.23\times10^{11},\ 8.52\times10^{11}u^{14}-5.48\times10^{11}u^{13}+\cdots+6.00\times10^{11}a-2.10\times10^{12},\ u^{15}-14u^{13}+\cdots+7u^2-1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_8 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-1.42063u^{14}+0.913275u^{13}+\cdots+1.01409u+3.50296\\-0.776420u^{14}+0.132980u^{13}+\cdots-1.17993u-0.205801\end{pmatrix}$$
$$a_9 = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-1.49471u^{14}-0.580434u^{13}+\cdots-14.9172u+0.00184502\\0.320071u^{14}-0.134431u^{13}+\cdots+2.49471u+0.580434\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-1.42063u^{14}+0.913275u^{13}+\cdots+1.01409u+3.50296\\-0.792950u^{14}+0.229300u^{13}+\cdots+0.240700u-1.11908\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0.718288u^{14}+0.713414u^{13}+\cdots+13.7373u-0.207646\\-0.977277u^{14}+0.474429u^{13}+\cdots-1.89822u-0.919215\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-0.468813u^{14}-0.416564u^{13}+\cdots-3.44802u-5.40828\\-0.702958u^{14}+0.430796u^{13}+\cdots-1.35532u+0.991058\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-0.644208u^{14}+0.780295u^{13}+\cdots+2.19402u+3.70877\\-0.776420u^{14}+0.132980u^{13}+\cdots-1.17993u-0.205801\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-0.580434u^{14}-0.320071u^{13}+\cdots+0.00184502u-2.49471\\-0.134431u^{14}-0.0198011u^{13}+\cdots+0.580434u+0.320071\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-1.49471u^{14}-0.580434u^{13}+\cdots-13.9172u+0.00184502\\0.320071u^{14}-0.134431u^{13}+\cdots+2.49471u+0.580434\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= \frac{2849816670076}{599549983265}u^{14} - \frac{2328924086222}{599549983265}u^{13} + \cdots - \frac{4273891768151}{599549983265}u - \frac{9195265038463}{599549983265}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{15} + 3u^{14} + \cdots + 9u + 1$
c_2, c_5	$u^{15} + 3u^{14} + \cdots + u + 1$
c_3, c_4, c_8 c_{10}	$u^{15} - 14u^{13} + \cdots + 7u^2 - 1$
c_6, c_9	$u^{15} + u^{14} + \cdots - 17u + 1$
c_7, c_{11}, c_{12}	$u^{15} - 14u^{14} + \cdots - 96u + 32$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{15} + 21y^{14} + \cdots + 9y - 1$
c_2, c_5	$y^{15} - 3y^{14} + \cdots + 9y - 1$
c_3, c_4, c_8 c_{10}	$y^{15} - 28y^{14} + \cdots + 14y - 1$
c_6, c_9	$y^{15} + 39y^{14} + \cdots + 295y - 1$
c_7, c_{11}, c_{12}	$y^{15} - 10y^{14} + \cdots + 4608y - 1024$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.286970 + 0.003568I$ $a = 0.589686 - 0.744025I$ $b = 0.319963 - 1.267150I$	$4.37389 + 0.30095I$	$-3.29649 - 1.17688I$
$u = 1.286970 - 0.003568I$ $a = 0.589686 + 0.744025I$ $b = 0.319963 + 1.267150I$	$4.37389 - 0.30095I$	$-3.29649 + 1.17688I$
$u = -1.220550 + 0.546816I$ $a = -0.491530 - 0.908635I$ $b = -0.47712 - 1.50755I$	$3.32606 - 6.34337I$	$-6.36496 + 6.14476I$
$u = -1.220550 - 0.546816I$ $a = -0.491530 + 0.908635I$ $b = -0.47712 + 1.50755I$	$3.32606 + 6.34337I$	$-6.36496 - 6.14476I$
$u = 0.100194 + 0.555594I$ $a = 0.55980 - 2.69568I$ $b = -0.253685 - 0.984505I$	$-6.84743 - 2.37164I$	$-5.86485 + 4.49258I$
$u = 0.100194 - 0.555594I$ $a = 0.55980 + 2.69568I$ $b = -0.253685 + 0.984505I$	$-6.84743 + 2.37164I$	$-5.86485 - 4.49258I$
$u = 0.053551 + 0.530205I$ $a = 0.648734 + 0.711885I$ $b = -0.067055 + 0.375797I$	$-0.327240 + 1.083790I$	$-4.63730 - 6.18366I$
$u = 0.053551 - 0.530205I$ $a = 0.648734 - 0.711885I$ $b = -0.067055 - 0.375797I$	$-0.327240 - 1.083790I$	$-4.63730 + 6.18366I$
$u = -0.453145$ $a = -1.45303$ $b = -1.32667$	-2.54518	9.96520
$u = -0.384303$ $a = 1.94891$ $b = -0.219731$	-1.51666	-4.64930

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.278558$ $a = 5.85314$ $b = -0.441847$	-9.80649	-23.6470
$u = 2.72441 + 1.12795I$ $a = 0.289084 - 0.671320I$ $b = 0.08254 - 1.84271I$	$16.0556 + 2.2374I$	$-4.43024 + 0.I$
$u = 2.72441 - 1.12795I$ $a = 0.289084 + 0.671320I$ $b = 0.08254 + 1.84271I$	$16.0556 - 2.2374I$	$-4.43024 + 0.I$
$u = -2.66513 + 1.31852I$ $a = -0.270282 - 0.679151I$ $b = -0.11052 - 1.88022I$	$15.8498 - 9.2839I$	$-4.74065 + 4.04193I$
$u = -2.66513 - 1.31852I$ $a = -0.270282 + 0.679151I$ $b = -0.11052 + 1.88022I$	$15.8498 + 9.2839I$	$-4.74065 - 4.04193I$

II. $I_2^u = \langle -8u^9 + 12u^8 + \cdots + 25b + 34,\ -63u^9 + 32u^8 + \cdots + 25a + 149,\ u^{10} - u^9 + \cdots - 5u + 1 \rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 2.52000u^9 - 1.28000u^8 + \cdots + 11.7200u - 5.96000 \\ 0.320000u^9 - 0.480000u^8 + \cdots + 0.520000u - 1.36000 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -1.52000u^9 + 0.280000u^8 + \cdots - 6.72000u + 0.960000 \\ 0.880000u^9 - 0.320000u^8 + \cdots + 3.68000u - 1.24000 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 2.52000u^9 - 1.28000u^8 + \cdots + 11.7200u - 5.96000 \\ -0.560000u^9 - 0.160000u^8 + \cdots - 3.16000u - 0.120000 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} \frac{6}{5}u^9 + \frac{1}{5}u^8 + \cdots + \frac{31}{5}u + \frac{2}{5} \\ -1.12000u^9 + 0.680000u^8 + \cdots - 6.32000u + 2.76000 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -2.52000u^9 + 1.28000u^8 + \cdots - 12.7200u + 5.96000 \\ -0.240000u^9 + 0.360000u^8 + \cdots - 1.64000u + 1.52000 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} \frac{11}{5}u^9 - \frac{4}{5}u^8 + \cdots + \frac{56}{5}u - \frac{23}{5} \\ 0.320000u^9 - 0.480000u^8 + \cdots + 0.520000u - 1.36000 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -1.24000u^9 + 0.360000u^8 + \cdots - 6.64000u + 2.52000 \\ 0.560000u^9 + 0.160000u^8 + \cdots + 3.16000u - 0.880000 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -1.52000u^9 + 0.280000u^8 + \cdots - 7.72000u + 0.960000 \\ 0.880000u^9 - 0.320000u^8 + \cdots + 3.68000u - 1.24000 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$$= \frac{303}{25}u^9 - \frac{167}{25}u^8 + \frac{249}{25}u^7 + \frac{88}{25}u^6 - \frac{878}{25}u^5 + \frac{826}{25}u^4 - \frac{622}{25}u^3 + \frac{114}{25}u^2 + \frac{1558}{25}u - \frac{944}{25}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{10} - 2u^9 + 9u^8 - 15u^7 + 28u^6 - 38u^5 + 35u^4 - 31u^3 + 15u^2 - 6u + 1$
c_2	$u^{10} + 2u^9 + u^8 - 3u^7 - 2u^6 + 2u^5 + 3u^4 - 3u^3 - 3u^2 + 1$
c_3, c_{10}	$u^{10} - u^9 + u^8 - 3u^6 + 4u^5 - 3u^4 + u^3 + 5u^2 - 5u + 1$
c_4, c_8	$u^{10} + u^9 + u^8 - 3u^6 - 4u^5 - 3u^4 - u^3 + 5u^2 + 5u + 1$
c_5	$u^{10} - 2u^9 + u^8 + 3u^7 - 2u^6 - 2u^5 + 3u^4 + 3u^3 - 3u^2 + 1$
c_6, c_9	$u^{10} + 3u^7 - 5u^6 + 2u^5 - 3u^4 - 2u^2 + 8u - 3$
c_7	$u^{10} - 5u^8 + 3u^7 + 10u^6 - 9u^5 - 7u^4 + 9u^3 + u^2 - u - 1$
c_{11}, c_{12}	$u^{10} - 5u^8 - 3u^7 + 10u^6 + 9u^5 - 7u^4 - 9u^3 + u^2 + u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{10} + 14y^9 + \cdots - 6y + 1$
c_2, c_5	$y^{10} - 2y^9 + 9y^8 - 15y^7 + 28y^6 - 38y^5 + 35y^4 - 31y^3 + 15y^2 - 6y + 1$
c_3, c_4, c_8 c_{10}	$y^{10} + y^9 - 5y^8 - 4y^7 + 15y^6 + 4y^5 - 27y^4 + 3y^3 + 29y^2 - 15y + 1$
c_6, c_9	$y^{10} - 10y^8 - 15y^7 + 9y^6 + 20y^5 - 19y^4 + 10y^3 + 22y^2 - 52y + 9$
c_7, c_{11}, c_{12}	$y^{10} - 10y^9 + \cdots - 3y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.047150 + 0.419466I$ $a = -0.745457 + 0.844492I$ $b = -0.28578 + 1.89933I$	$5.01632 + 5.84673I$	$-1.85887 - 5.25090I$
$u = 1.047150 - 0.419466I$ $a = -0.745457 - 0.844492I$ $b = -0.28578 - 1.89933I$	$5.01632 - 5.84673I$	$-1.85887 + 5.25090I$
$u = -1.154050 + 0.132803I$ $a = 0.775839 + 0.664119I$ $b = 0.24316 + 1.73359I$	$5.60821 + 1.13028I$	$-1.128175 - 0.572443I$
$u = -1.154050 - 0.132803I$ $a = 0.775839 - 0.664119I$ $b = 0.24316 - 1.73359I$	$5.60821 - 1.13028I$	$-1.128175 + 0.572443I$
$u = 0.734349$ $a = 2.32032$ $b = -0.271586$	-9.51751	4.60600
$u = 0.328497 + 1.235550I$ $a = 0.448610 - 0.982537I$ $b = -0.188603 - 0.504750I$	$-7.98285 - 1.51634I$	$-9.37010 + 3.27052I$
$u = 0.328497 - 1.235550I$ $a = 0.448610 + 0.982537I$ $b = -0.188603 + 0.504750I$	$-7.98285 + 1.51634I$	$-9.37010 - 3.27052I$
$u = -0.228999 + 1.295180I$ $a = 0.201014 - 0.252463I$ $b = -0.068161 - 0.994177I$	$-3.05365 - 2.41009I$	$-4.28312 + 3.73455I$
$u = -0.228999 - 1.295180I$ $a = 0.201014 + 0.252463I$ $b = -0.068161 + 0.994177I$	$-3.05365 + 2.41009I$	$-4.28312 - 3.73455I$
$u = 0.280460$ $a = -2.68033$ $b = -1.12964$	-2.81801	-20.3250

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{10}-2u^9+9u^8-15u^7+28u^6-38u^5+35u^4-31u^3+15u^2-6u+1)$ $\cdot(u^{15}+3u^{14}+\cdots+9u+1)$
c_2	$(u^{10}+2u^9+u^8-3u^7-2u^6+2u^5+3u^4-3u^3-3u^2+1)$ $\cdot(u^{15}+3u^{14}+\cdots+u+1)$
c_3, c_{10}	$(u^{10}-u^9+u^8-3u^6+4u^5-3u^4+u^3+5u^2-5u+1)$ $\cdot(u^{15}-14u^{13}+\cdots+7u^2-1)$
c_4, c_8	$(u^{10}+u^9+u^8-3u^6-4u^5-3u^4-u^3+5u^2+5u+1)$ $\cdot(u^{15}-14u^{13}+\cdots+7u^2-1)$
c_5	$(u^{10}-2u^9+u^8+3u^7-2u^6-2u^5+3u^4+3u^3-3u^2+1)$ $\cdot(u^{15}+3u^{14}+\cdots+u+1)$
c_6, c_9	$(u^{10}+3u^7+\cdots+8u-3)(u^{15}+u^{14}+\cdots-17u+1)$
c_7	$(u^{10}-5u^8+3u^7+10u^6-9u^5-7u^4+9u^3+u^2-u-1)$ $\cdot(u^{15}-14u^{14}+\cdots-96u+32)$
c_{11}, c_{12}	$(u^{10}-5u^8-3u^7+10u^6+9u^5-7u^4-9u^3+u^2+u-1)$ $\cdot(u^{15}-14u^{14}+\cdots-96u+32)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{10}+14y^9+\cdots-6y+1)(y^{15}+21y^{14}+\cdots+9y-1)$
c_2, c_5	$(y^{10}-2y^9+9y^8-15y^7+28y^6-38y^5+35y^4-31y^3+15y^2-6y+1)$ $\cdot(y^{15}-3y^{14}+\cdots+9y-1)$
c_3, c_4, c_8 c_{10}	$(y^{10}+y^9-5y^8-4y^7+15y^6+4y^5-27y^4+3y^3+29y^2-15y+1)$ $\cdot(y^{15}-28y^{14}+\cdots+14y-1)$
c_6, c_9	$(y^{10}-10y^8-15y^7+9y^6+20y^5-19y^4+10y^3+22y^2-52y+9)$ $\cdot(y^{15}+39y^{14}+\cdots+295y-1)$
c_7, c_{11}, c_{12}	$(y^{10}-10y^9+\cdots-3y+1)(y^{15}-10y^{14}+\cdots+4608y-1024)$