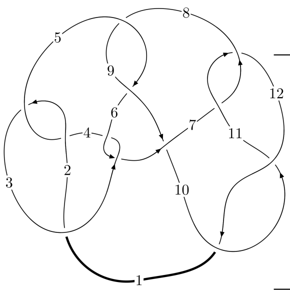
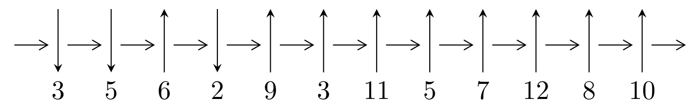
$12n_{0080}$ ($K12n_{0080}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 11188446734u^{40} + 14624888210u^{39} + \cdots + 384829653369b - 18882609362, \\ & -471858393299u^{40} - 603105686012u^{39} + \cdots + 38482965369a + 737953573358, \\ & u^{41} + 2u^{40} + \cdots - u - 1\rangle \\ I_2^u = \langle & b,\ 3u^7 + u^6 - 4u^5 - 4u^4 + 5u^3 + 3u^2 + a - u - 5,\ u^8 + u^7 - u^6 - 2u^5 + u^4 + 2u^3 - 2u - 1\rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 49 representations.

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[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.

$\boldsymbol{I_1^u = \langle 1.12\times10^{10}u^{40}+1.46\times10^{10}u^{39}+\cdots+3.85\times10^{10}b-1.89\times10^{10},\ -4.72\times 10^{11}u^{40}-6.03\times10^{11}u^{39}+\cdots+3.85\times10^{10}a+7.38\times10^{11},\ u^{41}+2u^{40}+\cdots-u-1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 12.2615u^{40} + 15.6720u^{39} + \cdots + 6.84293u - 19.1761 \\ -0.290738u^{40} - 0.380035u^{39} + \cdots + 1.44537u + 0.490674 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -3.45682u^{40} - 4.64440u^{39} + \cdots - 4.50872u + 4.12223 \\ 0.869179u^{40} + 1.73038u^{39} + \cdots - 0.134593u - 0.868998 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 9.93735u^{40} + 13.3319u^{39} + \cdots + 8.96828u - 18.9057 \\ 2.61664u^{40} + 5.42032u^{39} + \cdots - 0.00831753u - 2.41607 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^5 + u \\ -u^7 + u^5 - 2u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^5 - u \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -2.06817u^{40} - 2.86404u^{39} + \cdots - 3.90693u + 2.53206 \\ -0.127787u^{40} + 0.140106u^{39} + \cdots - 0.336106u + 0.527977 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 10.3978u^{40} + 13.4001u^{39} + \cdots + 5.65679u - 18.2402 \\ 0.964836u^{40} + 2.33975u^{39} + \cdots + 1.11758u - 0.565279 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= \frac{1507194298715}{12827655123}u^{40} + \frac{19445744441589}{12827655123}u^{39} + \cdots + \frac{274922951097}{4275885041}u - \frac{21044501994 71}{12827655123}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{41} + 53u^{40} + \cdots + 381u + 1$
c_2, c_4	$u^{41} - 9u^{40} + \cdots - 29u + 1$
c_3, c_6	$u^{41} + 7u^{40} + \cdots + 2176u - 256$
c_5, c_8	$u^{41} - 2u^{40} + \cdots + u - 1$
c_7, c_{11}	$u^{41} - 2u^{40} + \cdots - u + 1$
c_9	$u^{41} + 2u^{40} + \cdots + 12241u + 8353$
c_{10}, c_{12}	$u^{41} - 12u^{40} + \cdots + 5u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{41} - 121y^{40} + \cdots + 73433y - 1$
c_2, c_4	$y^{41} - 53y^{40} + \cdots + 381y - 1$
c_3, c_6	$y^{41} + 51y^{40} + \cdots + 2801664y - 65536$
c_5, c_8	$y^{41} + 42y^{39} + \cdots + 5y - 1$
c_7, c_{11}	$y^{41} - 12y^{40} + \cdots + 5y - 1$
c_9	$y^{41} + 36y^{40} + \cdots + 949291005y - 69772609$
c_{10}, c_{12}	$y^{41} + 36y^{40} + \cdots + 37y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.645157+0.706341I$ $a=\ \ 0.129346+0.199509I$ $b=-0.707026-0.083217I$	$0.314025+0.700329I$	$9.78155+0.42575I$
$u=-0.645157-0.706341I$ $a=\ \ 0.129346-0.199509I$ $b=-0.707026+0.083217I$	$0.314025-0.700329I$	$9.78155-0.42575I$
$u=\ \ 1.06514$ $a=\ \ 1.21465$ $b=-0.619887$	5.55858	18.6510
$u=\ \ 0.878483+0.257640I$ $a=\ \ 1.36190+1.41715I$ $b=-0.395484-1.274730I$	$0.35281+3.72015I$	$8.01877-8.67695I$
$u=\ \ 0.878483-0.257640I$ $a=\ \ 1.36190-1.41715I$ $b=-0.395484+1.274730I$	$0.35281-3.72015I$	$8.01877+8.67695I$
$u=\ \ 0.863822+0.692291I$ $a=-0.710177+0.248903I$ $b=\ \ 0.360833-0.064088I$	$-2.33978+2.66185I$	$4.87613-3.55699I$
$u=\ \ 0.863822-0.692291I$ $a=-0.710177-0.248903I$ $b=\ \ 0.360833+0.064088I$	$-2.33978-2.66185I$	$4.87613+3.55699I$
$u=\ \ 0.850650+0.773602I$ $a=\ \ 0.65587-1.74300I$ $b=-0.305447-0.669138I$	$-4.76432+2.07222I$	$3.47881-9.56031I$
$u=\ \ 0.850650-0.773602I$ $a=\ \ 0.65587+1.74300I$ $b=-0.305447+0.669138I$	$-4.76432-2.07222I$	$3.47881+9.56031I$
$u=\ \ 1.113340+0.298427I$ $a=-2.09473-1.98305I$ $b=\ \ 0.58426+1.64109I$	$-6.81237+7.94638I$	$6.00000-5.66643I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.113340 - 0.298427I$ $a = -2.09473 + 1.98305I$ $b = 0.58426 - 1.64109I$	$-6.81237 - 7.94638I$	$6.00000 + 5.66643I$
$u = -1.123200 + 0.281615I$ $a = 0.82820 - 2.54731I$ $b = 0.17091 + 1.62625I$	$-6.69343 + 0.45475I$	$6.00000 + 0.74518I$
$u = -1.123200 - 0.281615I$ $a = 0.82820 + 2.54731I$ $b = 0.17091 - 1.62625I$	$-6.69343 - 0.45475I$	$6.00000 - 0.74518I$
$u = -0.821741 + 0.155454I$ $a = -1.49310 + 0.28695I$ $b = 0.000254 - 0.581031I$	$0.614586 - 0.353193I$	$8.75569 + 0.62140I$
$u = -0.821741 - 0.155454I$ $a = -1.49310 - 0.28695I$ $b = 0.000254 + 0.581031I$	$0.614586 + 0.353193I$	$8.75569 - 0.62140I$
$u = -0.829859 + 0.817277I$ $a = -1.080080 - 0.171992I$ $b = 0.03664 - 2.09736I$	$-6.22251 + 1.37166I$	$0. - 2.74151I$
$u = -0.829859 - 0.817277I$ $a = -1.080080 + 0.171992I$ $b = 0.03664 + 2.09736I$	$-6.22251 - 1.37166I$	$0. + 2.74151I$
$u = 0.739042 + 0.910928I$ $a = -0.097736 - 0.296625I$ $b = -0.10739 + 1.92349I$	$-14.7874 + 0.6933I$	$0. - 1.66266I$
$u = 0.739042 - 0.910928I$ $a = -0.097736 + 0.296625I$ $b = -0.10739 - 1.92349I$	$-14.7874 - 0.6933I$	$0. + 1.66266I$
$u = -0.746747 + 0.906172I$ $a = -0.099105 - 0.285226I$ $b = 0.82858 + 1.91790I$	$-14.9445 + 7.5314I$	$0. - 2.54363I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.746747 - 0.906172I$ $a = -0.099105 + 0.285226I$ $b = 0.82858 - 1.91790I$	$-14.9445 - 7.5314I$	$0. + 2.54363I$
$u = 0.010347 + 0.818382I$ $a = -0.096572 + 0.286828I$ $b = 0.37826 - 1.80255I$	$-10.51980 - 4.16733I$	$0.66529 + 2.27689I$
$u = 0.010347 - 0.818382I$ $a = -0.096572 - 0.286828I$ $b = 0.37826 + 1.80255I$	$-10.51980 + 4.16733I$	$0.66529 - 2.27689I$
$u = 0.913540 + 0.760932I$ $a = -0.676289 + 1.093800I$ $b = -0.209840 + 0.757944I$	$-4.56999 + 3.72466I$	$3.33454 + 2.09517I$
$u = 0.913540 - 0.760932I$ $a = -0.676289 - 1.093800I$ $b = -0.209840 - 0.757944I$	$-4.56999 - 3.72466I$	$3.33454 - 2.09517I$
$u = -0.893232 + 0.810220I$ $a = -0.95737 - 1.53330I$ $b = 2.34407 + 0.13131I$	$-8.47280 - 3.03045I$	$0. + 2.81396I$
$u = -0.893232 - 0.810220I$ $a = -0.95737 + 1.53330I$ $b = 2.34407 - 0.13131I$	$-8.47280 + 3.03045I$	$0. - 2.81396I$
$u = -1.010010 + 0.669120I$ $a = 0.541263 + 0.790129I$ $b = -0.710082 - 0.023150I$	$1.39688 - 6.02924I$	$12.17156 + 3.37002I$
$u = -1.010010 - 0.669120I$ $a = 0.541263 - 0.790129I$ $b = -0.710082 + 0.023150I$	$1.39688 + 6.02924I$	$12.17156 - 3.37002I$
$u = -0.944017 + 0.784096I$ $a = 1.80124 - 0.03860I$ $b = -0.19373 + 2.11976I$	$-5.86990 - 7.37157I$	$6.00000 + 8.00321I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.944017 - 0.784096I$ $a = 1.80124 + 0.03860I$ $b = -0.19373 - 2.11976I$	$-5.86990 + 7.37157I$	$6.00000 - 8.00321I$
$u = -1.028850 + 0.790391I$ $a = -2.50865 - 0.19833I$ $b = 0.91594 - 1.85439I$	$-14.0605 - 13.8029I$	0
$u = -1.028850 - 0.790391I$ $a = -2.50865 + 0.19833I$ $b = 0.91594 + 1.85439I$	$-14.0605 + 13.8029I$	0
$u = 1.035690 + 0.788962I$ $a = 2.07595 + 0.63512I$ $b = -0.21521 - 1.85036I$	$-13.8581 + 5.5876I$	0
$u = 1.035690 - 0.788962I$ $a = 2.07595 - 0.63512I$ $b = -0.21521 + 1.85036I$	$-13.8581 - 5.5876I$	0
$u = -0.691121$ $a = 7.56339$ $b = -0.229386$	-0.704951	91.2610
$u = 0.593654 + 0.309854I$ $a = -2.47422 + 0.91083I$ $b = 1.073020 - 0.556578I$	$-2.54134 + 1.31981I$	$0.58683 - 4.31452I$
$u = 0.593654 - 0.309854I$ $a = -2.47422 - 0.91083I$ $b = 1.073020 + 0.556578I$	$-2.54134 - 1.31981I$	$0.58683 + 4.31452I$
$u = -0.530048$ $a = -0.522918$ $b = -0.246323$	0.790977	12.7730
$u = 0.122257 + 0.387519I$ $a = -1.73330 + 0.73700I$ $b = 0.199239 + 0.977182I$	$-1.72184 - 1.26203I$	$-0.75083 + 2.53377I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.122257 - 0.387519I$ $a = -1.73330 - 0.73700I$ $b = 0.199239 - 0.977182I$	$-1.72184 + 1.26203I$	$-0.75083 - 2.53377I$

II. $I_2^u = \langle b,\ 3u^7 + u^6 - 4u^5 - 4u^4 + 5u^3 + 3u^2 + a - u - 5,\ u^8 + u^7 - u^6 - 2u^5 + u^4 + 2u^3 - 2u - 1\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -3u^7 - u^6 + 4u^5 + 4u^4 - 5u^3 - 3u^2 + u + 5 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -3u^7 - u^6 + 4u^5 + 4u^4 - 5u^3 - 3u^2 + u + 5 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^5 + u \\ -u^7 + u^5 - 2u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^5 - u \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^5 - u \\ u^7 - u^5 + 2u^3 - u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -3u^7 - u^6 + 5u^5 + 4u^4 - 5u^3 - 3u^2 + 2u + 5 \\ -u^7 + u^5 - 2u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 9u^7 + 6u^6 - 8u^5 - 14u^4 + 15u^3 + 9u^2 - 4u - 15$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^8$
c_3, c_6	y^8
c_5, c_8, c_9	$y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1$
c_7, c_{11}	$y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1$
c_{10}, c_{12}	$y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.570868 + 0.730671I$ $a = 0.615431 - 0.295452I$ $b = 0$	$-0.604279 + 1.131230I$	$1.78185 - 1.82144I$
$u = -0.570868 - 0.730671I$ $a = 0.615431 + 0.295452I$ $b = 0$	$-0.604279 - 1.131230I$	$1.78185 + 1.82144I$
$u = 0.855237 + 0.665892I$ $a = -1.68119 - 0.49658I$ $b = 0$	$-3.80435 + 2.57849I$	$-2.57592 - 5.06085I$
$u = 0.855237 - 0.665892I$ $a = -1.68119 + 0.49658I$ $b = 0$	$-3.80435 - 2.57849I$	$-2.57592 + 5.06085I$
$u = 1.09818$ $a = 0.532015$ $b = 0$	4.85780	6.04790
$u = -1.031810 + 0.655470I$ $a = 0.473764 + 0.240160I$ $b = 0$	$0.73474 - 6.44354I$	$3.16642 + 7.92550I$
$u = -1.031810 - 0.655470I$ $a = 0.473764 - 0.240160I$ $b = 0$	$0.73474 + 6.44354I$	$3.16642 - 7.92550I$
$u = -0.603304$ $a = 4.65198$ $b = 0$	-0.799899	-13.7930

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^8)(u^{41}+53u^{40}+\cdots+381u+1)$
c_2	$((u-1)^8)(u^{41}-9u^{40}+\cdots-29u+1)$
c_3, c_6	$u^8(u^{41}+7u^{40}+\cdots+2176u-256)$
c_4	$((u+1)^8)(u^{41}-9u^{40}+\cdots-29u+1)$
c_5	$(u^8-u^7-3u^6+2u^5+3u^4-2u-1)(u^{41}-2u^{40}+\cdots+u-1)$
c_7	$(u^8+u^7+\cdots-2u-1)(u^{41}-2u^{40}+\cdots-u+1)$
c_8	$(u^8+u^7-3u^6-2u^5+3u^4+2u-1)(u^{41}-2u^{40}+\cdots+u-1)$
c_9	$(u^8+u^7-3u^6-2u^5+3u^4+2u-1)(u^{41}+2u^{40}+\cdots+12241u+8353)$
c_{10}	$(u^8+3u^7+7u^6+10u^5+11u^4+10u^3+6u^2+4u+1)$ $\cdot(u^{41}-12u^{40}+\cdots+5u-1)$
c_{11}	$(u^8-u^7+\cdots+2u-1)(u^{41}-2u^{40}+\cdots-u+1)$
c_{12}	$(u^8-3u^7+7u^6-10u^5+11u^4-10u^3+6u^2-4u+1)$ $\cdot(u^{41}-12u^{40}+\cdots+5u-1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^8)(y^{41} - 121y^{40} + \cdots + 73433y - 1)$
c_2, c_4	$((y-1)^8)(y^{41} - 53y^{40} + \cdots + 381y - 1)$
c_3, c_6	$y^8(y^{41} + 51y^{40} + \cdots + 2801664y - 65536)$
c_5, c_8	$(y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1)$ $\cdot (y^{41} + 42y^{39} + \cdots + 5y - 1)$
c_7, c_{11}	$(y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1)$ $\cdot (y^{41} - 12y^{40} + \cdots + 5y - 1)$
c_9	$(y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1)$ $\cdot (y^{41} + 36y^{40} + \cdots + 949291005y - 69772609)$
c_{10}, c_{12}	$(y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1)$ $\cdot (y^{41} + 36y^{40} + \cdots + 37y - 1)$