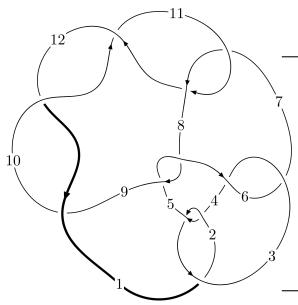
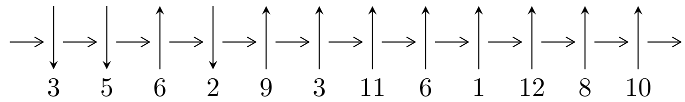
$12n_{0095}$ ($K12n_{0095}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & -1.55792 \times 10^{15} u^{51} - 2.00897 \times 10^{15} u^{50} + \cdots + 5.52629 \times 10^{15} b - 2.66316 \times 10^{15}, \\ & 7.54263 \times 10^{16} u^{51} + 9.53580 \times 10^{16} u^{50} + \cdots + 5.52629 \times 10^{15} a + 1.22505 \times 10^{17},\ u^{52} + 2u^{51} + \cdots - u + 1 \rangle \\ I_2^u = \langle & b,\ -3u^4 - u^3 + u^2 + a + 3u - 4,\ u^5 + u^4 - u^2 + u + 1 \rangle \end{aligned}$$

* 2 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.

$I_1^u = \langle -1.56\times10^{15}u^{51} - 2.01\times10^{15}u^{50} + \cdots + 5.53\times10^{15}b - 2.66\times10^{15},\ 7.54\times10^{16}u^{51} + 9.54\times10^{16}u^{50} + \cdots + 5.53\times10^{15}a + 1.23\times10^{17},\ u^{52} + 2u^{51} + \cdots - u + 1\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_8 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-13.6486u^{51} - 17.2554u^{50} + \cdots + 48.2225u - 22.1677\\0.281910u^{51} + 0.363530u^{50} + \cdots + 0.677139u + 0.481908\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}u\\-u^3 + u\end{pmatrix}$$
$$a_6 = \begin{pmatrix}3.42922u^{51} + 4.63065u^{50} + \cdots - 12.3515u + 3.71531\\-0.827825u^{51} - 1.65459u^{50} + \cdots + 1.54173u - 0.827822\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-11.4441u^{51} - 15.0654u^{50} + \cdots + 49.3203u - 21.9727\\-2.53719u^{51} - 5.27177u^{50} + \cdots + 4.90575u - 2.33717\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-u^7 - 2u^3\\u^9 - u^7 + 3u^5 - 2u^3 + u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}2.03316u^{51} + 2.82064u^{50} + \cdots - 9.13837u + 2.51030\\0.154269u^{51} - 0.0905893u^{50} + \cdots - 1.03142u + 0.554276\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-11.7150u^{51} - 14.8966u^{50} + \cdots + 44.4993u - 21.1883\\-1.02663u^{51} - 2.45529u^{50} + \cdots + 2.73997u - 0.626644\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-u^3\\u^5 - u^3 + u\end{pmatrix}$$
$$a_1 = \begin{pmatrix}u^5 + u\\-u^7 + u^5 - 2u^3 + u\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{820656989676521272}{5526285094326109}u^{51} - \frac{1059949487703439182}{5526285094326109}u^{50} + \cdots + \frac{2787762104200863436}{5526285094326109}u - \frac{11666024383110911\!55}{5526285094326109}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{52} + 22u^{51} + \cdots + 621u + 1$
c_2, c_4	$u^{52} - 6u^{51} + \cdots + 33u - 1$
c_3, c_6	$u^{52} + 7u^{51} + \cdots - 1000u^2 + 32$
c_5, c_8	$u^{52} + 2u^{51} + \cdots - u - 1$
c_7, c_{11}	$u^{52} - 2u^{51} + \cdots + u + 1$
c_9, c_{10}, c_{12}	$u^{52} - 14u^{51} + \cdots - 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{52} + 22y^{51} + \cdots - 353149y + 1$
c_2, c_4	$y^{52} - 22y^{51} + \cdots - 621y + 1$
c_3, c_6	$y^{52} - 33y^{51} + \cdots - 64000y + 1024$
c_5, c_8	$y^{52} + 14y^{51} + \cdots - 3y + 1$
c_7, c_{11}	$y^{52} - 14y^{51} + \cdots - 3y + 1$
c_9, c_{10}, c_{12}	$y^{52} + 50y^{51} + \cdots - 3y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.016700 + 0.228557I$ $a = 2.72812 - 0.43036I$ $b = -1.51670 - 0.32511I$	$6.00023 + 3.38638I$	$10.71662 - 4.19927I$
$u = 1.016700 - 0.228557I$ $a = 2.72812 + 0.43036I$ $b = -1.51670 + 0.32511I$	$6.00023 - 3.38638I$	$10.71662 + 4.19927I$
$u = 0.823924 + 0.656561I$ $a = -0.484808 + 0.298032I$ $b = 0.495386 - 0.141113I$	$-2.12988 + 2.49537I$	$6.00000 - 4.33112I$
$u = 0.823924 - 0.656561I$ $a = -0.484808 - 0.298032I$ $b = 0.495386 + 0.141113I$	$-2.12988 - 2.49537I$	$6.00000 + 4.33112I$
$u = 0.671451 + 0.825112I$ $a = -0.172842 + 0.134029I$ $b = 0.986460 + 0.139928I$	$-1.94375 + 3.12402I$	$6.00000 - 5.50076I$
$u = 0.671451 - 0.825112I$ $a = -0.172842 - 0.134029I$ $b = 0.986460 - 0.139928I$	$-1.94375 - 3.12402I$	$6.00000 + 5.50076I$
$u = -1.019540 + 0.324660I$ $a = 1.95326 + 1.46461I$ $b = -1.375970 + 0.072193I$	$5.42581 - 2.84612I$	$6.00000 + 4.09308I$
$u = -1.019540 - 0.324660I$ $a = 1.95326 - 1.46461I$ $b = -1.375970 - 0.072193I$	$5.42581 + 2.84612I$	$6.00000 - 4.09308I$
$u = -1.067180 + 0.215417I$ $a = -2.01848 - 1.25744I$ $b = 1.328520 + 0.303236I$	$4.97698 + 2.99566I$	0
$u = -1.067180 - 0.215417I$ $a = -2.01848 + 1.25744I$ $b = 1.328520 - 0.303236I$	$4.97698 - 2.99566I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.061390 + 0.321917I$ $a = -2.57122 + 0.55153I$ $b = 1.41215 + 0.59209I$	$4.33370 + 9.78968I$	0
$u = 1.061390 - 0.321917I$ $a = -2.57122 - 0.55153I$ $b = 1.41215 - 0.59209I$	$4.33370 - 9.78968I$	0
$u = -0.763594 + 0.816084I$ $a = -0.008414 + 0.288534I$ $b = -1.43047 - 0.79666I$	$-0.81354 + 2.41917I$	0
$u = -0.763594 - 0.816084I$ $a = -0.008414 - 0.288534I$ $b = -1.43047 + 0.79666I$	$-0.81354 - 2.41917I$	0
$u = 0.829935 + 0.258628I$ $a = 0.589363 + 1.277800I$ $b = -0.015897 - 1.194290I$	$-0.05696 + 3.40025I$	$6.00000 - 9.58209I$
$u = 0.829935 - 0.258628I$ $a = 0.589363 - 1.277800I$ $b = -0.015897 + 1.194290I$	$-0.05696 - 3.40025I$	$6.00000 + 9.58209I$
$u = 0.856907 + 0.769828I$ $a = 0.98921 - 2.18567I$ $b = -0.330878 - 0.523016I$	$-4.80216 + 2.18470I$	0
$u = 0.856907 - 0.769828I$ $a = 0.98921 + 2.18567I$ $b = -0.330878 + 0.523016I$	$-4.80216 - 2.18470I$	0
$u = -0.843215 + 0.806418I$ $a = -1.119580 - 0.651664I$ $b = 0.55289 - 1.60337I$	$-6.35990 + 0.70710I$	0
$u = -0.843215 - 0.806418I$ $a = -1.119580 + 0.651664I$ $b = 0.55289 + 1.60337I$	$-6.35990 - 0.70710I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.815699 + 0.149945I$ $a = -1.65430 - 0.16657I$ $b = -0.000259 - 0.620302I$	$0.447505 - 0.352674I$	$7.09954 + 0.50809I$
$u = -0.815699 - 0.149945I$ $a = -1.65430 + 0.16657I$ $b = -0.000259 + 0.620302I$	$0.447505 + 0.352674I$	$7.09954 - 0.50809I$
$u = -0.770843 + 0.892832I$ $a = -0.1123930 + 0.0783246I$ $b = 1.32848 + 0.83591I$	$-3.73354 + 8.81773I$	0
$u = -0.770843 - 0.892832I$ $a = -0.1123930 - 0.0783246I$ $b = 1.32848 - 0.83591I$	$-3.73354 - 8.81773I$	0
$u = 0.906595 + 0.760633I$ $a = -0.23718 + 1.51693I$ $b = -0.277122 + 0.612791I$	$-4.64898 + 3.59909I$	0
$u = 0.906595 - 0.760633I$ $a = -0.23718 - 1.51693I$ $b = -0.277122 - 0.612791I$	$-4.64898 - 3.59909I$	0
$u = 0.797815 + 0.885175I$ $a = -0.096669 + 0.136453I$ $b = -1.090370 + 0.347341I$	$-2.52853 - 1.37505I$	0
$u = 0.797815 - 0.885175I$ $a = -0.096669 - 0.136453I$ $b = -1.090370 - 0.347341I$	$-2.52853 + 1.37505I$	0
$u = -0.889829 + 0.799881I$ $a = -0.98021 - 1.11750I$ $b = 1.70487 + 0.08098I$	$-7.98633 - 2.99814I$	0
$u = -0.889829 - 0.799881I$ $a = -0.98021 + 1.11750I$ $b = 1.70487 - 0.08098I$	$-7.98633 + 2.99814I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.929422 + 0.783147I$ $a = 1.103730 - 0.206306I$ $b = 0.41722 + 1.67850I$	$-6.09427 - 6.67098I$	0
$u = -0.929422 - 0.783147I$ $a = 1.103730 + 0.206306I$ $b = 0.41722 - 1.67850I$	$-6.09427 + 6.67098I$	0
$u = 1.003030 + 0.726539I$ $a = -0.665678 + 1.244470I$ $b = 1.095740 + 0.014542I$	$-0.95751 + 2.64231I$	0
$u = 1.003030 - 0.726539I$ $a = -0.665678 - 1.244470I$ $b = 1.095740 - 0.014542I$	$-0.95751 - 2.64231I$	0
$u = 0.083300 + 0.756806I$ $a = -0.131209 - 0.090120I$ $b = 1.241510 - 0.510914I$	$1.11117 - 6.07445I$	$2.28728 + 4.99398I$
$u = 0.083300 - 0.756806I$ $a = -0.131209 + 0.090120I$ $b = 1.241510 + 0.510914I$	$1.11117 + 6.07445I$	$2.28728 - 4.99398I$
$u = -0.980620 + 0.759025I$ $a = 1.48052 + 1.47301I$ $b = -1.57827 + 0.76747I$	$-0.15374 - 8.33088I$	0
$u = -0.980620 - 0.759025I$ $a = 1.48052 - 1.47301I$ $b = -1.57827 - 0.76747I$	$-0.15374 + 8.33088I$	0
$u = 0.996725 + 0.804943I$ $a = 0.69605 - 1.42479I$ $b = -1.168190 - 0.406129I$	$-1.90172 + 7.64393I$	0
$u = 0.996725 - 0.804943I$ $a = 0.69605 + 1.42479I$ $b = -1.168190 + 0.406129I$	$-1.90172 - 7.64393I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.011220 + 0.795658I$ $a = -1.51176 - 1.46953I$ $b = 1.39466 - 0.85421I$	$-2.9794 - 15.0713I$	0
$u = -1.011220 - 0.795658I$ $a = -1.51176 + 1.46953I$ $b = 1.39466 + 0.85421I$	$-2.9794 + 15.0713I$	0
$u = -0.698273$ $a = 8.42855$ $b = -0.206931$	-0.693373	108.630
$u = -0.939941 + 0.914479I$ $a = 0.055763 - 0.275557I$ $b = 0.491327 - 0.017560I$	$-12.27210 - 3.36480I$	0
$u = -0.939941 - 0.914479I$ $a = 0.055763 + 0.275557I$ $b = 0.491327 + 0.017560I$	$-12.27210 + 3.36480I$	0
$u = -0.095263 + 0.656941I$ $a = -0.107033 - 0.214568I$ $b = -1.209340 + 0.178713I$	$2.53391 - 0.61006I$	$4.82513 + 0.42624I$
$u = -0.095263 - 0.656941I$ $a = -0.107033 + 0.214568I$ $b = -1.209340 - 0.178713I$	$2.53391 + 0.61006I$	$4.82513 - 0.42624I$
$u = 0.581935 + 0.257196I$ $a = -2.52005 + 0.53236I$ $b = 0.898782 - 0.422027I$	$-2.37470 + 1.17859I$	$-0.43614 - 4.23765I$
$u = 0.581935 - 0.257196I$ $a = -2.52005 - 0.53236I$ $b = 0.898782 + 0.422027I$	$-2.37470 - 1.17859I$	$-0.43614 + 4.23765I$
$u = -0.607842$ $a = -0.654513$ $b = -0.202346$	0.846925	12.0260

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.149713 + 0.331460I$ $a = -2.09121 + 1.21238I$ $b = 0.350124 + 0.778422I$	$-1.82510 - 1.05647I$	$-2.50964 + 1.48510I$
$u = 0.149713 - 0.331460I$ $a = -2.09121 - 1.21238I$ $b = 0.350124 - 0.778422I$	$-1.82510 + 1.05647I$	$-2.50964 - 1.48510I$

II. $\boldsymbol{I_2^u = \langle b,\ -3u^4 - u^3 + u^2 + a + 3u - 4,\ u^5 + u^4 - u^2 + u + 1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 3u^4 + u^3 - u^2 - 3u + 4 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 3u^4 + u^3 - u^2 - 3u + 4 \\ 0 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} u^4 - u^2 + 1 \\ u^4 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} -u^3 \\ -u^4 - u^3 + u^2 - 1 \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -10u^4 - 7u^3 - u^2 + 10u - 19$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^5$
c_3, c_6	y^5
c_5, c_8, c_9 c_{10}, c_{12}	$y^5 + 7y^4 + 16y^3 + 13y^2 + 3y - 1$
c_7, c_{11}	$y^5 - y^4 + 4y^3 - 3y^2 + 3y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.758138 + 0.584034I$ $a = -1.036940 - 0.588205I$ $b = 0$	$-3.46474 + 2.21397I$	$-1.97599 - 4.83884I$
$u = 0.758138 - 0.584034I$ $a = -1.036940 + 0.588205I$ $b = 0$	$-3.46474 - 2.21397I$	$-1.97599 + 4.83884I$
$u = -0.935538 + 0.903908I$ $a = -0.348360 + 0.023996I$ $b = 0$	$-12.60320 - 3.33174I$	$-10.16346 + 1.25445I$
$u = -0.935538 - 0.903908I$ $a = -0.348360 - 0.023996I$ $b = 0$	$-12.60320 + 3.33174I$	$-10.16346 - 1.25445I$
$u = -0.645200$ $a = 5.77061$ $b = 0$	-0.762751	-25.7210

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^5)(u^{52}+22u^{51}+\cdots+621u+1)$
c_2	$((u-1)^5)(u^{52}-6u^{51}+\cdots+33u-1)$
c_3, c_6	$u^5(u^{52}+7u^{51}+\cdots-1000u^2+32)$
c_4	$((u+1)^5)(u^{52}-6u^{51}+\cdots+33u-1)$
c_5	$(u^5+u^4+4u^3+3u^2+3u+1)(u^{52}+2u^{51}+\cdots-u-1)$
c_7	$(u^5+u^4-u^2+u+1)(u^{52}-2u^{51}+\cdots+u+1)$
c_8	$(u^5-u^4+4u^3-3u^2+3u-1)(u^{52}+2u^{51}+\cdots-u-1)$
c_9, c_{10}	$(u^5+u^4+4u^3+3u^2+3u+1)(u^{52}-14u^{51}+\cdots-3u+1)$
c_{11}	$(u^5-u^4+u^2+u-1)(u^{52}-2u^{51}+\cdots+u+1)$
c_{12}	$(u^5-u^4+4u^3-3u^2+3u-1)(u^{52}-14u^{51}+\cdots-3u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^5)(y^{52}+22y^{51}+\cdots-353149y+1)$
c_2, c_4	$((y-1)^5)(y^{52}-22y^{51}+\cdots-621y+1)$
c_3, c_6	$y^5(y^{52}-33y^{51}+\cdots-64000y+1024)$
c_5, c_8	$(y^5+7y^4+16y^3+13y^2+3y-1)(y^{52}+14y^{51}+\cdots-3y+1)$
c_7, c_{11}	$(y^5-y^4+4y^3-3y^2+3y-1)(y^{52}-14y^{51}+\cdots-3y+1)$
c_9, c_{10}, c_{12}	$(y^5+7y^4+16y^3+13y^2+3y-1)(y^{52}+50y^{51}+\cdots-3y+1)$