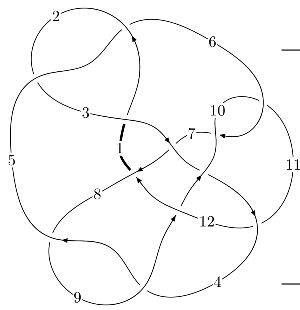
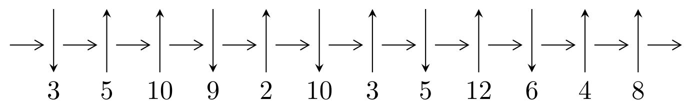
$12n_{0430}$ ($K12n_{0430}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u &= \langle 5393u^{16} + 7516u^{15} + \cdots + 113834b + 14038,\ -56628u^{16} + 74607u^{15} + \cdots + 56917a + 70450, \\ &\quad u^{17} - 2u^{16} + \cdots - 3u + 1\rangle \\ I_2^u &= \langle 586u^{16} + 3093u^{15} + \cdots + 176b + 851,\ 174u^{16} + 1095u^{15} + \cdots + 88a + 969,\ u^{17} + 6u^{16} + \cdots + 7u + 1\rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 34 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. $I_1^u = \langle 5393u^{16} + 7516u^{15} + \cdots + 113834b + 14038,\ -56628u^{16} + 74607u^{15} + \cdots + 56917a + 70450,\ u^{17} - 2u^{16} + \cdots - 3u + 1\rangle$

(i) Arc colorings

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.994922u^{16} - 1.31080u^{15} + \cdots + 4.13788u - 1.23777 \\ -0.0473760u^{16} - 0.0660260u^{15} + \cdots + 0.122169u - 0.123320 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 0.477898u^{16} - 0.823497u^{15} + \cdots + 3.21785u - 0.682046 \\ -0.443259u^{16} + 0.608096u^{15} + \cdots - 1.00104u + 0.423424 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.921157u^{16} - 1.43159u^{15} + \cdots + 4.21889u - 1.10547 \\ -0.443259u^{16} + 0.608096u^{15} + \cdots - 1.00104u + 0.423424 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.425585u^{16} + 0.0861869u^{15} + \cdots + 1.60377u + 0.623056 \\ -u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.328742u^{16} - 1.22857u^{15} + \cdots + 1.16794u - 1.55584 \\ -0.0276279u^{16} + 0.220628u^{15} + \cdots - 0.602685u + 0.647443 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.112286u^{16} + 0.00399705u^{15} + \cdots + 2.05786u - 0.526196 \\ 0.290282u^{16} - 0.397597u^{15} + \cdots + 0.452817u + 0.188204 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -2.03864u^{16} + 3.21241u^{15} + \cdots - 6.13918u + 2.03644 \\ 0.405714u^{16} - 0.285214u^{15} + \cdots + 0.00505121u + 0.301114 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -1.63293u^{16} + 2.92720u^{15} + \cdots - 6.13413u + 2.33755 \\ 0.405714u^{16} - 0.285214u^{15} + \cdots + 0.00505121u + 0.301114 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -1.71543u^{16} + 2.52797u^{15} + \cdots - 3.79178u + 2.31009 \\ -0.0167876u^{16} + 0.211167u^{15} + \cdots - 0.0891034u + 0.108351 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{49715}{8131}u^{16} + \frac{80546}{8131}u^{15} + \cdots - \frac{140656}{8131}u + \frac{65802}{8131}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{17} + 31u^{16} + \cdots - 143264u - 13456$
c_2, c_5	$u^{17} + 5u^{16} + \cdots + 324u - 116$
c_3	$u^{17} - 8u^{15} + \cdots - 353u - 89$
c_4, c_8	$u^{17} + 14u^{15} + \cdots + 664u - 161$
c_6, c_{10}	$u^{17} - 13u^{15} + \cdots + 491u - 113$
c_7	$u^{17} + 3u^{16} + \cdots - 2u - 1$
c_9	$u^{17} + 2u^{16} + \cdots - 3u - 1$
c_{11}	$u^{17} - 2u^{16} + \cdots - 7040u - 5641$
c_{12}	$u^{17} - 4u^{16} + \cdots + 54780u - 10369$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{17} + 11y^{16} + \cdots + 7175468160y - 181063936$
c_2, c_5	$y^{17} + 31y^{16} + \cdots - 143264y - 13456$
c_3	$y^{17} - 16y^{16} + \cdots + 32227y - 7921$
c_4, c_8	$y^{17} + 28y^{16} + \cdots + 580966y - 25921$
c_6, c_{10}	$y^{17} - 26y^{16} + \cdots + 68417y - 12769$
c_7	$y^{17} + 31y^{16} + \cdots - 2y - 1$
c_9	$y^{17} + 2y^{16} + \cdots + y - 1$
c_{11}	$y^{17} - 28y^{16} + \cdots + 15817138y - 31820881$
c_{12}	$y^{17} + 40y^{16} + \cdots - 105102598y - 107516161$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.362254 + 0.899149I$ $a = 0.508122 - 0.988405I$ $b = -0.494404 + 0.009659I$	$-7.23529 - 1.23787I$	$0.881318 - 0.776121I$
$u = 0.362254 - 0.899149I$ $a = 0.508122 + 0.988405I$ $b = -0.494404 - 0.009659I$	$-7.23529 + 1.23787I$	$0.881318 + 0.776121I$
$u = 0.521342 + 0.748526I$ $a = -0.957661 - 0.986783I$ $b = 0.120151 + 0.418864I$	$-6.57952 + 4.86431I$	$-3.62543 - 7.86944I$
$u = 0.521342 - 0.748526I$ $a = -0.957661 + 0.986783I$ $b = 0.120151 - 0.418864I$	$-6.57952 - 4.86431I$	$-3.62543 + 7.86944I$
$u = -0.179836 + 0.612795I$ $a = 0.209052 + 0.316220I$ $b = 0.642189 + 0.262178I$	$-0.94259 - 1.35597I$	$-2.95073 + 4.86153I$
$u = -0.179836 - 0.612795I$ $a = 0.209052 - 0.316220I$ $b = 0.642189 - 0.262178I$	$-0.94259 + 1.35597I$	$-2.95073 - 4.86153I$
$u = -0.608474$ $a = -1.54897$ $b = -0.776291$	1.24807	10.3340
$u = -1.103650 + 0.854632I$ $a = -0.354799 + 1.315260I$ $b = 1.46583 - 0.63451I$	$2.93182 - 3.02594I$	$2.01363 + 1.83200I$
$u = -1.103650 - 0.854632I$ $a = -0.354799 - 1.315260I$ $b = 1.46583 + 0.63451I$	$2.93182 + 3.02594I$	$2.01363 - 1.83200I$
$u = -0.86904 + 1.16197I$ $a = 1.202500 - 0.252987I$ $b = -1.63818 - 0.34892I$	$1.82701 - 4.29273I$	$1.50320 + 2.40550I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.86904 - 1.16197I$ $a = 1.202500 + 0.252987I$ $b = -1.63818 + 0.34892I$	$1.82701 + 4.29273I$	$1.50320 - 2.40550I$
$u = 1.00617 + 1.09412I$ $a = 0.91587 + 1.51470I$ $b = -2.31303 - 0.28490I$	$17.3067 + 11.4081I$	$1.65806 - 4.29006I$
$u = 1.00617 - 1.09412I$ $a = 0.91587 - 1.51470I$ $b = -2.31303 + 0.28490I$	$17.3067 - 11.4081I$	$1.65806 + 4.29006I$
$u = 1.11198 + 0.98896I$ $a = -0.990744 - 0.722226I$ $b = 2.32313 - 0.15197I$	$17.7203 - 3.6735I$	$1.99465 + 0.48580I$
$u = 1.11198 - 0.98896I$ $a = -0.990744 + 0.722226I$ $b = 2.32313 + 0.15197I$	$17.7203 + 3.6735I$	$1.99465 - 0.48580I$
$u = 0.455022 + 0.222930I$ $a = 0.24214 + 2.49180I$ $b = -0.217538 - 0.475765I$	$0.66649 + 1.83609I$	$2.85826 - 4.77361I$
$u = 0.455022 - 0.222930I$ $a = 0.24214 - 2.49180I$ $b = -0.217538 + 0.475765I$	$0.66649 - 1.83609I$	$2.85826 + 4.77361I$

II. $\boldsymbol{I_2^u = \langle 586u^{16} + 3093u^{15} + \cdots + 176b + 851,\ 174u^{16} + 1095u^{15} + \cdots + 88a + 969,\ u^{17} + 6u^{16} + \cdots + 7u + 1\rangle}$

(i) Arc colorings

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -1.97727u^{16} - 12.4432u^{15} + \cdots - 40.8977u - 11.0114 \\ -3.32955u^{16} - 17.5739u^{15} + \cdots - 22.4830u - 4.83523 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -5.89773u^{16} - 33.6193u^{15} + \cdots - 69.4148u - 16.4261 \\ -4.01136u^{16} - 22.0909u^{15} + \cdots - 34.9886u - 7.18182 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -1.88636u^{16} - 11.5284u^{15} + \cdots - 34.4261u - 9.24432 \\ -4.01136u^{16} - 22.0909u^{15} + \cdots - 34.9886u - 7.18182 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -6.55114u^{16} - 36.0341u^{15} + \cdots - 48.8239u - 7.19318 \\ -u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.801136u^{16} + 5.65909u^{15} + \cdots + 7.44886u - 1.43182 \\ -2.50568u^{16} - 14.9830u^{15} + \cdots - 33.8068u - 7.65341 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -5.09659u^{16} - 27.8977u^{15} + \cdots - 40.7784u - 8.42045 \\ 3.01136u^{16} + 16.0909u^{15} + \cdots + 14.9886u + 0.181818 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -3.06818u^{16} - 15.2330u^{15} + \cdots - 9.99432u - 2.90341 \\ -0.903409u^{16} - 3.97727u^{15} + \cdots - 2.84659u - 1.70455 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -3.97159u^{16} - 19.2102u^{15} + \cdots - 12.8409u - 4.60795 \\ -0.903409u^{16} - 3.97727u^{15} + \cdots - 2.84659u - 1.70455 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 6.00568u^{16} + 32.2955u^{15} + \cdots + 54.2443u + 14.8409 \\ 0.704545u^{16} + 3.32386u^{15} + \cdots + 7.35795u + 3.08523 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{71}{88}u^{16} + \frac{87}{22}u^{15} + \cdots - \frac{27}{88}u - \frac{13}{22}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{17} - 15u^{16} + \cdots - 144u + 16$
c_2	$u^{17} + 3u^{16} + \cdots + 8u + 4$
c_3	$u^{17} + 2u^{15} + \cdots - u - 1$
c_4	$u^{17} + 6u^{15} + \cdots + 2u - 1$
c_5	$u^{17} - 3u^{16} + \cdots + 8u - 4$
c_6	$u^{17} - 2u^{16} + \cdots + 3u - 1$
c_7	$u^{17} + u^{16} + \cdots + 2u + 1$
c_8	$u^{17} + 6u^{15} + \cdots + 2u + 1$
c_9	$u^{17} + 6u^{16} + \cdots + 7u + 1$
c_{10}	$u^{17} + 2u^{16} + \cdots + 3u + 1$
c_{11}	$u^{17} - 6u^{15} + \cdots - 2u + 1$
c_{12}	$u^{17} + 2u^{16} + \cdots - 6u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{17} - 21y^{16} + \cdots + 896y - 256$
c_2, c_5	$y^{17} + 15y^{16} + \cdots - 144y - 16$
c_3	$y^{17} + 4y^{16} + \cdots + 7y - 1$
c_4, c_8	$y^{17} + 12y^{16} + \cdots - 14y - 1$
c_6, c_{10}	$y^{17} - 6y^{16} + \cdots - 3y - 1$
c_7	$y^{17} + 31y^{16} + \cdots + 46y - 1$
c_9	$y^{17} + 2y^{16} + \cdots + 9y - 1$
c_{11}	$y^{17} - 12y^{16} + \cdots - 22y - 1$
c_{12}	$y^{17} + 8y^{16} + \cdots + 30y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.663834+0.651775I$ $a=0.943799-0.890365I$ $b=-1.067980-0.354608I$	$1.273240-0.057282I$	$2.81611-0.19040I$
$u=-0.663834-0.651775I$ $a=0.943799+0.890365I$ $b=-1.067980+0.354608I$	$1.273240+0.057282I$	$2.81611+0.19040I$
$u=0.833502+0.399060I$ $a=-0.031669+0.929376I$ $b=-0.809508-0.849987I$	$-2.84392+1.35053I$	$2.24307-2.14121I$
$u=0.833502-0.399060I$ $a=-0.031669-0.929376I$ $b=-0.809508+0.849987I$	$-2.84392-1.35053I$	$2.24307+2.14121I$
$u=0.532887+0.962901I$ $a=-1.44876-0.06054I$ $b=0.748089-0.622928I$	$-4.72942+3.29248I$	$0.14195-3.24278I$
$u=0.532887-0.962901I$ $a=-1.44876+0.06054I$ $b=0.748089+0.622928I$	$-4.72942-3.29248I$	$0.14195+3.24278I$
$u=-0.042338+0.877922I$ $a=-0.23026-1.50709I$ $b=0.611186+0.415473I$	$-8.17306+1.94502I$	$-5.85947-3.89574I$
$u=-0.042338-0.877922I$ $a=-0.23026+1.50709I$ $b=0.611186-0.415473I$	$-8.17306-1.94502I$	$-5.85947+3.89574I$
$u=-0.660026+1.092400I$ $a=-0.184327+0.822457I$ $b=1.27739-0.92461I$	$-0.14701-5.07773I$	$-2.20879+6.02432I$
$u=-0.660026-1.092400I$ $a=-0.184327-0.822457I$ $b=1.27739+0.92461I$	$-0.14701+5.07773I$	$-2.20879-6.02432I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.559508 + 0.431950I$ $a = 0.51799 - 1.76316I$ $b = 0.215995 + 0.599967I$	$-6.21673 - 4.10194I$	$1.014362 - 0.459850I$
$u = -0.559508 - 0.431950I$ $a = 0.51799 + 1.76316I$ $b = 0.215995 - 0.599967I$	$-6.21673 + 4.10194I$	$1.014362 + 0.459850I$
$u = -1.20705 + 0.84824I$ $a = -0.473403 + 1.265630I$ $b = 1.95203 + 0.61047I$	$4.35554 - 2.89495I$	$10.74646 + 0.70267I$
$u = -1.20705 - 0.84824I$ $a = -0.473403 - 1.265630I$ $b = 1.95203 - 0.61047I$	$4.35554 + 2.89495I$	$10.74646 - 0.70267I$
$u = -1.07765 + 1.20640I$ $a = 0.558261 - 1.009500I$ $b = -2.68997 + 0.21065I$	$3.26824 - 5.33607I$	$6.67246 + 8.79937I$
$u = -1.07765 - 1.20640I$ $a = 0.558261 + 1.009500I$ $b = -2.68997 - 0.21065I$	$3.26824 + 5.33607I$	$6.67246 - 8.79937I$
$u = -0.311963$ $a = -3.30327$ $b = -1.47445$	0.107313	-0.132300

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{17} - 15u^{16} + \cdots - 144u + 16)$ $\cdot\,(u^{17} + 31u^{16} + \cdots - 143264u - 13456)$
c_2	$(u^{17} + 3u^{16} + \cdots + 8u + 4)(u^{17} + 5u^{16} + \cdots + 324u - 116)$
c_3	$(u^{17} - 8u^{15} + \cdots - 353u - 89)(u^{17} + 2u^{15} + \cdots - u - 1)$
c_4	$(u^{17} + 6u^{15} + \cdots + 2u - 1)(u^{17} + 14u^{15} + \cdots + 664u - 161)$
c_5	$(u^{17} - 3u^{16} + \cdots + 8u - 4)(u^{17} + 5u^{16} + \cdots + 324u - 116)$
c_6	$(u^{17} - 13u^{15} + \cdots + 491u - 113)(u^{17} - 2u^{16} + \cdots + 3u - 1)$
c_7	$(u^{17} + u^{16} + \cdots + 2u + 1)(u^{17} + 3u^{16} + \cdots - 2u - 1)$
c_8	$(u^{17} + 6u^{15} + \cdots + 2u + 1)(u^{17} + 14u^{15} + \cdots + 664u - 161)$
c_9	$(u^{17} + 2u^{16} + \cdots - 3u - 1)(u^{17} + 6u^{16} + \cdots + 7u + 1)$
c_{10}	$(u^{17} - 13u^{15} + \cdots + 491u - 113)(u^{17} + 2u^{16} + \cdots + 3u + 1)$
c_{11}	$(u^{17} - 6u^{15} + \cdots - 2u + 1)(u^{17} - 2u^{16} + \cdots - 7040u - 5641)$
c_{12}	$(u^{17} - 4u^{16} + \cdots + 54780u - 10369)(u^{17} + 2u^{16} + \cdots - 6u + 1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{17} - 21y^{16} + \cdots + 896y - 256)$ $\cdot\,(y^{17} + 11y^{16} + \cdots + 7175468160y - 181063936)$
c_2, c_5	$(y^{17} + 15y^{16} + \cdots - 144y - 16)$ $\cdot\,(y^{17} + 31y^{16} + \cdots - 143264y - 13456)$
c_3	$(y^{17} - 16y^{16} + \cdots + 32227y - 7921)(y^{17} + 4y^{16} + \cdots + 7y - 1)$
c_4, c_8	$(y^{17} + 12y^{16} + \cdots - 14y - 1)(y^{17} + 28y^{16} + \cdots + 580966y - 25921)$
c_6, c_{10}	$(y^{17} - 26y^{16} + \cdots + 68417y - 12769)(y^{17} - 6y^{16} + \cdots - 3y - 1)$
c_7	$(y^{17} + 31y^{16} + \cdots + 46y - 1)(y^{17} + 31y^{16} + \cdots - 2y - 1)$
c_9	$(y^{17} + 2y^{16} + \cdots + 9y - 1)(y^{17} + 2y^{16} + \cdots + y - 1)$
c_{11}	$(y^{17} - 28y^{16} + \cdots + 15817138y - 31820881)$ $\cdot\,(y^{17} - 12y^{16} + \cdots - 22y - 1)$
c_{12}	$(y^{17} + 8y^{16} + \cdots + 30y - 1)$ $\cdot\,(y^{17} + 40y^{16} + \cdots - 105102598y - 107516161)$