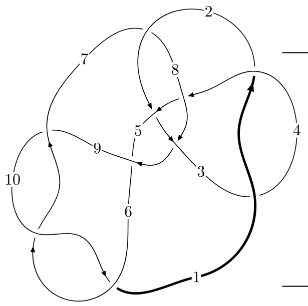
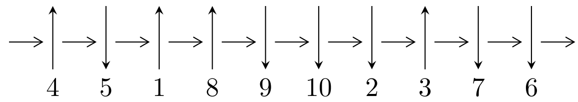
10_{86} $(K10a_{84})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I^u_1 = \langle &-4039601920u^{41} + 442991781120u^{40} + \cdots + 603027732065589b + 12060836,\\ &317833596u^{41} - 21861098876u^{40} + \cdots + 603027732065589a + 110555084616603,\\ &u^{42} - u^{41} + \cdots - 3u + 1\rangle \end{aligned}$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 42 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.

$\boldsymbol{I_1^u = \langle -4.04\times 10^{9}u^{41} + 4.43\times 10^{11}u^{40} + \cdots + 6.03\times 10^{13}b + 1.21\times 10^{7},\ 3.18\times 10^{8}u^{41} - 2.19\times 10^{10}u^{40} + \cdots + 6.03\times 10^{13}a + 1.11\times 10^{14},\ u^{42} - u^{41} + \cdots - 3u + 1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -5.27063\times 10^{-6}u^{41} + 0.000362522u^{40} + \cdots + 5.66153u - 1.83333 \\ 0.0000669887u^{41} - 0.00734613u^{40} + \cdots + 3.16667u - 2.00005\times 10^{-7} \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^3 + 2u \\ u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 6.83829\times 10^{-7}u^{41} - 0.0000369667u^{40} + \cdots + 5.57750u - 1.75000 \\ 0.000767581u^{41} - 0.0917794u^{40} + \cdots + 3.25001u - 3.08389\times 10^{-6} \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.00250009u^{41} - 0.00247925u^{40} + \cdots + 5.08221u - 0.722479 \\ 0.0000486247u^{41} - 0.00588236u^{40} + \cdots + 3.33172u - 0.00583354 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -1.19089\times 10^{-6}u^{41} + 0.0000798978u^{40} + \cdots + 6.41681u - 1.01667 \\ -0.000140118u^{41} + 0.0168866u^{40} + \cdots + 3.18333u + 5.76776\times 10^{-7} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= \frac{191762525603096}{60302773206589}u^{41} - \frac{143500206823500}{60302773206589}u^{40} + \cdots - \frac{332549985427516}{60302773206589}u + \frac{276206801861070}{60302773206589}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^{42} + u^{41} + \cdots + 7u + 1$
c_2	$u^{42} - 7u^{41} + \cdots - u + 1$
c_4	$u^{42} - 3u^{41} + \cdots - u + 1$
c_5	$u^{42} + u^{41} + \cdots + 37u + 17$
c_6, c_9, c_{10}	$u^{42} - u^{41} + \cdots - 3u + 1$
c_7	$u^{42} - u^{41} + \cdots - 10u + 4$
c_8	$u^{42} + u^{41} + \cdots + 21u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^{42} - 27y^{41} + \cdots - 7y + 1$
c_2	$y^{42} - 3y^{41} + \cdots - 7y + 1$
c_4	$y^{42} - 7y^{41} + \cdots - 3y + 1$
c_5	$y^{42} - 7y^{41} + \cdots - 1539y + 289$
c_6, c_9, c_{10}	$y^{42} + 37y^{41} + \cdots - 3y + 1$
c_7	$y^{42} + 41y^{41} + \cdots + 308y + 16$
c_8	$y^{42} + 33y^{41} + \cdots - 247y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.478429 + 0.830661I$ $a = -1.016150 - 0.087138I$ $b = -0.936087 - 0.907522I$	$2.62044 + 5.77796I$	$0.70723 - 3.77194I$
$u = 0.478429 - 0.830661I$ $a = -1.016150 + 0.087138I$ $b = -0.936087 + 0.907522I$	$2.62044 - 5.77796I$	$0.70723 + 3.77194I$
$u = 0.185781 + 1.025770I$ $a = 0.077705 + 0.573452I$ $b = 0.483603 + 0.963768I$	$-0.411802 + 1.015420I$	$-3.47498 - 1.21296I$
$u = 0.185781 - 1.025770I$ $a = 0.077705 - 0.573452I$ $b = 0.483603 - 0.963768I$	$-0.411802 - 1.015420I$	$-3.47498 + 1.21296I$
$u = -0.850313$ $a = 0.302339$ $b = -0.0653539$	-1.60575	-10.6730
$u = -0.750438 + 0.396807I$ $a = -0.358825 + 1.086560I$ $b = 0.176374 + 0.822398I$	$-0.84767 + 2.24209I$	$-7.43868 - 8.38261I$
$u = -0.750438 - 0.396807I$ $a = -0.358825 - 1.086560I$ $b = 0.176374 - 0.822398I$	$-0.84767 - 2.24209I$	$-7.43868 + 8.38261I$
$u = 0.798010 + 0.277511I$ $a = 0.55497 - 2.07637I$ $b = 1.12925 - 1.11829I$	$0.84307 - 10.28750I$	$-1.70761 + 7.71466I$
$u = 0.798010 - 0.277511I$ $a = 0.55497 + 2.07637I$ $b = 1.12925 + 1.11829I$	$0.84307 + 10.28750I$	$-1.70761 - 7.71466I$
$u = -0.439352 + 1.081720I$ $a = -0.241896 - 0.303592I$ $b = -0.301740 - 0.507276I$	$1.66550 + 4.60168I$	$-2.00000 - 9.10658I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.439352 - 1.081720I$ $a = -0.241896 + 0.303592I$ $b = -0.301740 + 0.507276I$	$1.66550 - 4.60168I$	$-2.00000 + 9.10658I$
$u = 0.711781 + 0.186271I$ $a = 0.15739 + 1.81871I$ $b = -0.778762 + 0.849850I$	$-2.84345 - 4.53919I$	$-5.58452 + 6.45237I$
$u = 0.711781 - 0.186271I$ $a = 0.15739 - 1.81871I$ $b = -0.778762 - 0.849850I$	$-2.84345 + 4.53919I$	$-5.58452 - 6.45237I$
$u = -0.716527$ $a = -0.397959$ $b = -0.516879$	-1.70188	-6.91450
$u = -0.160940 + 1.289060I$ $a = 1.70867 - 0.62606I$ $b = -0.56110 - 1.54770I$	$4.17623 + 2.06372I$	0
$u = -0.160940 - 1.289060I$ $a = 1.70867 + 0.62606I$ $b = -0.56110 + 1.54770I$	$4.17623 - 2.06372I$	0
$u = 0.088609 + 1.323910I$ $a = 1.12700 + 0.86778I$ $b = -0.377923 - 0.176136I$	$4.85107 + 1.20148I$	0
$u = 0.088609 - 1.323910I$ $a = 1.12700 - 0.86778I$ $b = -0.377923 + 0.176136I$	$4.85107 - 1.20148I$	0
$u = -0.279867 + 1.317280I$ $a = -0.218311 + 0.692861I$ $b = 0.843176 + 0.035564I$	$2.51211 + 3.57467I$	0
$u = -0.279867 - 1.317280I$ $a = -0.218311 - 0.692861I$ $b = 0.843176 - 0.035564I$	$2.51211 - 3.57467I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.215944 + 1.336170I$ $a = -2.06558 + 0.80088I$ $b = -0.18914 + 3.23351I$	$4.98903 + 3.19900I$	0
$u = -0.215944 - 1.336170I$ $a = -2.06558 - 0.80088I$ $b = -0.18914 - 3.23351I$	$4.98903 - 3.19900I$	0
$u = 0.173241 + 1.368420I$ $a = 0.844181 - 0.077998I$ $b = -1.145210 - 0.270649I$	$7.73393 - 1.79873I$	0
$u = 0.173241 - 1.368420I$ $a = 0.844181 + 0.077998I$ $b = -1.145210 + 0.270649I$	$7.73393 + 1.79873I$	0
$u = 0.228890 + 1.375810I$ $a = -0.37491 - 1.62208I$ $b = 0.514507 - 0.525372I$	$6.95368 - 5.70185I$	0
$u = 0.228890 - 1.375810I$ $a = -0.37491 + 1.62208I$ $b = 0.514507 + 0.525372I$	$6.95368 + 5.70185I$	0
$u = 0.563419 + 0.218408I$ $a = -0.72689 + 2.25592I$ $b = -0.451451 + 0.210468I$	$1.89435 - 2.76342I$	$1.45970 + 7.65568I$
$u = 0.563419 - 0.218408I$ $a = -0.72689 - 2.25592I$ $b = -0.451451 - 0.210468I$	$1.89435 + 2.76342I$	$1.45970 - 7.65568I$
$u = 0.286750 + 1.370360I$ $a = -1.21599 - 1.04777I$ $b = 0.946396 - 0.760155I$	$2.08911 - 8.16087I$	0
$u = 0.286750 - 1.370360I$ $a = -1.21599 + 1.04777I$ $b = 0.946396 + 0.760155I$	$2.08911 + 8.16087I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.553872+0.081016I$ $a=-0.34407-5.14524I$ $b=-0.19417-2.58841I$	$0.484443+0.387619I$	$2.4374+16.9357I$
$u=-0.553872-0.081016I$ $a=-0.34407+5.14524I$ $b=-0.19417+2.58841I$	$0.484443-0.387619I$	$2.4374-16.9357I$
$u=\quad 0.32193+1.42127I$ $a=\quad 0.86794+1.40076I$ $b=-1.30679+1.17931I$	$6.2544-14.3413I$	0
$u=\quad 0.32193-1.42127I$ $a=\quad 0.86794-1.40076I$ $b=-1.30679-1.17931I$	$6.2544+14.3413I$	0
$u=-0.180411+0.503978I$ $a=-0.786744+0.412670I$ $b=\quad 0.291024+0.725866I$	$-0.258833+1.342430I$	$-2.96321-4.26706I$
$u=-0.180411-0.503978I$ $a=-0.786744-0.412670I$ $b=\quad 0.291024-0.725866I$	$-0.258833-1.342430I$	$-2.96321+4.26706I$
$u=-0.31335+1.45744I$ $a=\quad 0.573180-0.672710I$ $b=-0.502148-0.851645I$	$5.06478+6.18924I$	0
$u=-0.31335-1.45744I$ $a=\quad 0.573180+0.672710I$ $b=-0.502148+0.851645I$	$5.06478-6.18924I$	0
$u=\quad 0.02848+1.50835I$ $a=-0.206650-0.321775I$ $b=\quad 1.154670+0.425800I$	$10.43310+4.60033I$	0
$u=\quad 0.02848-1.50835I$ $a=-0.206650+0.321775I$ $b=\quad 1.154670-0.425800I$	$10.43310-4.60033I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.312265 + 0.272412I$ $a = -0.307218 + 0.723253I$ $b = 0.996632 - 0.029094I$	$2.66792 + 0.25713I$	$4.13768 + 2.68186I$
$u = 0.312265 - 0.272412I$ $a = -0.307218 - 0.723253I$ $b = 0.996632 + 0.029094I$	$2.66792 - 0.25713I$	$4.13768 - 2.68186I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^{42} + u^{41} + \cdots + 7u + 1$
c_2	$u^{42} - 7u^{41} + \cdots - u + 1$
c_4	$u^{42} - 3u^{41} + \cdots - u + 1$
c_5	$u^{42} + u^{41} + \cdots + 37u + 17$
c_6, c_9, c_{10}	$u^{42} - u^{41} + \cdots - 3u + 1$
c_7	$u^{42} - u^{41} + \cdots - 10u + 4$
c_8	$u^{42} + u^{41} + \cdots + 21u + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^{42} - 27y^{41} + \cdots - 7y + 1$
c_2	$y^{42} - 3y^{41} + \cdots - 7y + 1$
c_4	$y^{42} - 7y^{41} + \cdots - 3y + 1$
c_5	$y^{42} - 7y^{41} + \cdots - 1539y + 289$
c_6, c_9, c_{10}	$y^{42} + 37y^{41} + \cdots - 3y + 1$
c_7	$y^{42} + 41y^{41} + \cdots + 308y + 16$
c_8	$y^{42} + 33y^{41} + \cdots - 247y + 1$