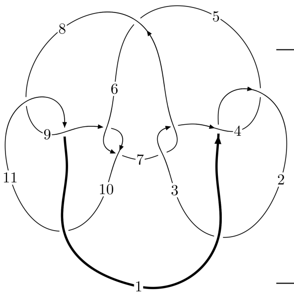
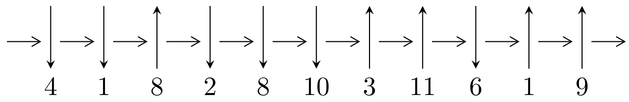
$11n_{21}$ ($K11n_{21}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -14361875u^{29} - 161204177u^{28} + \cdots + 1739563349b - 15107525,$$
$$375600u^{29} + 147247252u^{28} + \cdots + 173956349a - 339788391,\ u^{30} + 2u^{29} + \cdots + 5u + 1\rangle$$
$$I_2^u = \langle -u^4 - u^3 + b + u,\ u^4 + u^3 + a - u,\ u^6 + u^5 - u^4 - 2u^3 + u + 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 36 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.

$\boldsymbol{I_1^u = \langle -1.44 \times 10^7 u^{29} - 1.61 \times 10^8 u^{28} + \cdots + 1.74 \times 10^8 b - 1.51 \times 10^7,\ 3.76 \times 10^5 u^{29} + 1.47 \times 10^8 u^{28} + \cdots + 1.74 \times 10^8 a - 3.40 \times 10^8,\ u^{30} + 2u^{29} + \cdots + 5u + 1 \rangle}$

(i) Arc colorings

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -0.00215916u^{29} - 0.846461u^{28} + \cdots + 4.84191u + 1.95330 \\ 0.0825602u^{29} + 0.926693u^{28} + \cdots - 4.61234u + 0.0868466 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.0731402u^{29} - 1.07799u^{28} + \cdots + 4.44244u + 2.88229 \\ -0.168063u^{29} + 0.837289u^{28} + \cdots - 5.13114u - 0.00271663 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.0227214u^{29} - 0.966033u^{28} + \cdots + 5.16436u + 2.03387 \\ 0.0576797u^{29} + 1.04627u^{28} + \cdots - 4.93479u + 0.00627686 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.826022u^{29} + 0.833975u^{28} + \cdots + 3.65603u - 0.285408 \\ 0.611170u^{29} + 0.604399u^{28} + \cdots + 0.737000u + 0.00440383 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.00440383u^{29} + 0.602363u^{28} + \cdots - 0.220539u + 0.714981 \\ -0.818069u^{29} - 1.42476u^{28} + \cdots - 4.41552u - 0.826022 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} -0.000185822u^{29} + 1.00303u^{28} + \cdots + 2.08683u + 1.72142 \\ -1.43701u^{29} - 2.44140u^{28} + \cdots - 6.47987u - 1.44042 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.000185822u^{29} + 1.00303u^{28} + \cdots + 2.08683u + 1.72142 \\ -1.43701u^{29} - 2.44140u^{28} + \cdots - 6.47987u - 1.44042 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{866077465}{173956349}u^{29} + \frac{1901437249}{173956349}u^{28} + \cdots - \frac{2282279651}{173956349}u - \frac{977861386}{173956349}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{30} - 7u^{29} + \cdots - 6u + 1$
c_2	$u^{30} + 5u^{29} + \cdots - 6u + 1$
c_3, c_7	$u^{30} + 3u^{29} + \cdots + 256u + 64$
c_5	$u^{30} - 6u^{29} + \cdots + 20580u + 19208$
c_6, c_9	$u^{30} + 2u^{29} + \cdots + u + 1$
c_8, c_{11}	$u^{30} + 2u^{29} + \cdots + 5u + 1$
c_{10}	$u^{30} - 18u^{29} + \cdots - 5u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{30} - 5y^{29} + \cdots + 6y + 1$
c_2	$y^{30} + 47y^{29} + \cdots + 6y + 1$
c_3, c_7	$y^{30} - 39y^{29} + \cdots - 32768y + 4096$
c_5	$y^{30} + 50y^{29} + \cdots + 17048751888y + 368947264$
c_6, c_9	$y^{30} - 6y^{29} + \cdots - 5y + 1$
c_8, c_{11}	$y^{30} - 18y^{29} + \cdots - 5y + 1$
c_{10}	$y^{30} - 10y^{29} + \cdots - 65y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.939814 + 0.409006I$ $a = 0.542692 + 0.474424I$ $b = -0.070464 - 0.940333I$	$1.82359 + 1.41916I$	$4.37114 - 2.58812I$
$u = 0.939814 - 0.409006I$ $a = 0.542692 - 0.474424I$ $b = -0.070464 + 0.940333I$	$1.82359 - 1.41916I$	$4.37114 + 2.58812I$
$u = -0.079419 + 0.963815I$ $a = -0.15218 + 2.05632I$ $b = -0.176900 - 0.226479I$	$6.25989 + 7.12850I$	$-1.40582 - 4.37809I$
$u = -0.079419 - 0.963815I$ $a = -0.15218 - 2.05632I$ $b = -0.176900 + 0.226479I$	$6.25989 - 7.12850I$	$-1.40582 + 4.37809I$
$u = 0.948805 + 0.110135I$ $a = -0.59398 - 3.17124I$ $b = 0.79360 + 2.74868I$	$-0.022599 + 0.465680I$	$-0.6583 + 18.0648I$
$u = 0.948805 - 0.110135I$ $a = -0.59398 + 3.17124I$ $b = 0.79360 - 2.74868I$	$-0.022599 - 0.465680I$	$-0.6583 - 18.0648I$
$u = -0.888281 + 0.295107I$ $a = -0.490268 + 1.053800I$ $b = 0.855371 + 0.237317I$	$-1.43852 - 2.74440I$	$-4.63093 + 6.84564I$
$u = -0.888281 - 0.295107I$ $a = -0.490268 - 1.053800I$ $b = 0.855371 - 0.237317I$	$-1.43852 + 2.74440I$	$-4.63093 - 6.84564I$
$u = 0.067859 + 0.917018I$ $a = 0.32834 - 2.10309I$ $b = -0.294181 + 0.136537I$	$6.87113 - 0.27513I$	$-0.474969 - 0.176413I$
$u = 0.067859 - 0.917018I$ $a = 0.32834 + 2.10309I$ $b = -0.294181 - 0.136537I$	$6.87113 + 0.27513I$	$-0.474969 + 0.176413I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.482665 + 0.751757I$ $a = 0.385867 + 0.449128I$ $b = 0.051447 + 0.180666I$	$-2.54830 + 1.34696I$	$-0.63180 - 2.11664I$
$u = -0.482665 - 0.751757I$ $a = 0.385867 - 0.449128I$ $b = 0.051447 - 0.180666I$	$-2.54830 - 1.34696I$	$-0.63180 + 2.11664I$
$u = -1.106080 + 0.345735I$ $a = 0.366766 - 0.102627I$ $b = -1.27946 + 0.98293I$	$2.47975 - 4.75519I$	$1.98342 + 7.46905I$
$u = -1.106080 - 0.345735I$ $a = 0.366766 + 0.102627I$ $b = -1.27946 - 0.98293I$	$2.47975 + 4.75519I$	$1.98342 - 7.46905I$
$u = 1.147400 + 0.208094I$ $a = 0.820240 - 0.163414I$ $b = -1.308780 - 0.210878I$	$2.43554 + 0.65273I$	$3.45718 + 1.02785I$
$u = 1.147400 - 0.208094I$ $a = 0.820240 + 0.163414I$ $b = -1.308780 + 0.210878I$	$2.43554 - 0.65273I$	$3.45718 - 1.02785I$
$u = -1.048800 + 0.622313I$ $a = -0.115184 - 0.254628I$ $b = 0.719820 + 0.562730I$	$-0.88587 - 6.54449I$	$1.05094 + 8.02230I$
$u = -1.048800 - 0.622313I$ $a = -0.115184 + 0.254628I$ $b = 0.719820 - 0.562730I$	$-0.88587 + 6.54449I$	$1.05094 - 8.02230I$
$u = 1.259670 + 0.512922I$ $a = -1.61777 + 0.59362I$ $b = 2.96205 - 0.85782I$	$10.48680 + 5.40724I$	$2.16131 - 3.05902I$
$u = 1.259670 - 0.512922I$ $a = -1.61777 - 0.59362I$ $b = 2.96205 + 0.85782I$	$10.48680 - 5.40724I$	$2.16131 + 3.05902I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.288280 + 0.437041I$ $a = 1.53135 - 0.01716I$ $b = -2.97750 - 0.42856I$	$11.06130 - 4.48245I$	$2.83304 + 3.34080I$
$u = -1.288280 - 0.437041I$ $a = 1.53135 + 0.01716I$ $b = -2.97750 + 0.42856I$	$11.06130 + 4.48245I$	$2.83304 - 3.34080I$
$u = -1.279100 + 0.527426I$ $a = -1.74729 - 0.21786I$ $b = 3.14462 + 0.29801I$	$9.9411 - 12.4680I$	$1.30463 + 7.11505I$
$u = -1.279100 - 0.527426I$ $a = -1.74729 + 0.21786I$ $b = 3.14462 - 0.29801I$	$9.9411 + 12.4680I$	$1.30463 - 7.11505I$
$u = 1.319740 + 0.433091I$ $a = 1.46018 - 0.24476I$ $b = -2.67173 + 0.83307I$	$10.66180 - 2.21335I$	$2.28824 + 1.71320I$
$u = 1.319740 - 0.433091I$ $a = 1.46018 + 0.24476I$ $b = -2.67173 - 0.83307I$	$10.66180 + 2.21335I$	$2.28824 - 1.71320I$
$u = -0.478422 + 0.109834I$ $a = 0.278840 + 0.367495I$ $b = 1.50012 - 0.16483I$	$-2.42930 + 0.00568I$	$-5.08011 + 0.98851I$
$u = -0.478422 - 0.109834I$ $a = 0.278840 - 0.367495I$ $b = 1.50012 + 0.16483I$	$-2.42930 - 0.00568I$	$-5.08011 - 0.98851I$
$u = -0.032239 + 0.476446I$ $a = 1.50239 - 0.16654I$ $b = 0.251989 - 0.423836I$	$-0.41356 + 1.51532I$	$-2.56801 - 4.55893I$
$u = -0.032239 - 0.476446I$ $a = 1.50239 + 0.16654I$ $b = 0.251989 + 0.423836I$	$-0.41356 - 1.51532I$	$-2.56801 + 4.55893I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -5u^4 - 2u^3 + 5u^2 + 6u - 5$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.002190 + 0.295542I$ $a = -0.23185 - 1.65564I$ $b = 0.23185 + 1.65564I$	$0.245672 + 0.924305I$	$1.66012 - 2.42665I$
$u = 1.002190 - 0.295542I$ $a = -0.23185 + 1.65564I$ $b = 0.23185 - 1.65564I$	$0.245672 - 0.924305I$	$1.66012 + 2.42665I$
$u = -0.428243 + 0.664531I$ $a = -0.659772 + 0.298454I$ $b = 0.659772 - 0.298454I$	$-3.53554 + 0.92430I$	$-8.55174 - 0.47256I$
$u = -0.428243 - 0.664531I$ $a = -0.659772 - 0.298454I$ $b = 0.659772 + 0.298454I$	$-3.53554 - 0.92430I$	$-8.55174 + 0.47256I$
$u = -1.073950 + 0.558752I$ $a = -0.108378 + 0.818891I$ $b = 0.108378 - 0.818891I$	$-1.64493 - 5.69302I$	$-3.10838 + 3.92918I$
$u = -1.073950 - 0.558752I$ $a = -0.108378 - 0.818891I$ $b = 0.108378 + 0.818891I$	$-1.64493 + 5.69302I$	$-3.10838 - 3.92918I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^6)(u^{30}-7u^{29}+\cdots-6u+1)$
c_2	$((u+1)^6)(u^{30}+5u^{29}+\cdots-6u+1)$
c_3, c_7	$u^6(u^{30}+3u^{29}+\cdots+256u+64)$
c_4	$((u+1)^6)(u^{30}-7u^{29}+\cdots-6u+1)$
c_5	$(u^6-3u^5+5u^4-4u^3+2u^2-u+1)$ $\cdot(u^{30}-6u^{29}+\cdots+20580u+19208)$
c_6	$(u^6+u^5-u^4-2u^3+u+1)(u^{30}+2u^{29}+\cdots+u+1)$
c_8	$(u^6-u^5-u^4+2u^3-u+1)(u^{30}+2u^{29}+\cdots+5u+1)$
c_9	$(u^6-u^5-u^4+2u^3-u+1)(u^{30}+2u^{29}+\cdots+u+1)$
c_{10}	$(u^6+3u^5+5u^4+4u^3+2u^2+u+1)(u^{30}-18u^{29}+\cdots-5u+1)$
c_{11}	$(u^6+u^5-u^4-2u^3+u+1)(u^{30}+2u^{29}+\cdots+5u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y-1)^6)(y^{30} - 5y^{29} + \cdots + 6y + 1)$
c_2	$((y-1)^6)(y^{30} + 47y^{29} + \cdots + 6y + 1)$
c_3, c_7	$y^6(y^{30} - 39y^{29} + \cdots - 32768y + 4096)$
c_5	$(y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1)$ $\cdot\,(y^{30} + 50y^{29} + \cdots + 17048751888y + 368947264)$
c_6, c_9	$(y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1)(y^{30} - 6y^{29} + \cdots - 5y + 1)$
c_8, c_{11}	$(y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1)(y^{30} - 18y^{29} + \cdots - 5y + 1)$
c_{10}	$(y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1)(y^{30} - 10y^{29} + \cdots - 65y + 1)$