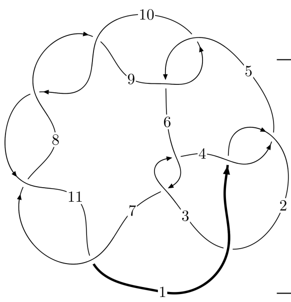
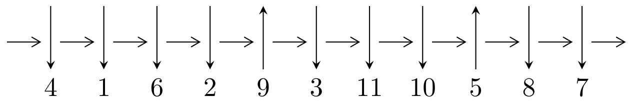
$11a_{21}$ ($K11a_{21}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I^u_1 = \langle & 1428543776353u^{40} + 10013523822393u^{39} + \cdots + 2380906293938b - 13661168161, \\ & - 857126265809u^{40} - 5059671029533u^{39} + \cdots + 2380906293938a + 15522003749453, \\ & u^{41} + 8u^{40} + \cdots + 9u - 1\rangle \\ I^u_2 = \langle & b,\ -u^3 + u^2 + a - 3u + 2,\ u^4 - u^3 + 3u^2 - 2u + 1\rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 45 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.
$\boldsymbol{I_1^u = \langle 1.43\times10^{12}u^{40}+1.00\times10^{13}u^{39}+\cdots+2.38\times10^{12}b-1.37\times10^{10},\ -8.57\times10^{11}u^{40}-5.06\times10^{12}u^{39}+\cdots+2.38\times10^{12}a+1.55\times10^{13},\ u^{41}+8u^{40}+\cdots+9u-1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_8 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}0.360000u^{40}+2.12510u^{39}+\cdots-57.3965u-6.51937\\-0.600000u^{40}-4.20576u^{39}+\cdots-5.97164u+0.00573780\end{pmatrix}$$
$$a_2 = \begin{pmatrix}0.160000u^{40}+0.886423u^{39}+\cdots-56.1906u-6.68003\\-0.400000u^{40}-2.96708u^{39}+\cdots-7.17757u+0.166396\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-0.604092u^{40}-5.23273u^{39}+\cdots-27.0571u-2.48000\\0.598354u^{40}+4.78683u^{39}+\cdots+2.11593u-0.600000\end{pmatrix}$$
$$a_4 = \begin{pmatrix}0.160000u^{40}+0.668312u^{39}+\cdots-66.4027u-8.31995\\-0.600000u^{40}-4.14815u^{39}+\cdots-7.25524u-0.0516402\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}u^2+1\\u^4+2u^2\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-0.200000u^{40}-2.00411u^{39}+\cdots-22.3773u-2.67998\\-0.400000u^{40}-2.19754u^{39}+\cdots+2.95683u-0.604092\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-0.200000u^{40}-2.00411u^{39}+\cdots-22.3773u-2.67998\\-0.400000u^{40}-2.19754u^{39}+\cdots+2.95683u-0.604092\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= \frac{3866826976577}{1190453146969}u^{40} + \frac{30172725798597}{1190453146969}u^{39} + \cdots + \frac{97267270764267}{1190453146969}u - \frac{19437718983710}{1190453146969}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{41} - 5u^{40} + \cdots - 7u + 1$
c_2	$u^{41} + 17u^{40} + \cdots - 21u + 1$
c_3, c_6	$u^{41} - u^{40} + \cdots + 24u + 16$
c_5, c_9	$u^{41} - 2u^{40} + \cdots + u + 1$
c_7, c_8, c_{10} c_{11}	$u^{41} + 8u^{40} + \cdots + 9u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{41} - 17y^{40} + \cdots - 21y - 1$
c_2	$y^{41} + 19y^{40} + \cdots + 319y - 1$
c_3, c_6	$y^{41} + 27y^{40} + \cdots - 3264y - 256$
c_5, c_9	$y^{41} + 8y^{40} + \cdots + 9y - 1$
c_7, c_8, c_{10} c_{11}	$y^{41} + 52y^{40} + \cdots + 289y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.371997 + 0.911661I$ $a = 0.0887599 - 0.0951085I$ $b = 0.944034 + 0.301769I$	$0.02027 + 4.12007I$	$-7.00000 - 7.00432I$
$u = -0.371997 - 0.911661I$ $a = 0.0887599 + 0.0951085I$ $b = 0.944034 - 0.301769I$	$0.02027 - 4.12007I$	$-7.00000 + 7.00432I$
$u = 0.123662 + 0.937506I$ $a = 0.94133 - 1.41174I$ $b = 0.152966 + 1.275670I$	$5.54405 + 0.90504I$	$0. - 2.30521I$
$u = 0.123662 - 0.937506I$ $a = 0.94133 + 1.41174I$ $b = 0.152966 - 1.275670I$	$5.54405 - 0.90504I$	$0. + 2.30521I$
$u = -0.744727 + 0.518203I$ $a = -0.330115 - 0.059884I$ $b = 0.127427 + 0.966899I$	$-0.343144 + 0.381292I$	$-7.00000 + 0.I$
$u = -0.744727 - 0.518203I$ $a = -0.330115 + 0.059884I$ $b = 0.127427 - 0.966899I$	$-0.343144 - 0.381292I$	$-7.00000 + 0.I$
$u = -0.860587 + 0.281389I$ $a = 0.620418 + 0.125659I$ $b = 0.383866 - 1.083520I$	$-1.07493 + 4.80769I$	$-9.34122 - 6.74048I$
$u = -0.860587 - 0.281389I$ $a = 0.620418 - 0.125659I$ $b = 0.383866 + 1.083520I$	$-1.07493 - 4.80769I$	$-9.34122 + 6.74048I$
$u = 0.250188 + 0.801720I$ $a = -1.38496 + 1.41699I$ $b = -0.452932 - 1.292530I$	$4.35267 - 4.76438I$	$-1.23872 + 3.17616I$
$u = 0.250188 - 0.801720I$ $a = -1.38496 - 1.41699I$ $b = -0.452932 + 1.292530I$	$4.35267 + 4.76438I$	$-1.23872 - 3.17616I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.298760 + 0.775703I$ $a = 0.30126 + 2.51541I$ $b = 0.152801 - 0.776585I$	$-1.09017 + 1.98652I$	$-2.92718 - 5.89159I$
$u = -0.298760 - 0.775703I$ $a = 0.30126 - 2.51541I$ $b = 0.152801 + 0.776585I$	$-1.09017 - 1.98652I$	$-2.92718 + 5.89159I$
$u = -0.402696 + 1.111770I$ $a = -0.448898 - 1.278070I$ $b = -0.300924 + 1.194930I$	$4.72505 + 4.10019I$	0
$u = -0.402696 - 1.111770I$ $a = -0.448898 + 1.278070I$ $b = -0.300924 - 1.194930I$	$4.72505 - 4.10019I$	0
$u = -0.563543 + 1.076360I$ $a = 0.77154 + 1.22276I$ $b = 0.544305 - 1.241970I$	$3.04149 + 9.59886I$	0
$u = -0.563543 - 1.076360I$ $a = 0.77154 - 1.22276I$ $b = 0.544305 + 1.241970I$	$3.04149 - 9.59886I$	0
$u = -0.094895 + 0.764233I$ $a = 0.081309 + 0.430953I$ $b = -0.903364 + 0.108240I$	$0.550320 + 0.199179I$	$-3.56736 - 0.22812I$
$u = -0.094895 - 0.764233I$ $a = 0.081309 - 0.430953I$ $b = -0.903364 - 0.108240I$	$0.550320 - 0.199179I$	$-3.56736 + 0.22812I$
$u = -0.560839 + 0.097240I$ $a = 1.30596 - 1.04621I$ $b = 0.579988 + 0.456802I$	$-3.06538 + 0.92602I$	$-14.9814 - 0.1523I$
$u = -0.560839 - 0.097240I$ $a = 1.30596 + 1.04621I$ $b = 0.579988 - 0.456802I$	$-3.06538 - 0.92602I$	$-14.9814 + 0.1523I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.369951 + 0.353558I$ $a = 0.185674 - 0.401147I$ $b = -0.276914 + 0.386438I$	$-0.304070 + 1.129050I$	$-4.15006 - 5.99735I$
$u = -0.369951 - 0.353558I$ $a = 0.185674 + 0.401147I$ $b = -0.276914 - 0.386438I$	$-0.304070 - 1.129050I$	$-4.15006 + 5.99735I$
$u = -0.12602 + 1.51041I$ $a = -0.013258 - 0.326775I$ $b = 0.008065 + 0.612774I$	$5.86173 + 3.10796I$	0
$u = -0.12602 - 1.51041I$ $a = -0.013258 + 0.326775I$ $b = 0.008065 - 0.612774I$	$5.86173 - 3.10796I$	0
$u = 0.379955 + 0.102142I$ $a = 0.22338 + 1.77156I$ $b = -0.210011 + 1.175300I$	$2.27591 + 2.55277I$	$-0.28600 - 3.41736I$
$u = 0.379955 - 0.102142I$ $a = 0.22338 - 1.77156I$ $b = -0.210011 - 1.175300I$	$2.27591 - 2.55277I$	$-0.28600 + 3.41736I$
$u = -0.06786 + 1.66115I$ $a = 0.00695 + 2.26459I$ $b = 0.022295 - 1.118440I$	$7.48443 + 3.29627I$	0
$u = -0.06786 - 1.66115I$ $a = 0.00695 - 2.26459I$ $b = 0.022295 + 1.118440I$	$7.48443 - 3.29627I$	0
$u = -0.02762 + 1.66408I$ $a = 0.518524 - 0.032043I$ $b = -1.212440 + 0.190127I$	$9.18847 + 0.68171I$	0
$u = -0.02762 - 1.66408I$ $a = 0.518524 + 0.032043I$ $b = -1.212440 - 0.190127I$	$9.18847 - 0.68171I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.06444 + 1.66622I$ $a = -0.40564 + 1.80984I$ $b = -0.63341 - 1.39654I$	$13.0504 - 5.9463I$	0
$u = 0.06444 - 1.66622I$ $a = -0.40564 - 1.80984I$ $b = -0.63341 + 1.39654I$	$13.0504 + 5.9463I$	0
$u = -0.09721 + 1.68666I$ $a = -0.502494 - 0.093711I$ $b = 1.213200 + 0.228523I$	$9.10647 + 5.94562I$	0
$u = -0.09721 - 1.68666I$ $a = -0.502494 + 0.093711I$ $b = 1.213200 - 0.228523I$	$9.10647 - 5.94562I$	0
$u = 0.02231 + 1.69742I$ $a = 0.26842 - 1.88152I$ $b = 0.37989 + 1.47255I$	$14.9053 + 0.3952I$	0
$u = 0.02231 - 1.69742I$ $a = 0.26842 + 1.88152I$ $b = 0.37989 - 1.47255I$	$14.9053 - 0.3952I$	0
$u = -0.11803 + 1.73749I$ $a = -0.21725 - 1.84068I$ $b = -0.41152 + 1.45863I$	$14.7445 + 6.3325I$	0
$u = -0.11803 - 1.73749I$ $a = -0.21725 + 1.84068I$ $b = -0.41152 - 1.45863I$	$14.7445 - 6.3325I$	0
$u = -0.16530 + 1.73400I$ $a = 0.35701 + 1.74321I$ $b = 0.65439 - 1.38049I$	$12.7852 + 12.6394I$	0
$u = -0.16530 - 1.73400I$ $a = 0.35701 - 1.74321I$ $b = 0.65439 + 1.38049I$	$12.7852 - 12.6394I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.0589447$ $a = -10.7359$ $b = -0.523441$	-1.19034	-8.28720

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

(i) Arc colorings

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

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

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

$$a_1 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

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

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

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

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

$$a_{10} = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^2+1 \\ u^3-u^2+2u-1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u \\ -u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u \\ -u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 2u^3-2u^2+7u-13$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.395123 + 0.506844I$ $a = -0.95668 + 1.22719I$ $b = 0$	$-1.85594 - 1.41510I$	$-10.51825 + 2.96122I$
$u = 0.395123 - 0.506844I$ $a = -0.95668 - 1.22719I$ $b = 0$	$-1.85594 + 1.41510I$	$-10.51825 - 2.96122I$
$u = 0.10488 + 1.55249I$ $a = -0.043315 + 0.641200I$ $b = 0$	$5.14581 - 3.16396I$	$-8.98175 + 2.83489I$
$u = 0.10488 - 1.55249I$ $a = -0.043315 - 0.641200I$ $b = 0$	$5.14581 + 3.16396I$	$-8.98175 - 2.83489I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^4)(u^{41}-5u^{40}+\cdots-7u+1)$
c_2	$((u+1)^4)(u^{41}+17u^{40}+\cdots-21u+1)$
c_3, c_6	$u^4(u^{41}-u^{40}+\cdots+24u+16)$
c_4	$((u+1)^4)(u^{41}-5u^{40}+\cdots-7u+1)$
c_5	$(u^4-u^3+u^2+1)(u^{41}-2u^{40}+\cdots+u+1)$
c_7, c_8	$(u^4-u^3+3u^2-2u+1)(u^{41}+8u^{40}+\cdots+9u-1)$
c_9	$(u^4+u^3+u^2+1)(u^{41}-2u^{40}+\cdots+u+1)$
c_{10}, c_{11}	$(u^4+u^3+3u^2+2u+1)(u^{41}+8u^{40}+\cdots+9u-1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y-1)^4)(y^{41} - 17y^{40} + \cdots - 21y - 1)$
c_2	$((y-1)^4)(y^{41} + 19y^{40} + \cdots + 319y - 1)$
c_3, c_6	$y^4(y^{41} + 27y^{40} + \cdots - 3264y - 256)$
c_5, c_9	$(y^4 + y^3 + 3y^2 + 2y + 1)(y^{41} + 8y^{40} + \cdots + 9y - 1)$
c_7, c_8, c_{10} c_{11}	$(y^4 + 5y^3 + 7y^2 + 2y + 1)(y^{41} + 52y^{40} + \cdots + 289y - 1)$