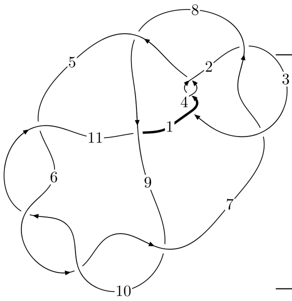
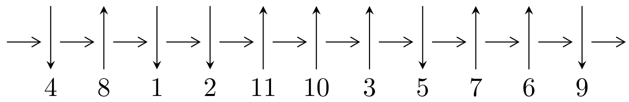
$11a_{258}$ ($K11a_{258}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I^u_1 = \langle 4.93541\times10^{32}u^{40} + 2.04760\times10^{32}u^{39} + \cdots + 1.23008\times10^{33}b - 8.08350\times10^{33},$$
$$1.21871\times10^{33}u^{40} - 1.85520\times10^{33}u^{39} + \cdots + 2.46016\times10^{33}a + 1.04083\times10^{34},\ u^{41} - u^{40} + \cdots + 8u - 16$$

$$I^v_1 = \langle a,\ b-1,\ v^4 - v^3 + v^2 + 1\rangle$$

* 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.

$\boldsymbol{I_1^u = \langle 4.94 \times 10^{32}u^{40} + 2.05 \times 10^{32}u^{39} + \cdots + 1.23 \times 10^{33}b - 8.08 \times 10^{33},\ 1.22 \times 10^{33}u^{40} - 1.86 \times 10^{33}u^{39} + \cdots + 2.46 \times 10^{33}a + 1.04 \times 10^{34},\ u^{41} - u^{40} + \cdots + 8u - 16\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.495378u^{40} + 0.754100u^{39} + \cdots + 8.36593u - 4.23073 \\ -0.401227u^{40} - 0.166461u^{39} + \cdots + 3.25878u + 6.57153 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.00964588u^{40} + 0.868205u^{39} + \cdots + 3.33085u - 12.4271 \\ -0.279000u^{40} + 0.570378u^{39} + \cdots + 6.14986u - 4.36198 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.896605u^{40} + 0.587639u^{39} + \cdots + 11.6247u + 2.34080 \\ -0.401227u^{40} - 0.166461u^{39} + \cdots + 3.25878u + 6.57153 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.896605u^{40} + 0.587639u^{39} + \cdots + 11.6247u + 2.34080 \\ -0.623981u^{40} + 0.594016u^{39} + \cdots + 8.61517u - 1.62808 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.181324u^{40} + 0.551451u^{39} + \cdots + 0.442667u - 9.89004 \\ -0.175096u^{40} + 0.493041u^{39} + \cdots + 5.13059u - 4.57783 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.295942u^{40} + 0.237376u^{39} + \cdots + 3.40554u + 0.455300 \\ -0.311321u^{40} - 0.0909921u^{39} + \cdots + 2.02971u + 5.46031 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.248888u^{40} - 0.460318u^{39} + \cdots - 0.398174u + 9.13315 \\ -0.0375077u^{40} - 0.244171u^{39} + \cdots - 1.75912u + 2.99026 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.248888u^{40} - 0.460318u^{39} + \cdots - 0.398174u + 9.13315 \\ -0.0375077u^{40} - 0.244171u^{39} + \cdots - 1.75912u + 2.99026 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.312617u^{40} + 1.81495u^{39} + \cdots + 9.58739u - 33.8289$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_4	$u^{41} - 5u^{40} + \cdots - 3u + 1$
c_2, c_7	$u^{41} + u^{40} + \cdots + 8u + 16$
c_5, c_6, c_9 c_{10}	$u^{41} + 2u^{40} + \cdots - 3u - 1$
c_8	$u^{41} + 2u^{40} + \cdots - 20u - 100$
c_{11}	$u^{41} - 12u^{40} + \cdots + 549u - 131$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4	$y^{41} - 41y^{40} + \cdots - 13y - 1$
c_2, c_7	$y^{41} + 27y^{40} + \cdots - 960y - 256$
c_5, c_6, c_9 c_{10}	$y^{41} + 48y^{40} + \cdots - 7y - 1$
c_8	$y^{41} - 24y^{40} + \cdots - 163800y - 10000$
c_{11}	$y^{41} - 12y^{40} + \cdots + 112237y - 17161$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.04360$ $a = -0.918815$ $b = 1.34522$	-3.09864	-0.703580
$u = -0.280650 + 1.032300I$ $a = 0.113218 - 0.945326I$ $b = 0.451556 + 0.680540I$	$-0.98467 - 2.16041I$	$0.30534 + 3.36601I$
$u = -0.280650 - 1.032300I$ $a = 0.113218 + 0.945326I$ $b = 0.451556 - 0.680540I$	$-0.98467 + 2.16041I$	$0.30534 - 3.36601I$
$u = -0.636469 + 0.676356I$ $a = -0.663046 + 0.390386I$ $b = 1.123470 - 0.320823I$	$-8.62893 + 1.18234I$	$-6.12242 + 0.09680I$
$u = -0.636469 - 0.676356I$ $a = -0.663046 - 0.390386I$ $b = 1.123470 + 0.320823I$	$-8.62893 - 1.18234I$	$-6.12242 - 0.09680I$
$u = 0.067485 + 1.087720I$ $a = -1.345840 - 0.268602I$ $b = -1.365970 + 0.031939I$	$-3.50700 + 1.95785I$	$-4.15911 - 3.79195I$
$u = 0.067485 - 1.087720I$ $a = -1.345840 + 0.268602I$ $b = -1.365970 - 0.031939I$	$-3.50700 - 1.95785I$	$-4.15911 + 3.79195I$
$u = 0.053492 + 1.097010I$ $a = -0.119204 + 0.861224I$ $b = 0.644526 - 0.652721I$	$-3.46087 - 0.57126I$	$-6.38744 + 1.36032I$
$u = 0.053492 - 1.097010I$ $a = -0.119204 - 0.861224I$ $b = 0.644526 + 0.652721I$	$-3.46087 + 0.57126I$	$-6.38744 - 1.36032I$
$u = -0.231068 + 1.076220I$ $a = -1.18409 + 0.88552I$ $b = -1.359660 - 0.109695I$	$-9.84300 - 4.44580I$	$-7.49047 + 4.00982I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.231068-1.076220I$ $a=-1.18409-0.88552I$ $b=-1.359660+0.109695I$	$-9.84300+4.44580I$	$-7.49047-4.00982I$
$u=0.575963+0.681143I$ $a=0.654397+0.985833I$ $b=0.064994-0.588385I$	$-5.44874+2.20051I$	$-0.49288-3.58387I$
$u=0.575963-0.681143I$ $a=0.654397-0.985833I$ $b=0.064994+0.588385I$	$-5.44874-2.20051I$	$-0.49288+3.58387I$
$u=-1.179440+0.158362I$ $a=-0.994717+0.088396I$ $b=1.409360-0.075417I$	$-5.20973+3.10308I$	$-5.68137-4.55677I$
$u=-1.179440-0.158362I$ $a=-0.994717-0.088396I$ $b=1.409360+0.075417I$	$-5.20973-3.10308I$	$-5.68137+4.55677I$
$u=0.353950+1.159500I$ $a=0.079020+1.089230I$ $b=0.450262-0.797995I$	$-2.77750+5.51756I$	$-3.79773-7.77564I$
$u=0.353950-1.159500I$ $a=0.079020-1.089230I$ $b=0.450262+0.797995I$	$-2.77750-5.51756I$	$-3.79773+7.77564I$
$u=0.005676+1.227250I$ $a=-0.228021-0.942171I$ $b=0.720117+0.732589I$	$-11.55890+2.26622I$	$-7.69126-0.18572I$
$u=0.005676-1.227250I$ $a=-0.228021+0.942171I$ $b=0.720117-0.732589I$	$-11.55890-2.26622I$	$-7.69126+0.18572I$
$u=-0.383325+1.244490I$ $a=0.043543-1.163710I$ $b=0.463101+0.864387I$	$-10.75100-7.67961I$	$-5.88345+5.74816I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.383325 - 1.244490I$ $a = 0.043543 + 1.163710I$ $b = 0.463101 - 0.864387I$	$-10.75100 + 7.67961I$	$-5.88345 - 5.74816I$
$u = 1.287610 + 0.202232I$ $a = -1.055360 - 0.112449I$ $b = 1.46107 + 0.09654I$	$-13.2971 - 5.0740I$	$-7.49177 + 2.86395I$
$u = 1.287610 - 0.202232I$ $a = -1.055360 + 0.112449I$ $b = 1.46107 - 0.09654I$	$-13.2971 + 5.0740I$	$-7.49177 - 2.86395I$
$u = -0.637500 + 0.135734I$ $a = 1.71237 - 0.80495I$ $b = -0.363345 + 0.258087I$	$-7.29387 + 3.70140I$	$0.13489 - 3.24211I$
$u = -0.637500 - 0.135734I$ $a = 1.71237 + 0.80495I$ $b = -0.363345 - 0.258087I$	$-7.29387 - 3.70140I$	$0.13489 + 3.24211I$
$u = -0.442927 + 0.446451I$ $a = 0.885936 - 0.663779I$ $b = 0.002285 + 0.351914I$	$0.739118 - 0.963294I$	$5.38374 + 5.24951I$
$u = -0.442927 - 0.446451I$ $a = 0.885936 + 0.663779I$ $b = 0.002285 - 0.351914I$	$0.739118 + 0.963294I$	$5.38374 - 5.24951I$
$u = 0.545126 + 0.215241I$ $a = 1.37573 + 0.63189I$ $b = -0.218730 - 0.254700I$	$0.06188 - 1.89506I$	$3.00107 + 4.96508I$
$u = 0.545126 - 0.215241I$ $a = 1.37573 - 0.63189I$ $b = -0.218730 + 0.254700I$	$0.06188 + 1.89506I$	$3.00107 - 4.96508I$
$u = 0.332351 + 0.473594I$ $a = -0.483789 - 0.209918I$ $b = 0.984199 + 0.167639I$	$-1.84031 - 0.69258I$	$-6.89864 - 1.74884I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.332351 - 0.473594I$ $a = -0.483789 + 0.209918I$ $b = 0.984199 - 0.167639I$	$-1.84031 + 0.69258I$	$-6.89864 + 1.74884I$
$u = 0.52227 + 1.35643I$ $a = -0.110639 - 1.064090I$ $b = -1.49556 + 0.25090I$	$-7.31234 + 5.60210I$	0
$u = 0.52227 - 1.35643I$ $a = -0.110639 + 1.064090I$ $b = -1.49556 - 0.25090I$	$-7.31234 - 5.60210I$	0
$u = -0.41034 + 1.42300I$ $a = -0.140257 + 0.816586I$ $b = -1.52685 - 0.19609I$	$-10.55130 - 2.41180I$	0
$u = -0.41034 - 1.42300I$ $a = -0.140257 - 0.816586I$ $b = -1.52685 + 0.19609I$	$-10.55130 + 2.41180I$	0
$u = -0.60199 + 1.38207I$ $a = 0.024627 + 1.133790I$ $b = -1.50901 - 0.28951I$	$-9.13999 - 9.48739I$	0
$u = -0.60199 - 1.38207I$ $a = 0.024627 - 1.133790I$ $b = -1.50901 + 0.28951I$	$-9.13999 + 9.48739I$	0
$u = 0.65669 + 1.41457I$ $a = 0.127888 - 1.155240I$ $b = -1.52575 + 0.31574I$	$-17.2037 + 11.9877I$	0
$u = 0.65669 - 1.41457I$ $a = 0.127888 + 1.155240I$ $b = -1.52575 - 0.31574I$	$-17.2037 - 11.9877I$	0
$u = 0.38128 + 1.53983I$ $a = 0.017651 - 0.667778I$ $b = -1.58265 + 0.18117I$	$-19.3092 + 0.9583I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.38128 - 1.53983I$ $a = 0.017651 + 0.667778I$ $b = -1.58265 - 0.18117I$	$-19.3092 - 0.9583I$	0

II. $I_1^v = \langle a,\ b-1,\ v^4 - v^3 + v^2 + 1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} v \\ v \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

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

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

$$a_6 = \begin{pmatrix} v^3 - v^2 - 1 \\ v^3 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -v^2 \\ -v^2 - 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -v^2 \\ -v^2 - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4v^2 - 5v - 1$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = -0.351808 + 0.720342I$ $a = 0$ $b = 1.00000$	$-1.43393 + 1.41510I$	$-0.82145 - 5.62908I$
$v = -0.351808 - 0.720342I$ $a = 0$ $b = 1.00000$	$-1.43393 - 1.41510I$	$-0.82145 + 5.62908I$
$v = 0.851808 + 0.911292I$ $a = 0$ $b = 1.00000$	$-8.43568 - 3.16396I$	$-5.67855 + 1.65351I$
$v = 0.851808 - 0.911292I$ $a = 0$ $b = 1.00000$	$-8.43568 + 3.16396I$	$-5.67855 - 1.65351I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^4)(u^{41}-5u^{40}+\cdots-3u+1)$
c_2, c_7	$u^4(u^{41}+u^{40}+\cdots+8u+16)$
c_3, c_4	$((u+1)^4)(u^{41}-5u^{40}+\cdots-3u+1)$
c_5, c_6	$(u^4+u^3+3u^2+2u+1)(u^{41}+2u^{40}+\cdots-3u-1)$
c_8	$(u^4-u^3+u^2+1)(u^{41}+2u^{40}+\cdots-20u-100)$
c_9, c_{10}	$(u^4-u^3+3u^2-2u+1)(u^{41}+2u^{40}+\cdots-3u-1)$
c_{11}	$(u^4-u^3+u^2+1)(u^{41}-12u^{40}+\cdots+549u-131)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4	$((y-1)^4)(y^{41} - 41y^{40} + \cdots - 13y - 1)$
c_2, c_7	$y^4(y^{41} + 27y^{40} + \cdots - 960y - 256)$
c_5, c_6, c_9 c_{10}	$(y^4 + 5y^3 + 7y^2 + 2y + 1)(y^{41} + 48y^{40} + \cdots - 7y - 1)$
c_8	$(y^4 + y^3 + 3y^2 + 2y + 1)(y^{41} - 24y^{40} + \cdots - 163800y - 10000)$
c_{11}	$(y^4 + y^3 + 3y^2 + 2y + 1)(y^{41} - 12y^{40} + \cdots + 112237y - 17161)$