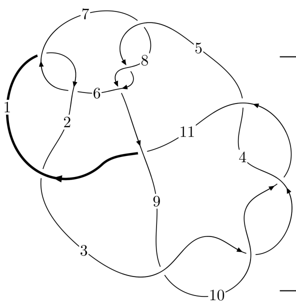
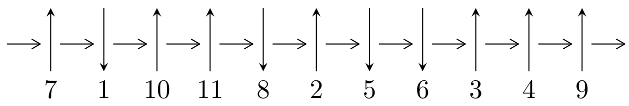
$11a_{221}$ ($K11a_{221}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 2.58574 \times 10^{22} u^{40} + 1.94775 \times 10^{22} u^{39} + \cdots + 4.92580 \times 10^{22} b + 1.64635 \times 10^{22},$$
$$- 8.09547 \times 10^{21} u^{40} + 5.99125 \times 10^{21} u^{39} + \cdots + 1.97032 \times 10^{23} a + 1.41113 \times 10^{23},\ u^{41} + u^{40} + \cdots - u^2 +$$

$$I_1^v = \langle a,\ b - 1,\ v^2 + v - 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 43 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.

$\boldsymbol{I_1^u = \langle 2.59\times10^{22}u^{40}+1.95\times10^{22}u^{39}+\cdots+4.93\times10^{22}b+1.65\times10^{22},\ -8.10\times10^{21}u^{40}+5.99\times10^{21}u^{39}+\cdots+1.97\times10^{23}a+1.41\times10^{23},\ u^{41}+u^{40}+\cdots-u^2+4\rangle}$

(i) Arc colorings

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

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

$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u \\ u^3+u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^3 \\ u^5+u^3+u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.0410870u^{40} - 0.0304075u^{39} + \cdots + 2.81027u - 0.716193 \\ -0.524938u^{40} - 0.395417u^{39} + \cdots - 2.01455u - 0.334229 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.467248u^{40} - 0.157588u^{39} + \cdots + 1.16973u - 0.888909 \\ -0.369945u^{40} - 0.267670u^{39} + \cdots - 1.30888u - 0.201698 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.483851u^{40} - 0.425824u^{39} + \cdots + 0.795719u - 1.05042 \\ -0.524938u^{40} - 0.395417u^{39} + \cdots - 2.01455u - 0.334229 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.483851u^{40} - 0.425824u^{39} + \cdots + 0.795719u - 1.05042 \\ 0.0665166u^{40} + 0.364543u^{39} + \cdots + 0.0791500u + 0.566335 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.526272u^{40} - 0.615949u^{39} + \cdots - 0.847432u - 2.92163 \\ -0.400524u^{40} + 0.0414901u^{39} + \cdots - 0.0904238u - 0.792124 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.405800u^{40} + 0.723766u^{39} + \cdots - 0.573295u + 3.61744 \\ 0.260796u^{40} + 0.239160u^{39} + \cdots + 0.874019u + 0.565373 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.405800u^{40} + 0.723766u^{39} + \cdots - 0.573295u + 3.61744 \\ 0.260796u^{40} + 0.239160u^{39} + \cdots + 0.874019u + 0.565373 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{3657064353645414395094}{2462902468627121311351 7}u^{40} - \frac{4553414310617937624981 5}{2462902468627121311351 7}u^{39} + \cdots + \frac{1595364806846580331887 44}{2462902468627121311351 7}u - \frac{1108620139900682778487 29}{2462902468627121311351 7}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{41} + u^{40} + \cdots - u^2 + 4$
c_2	$u^{41} + 15u^{40} + \cdots + 8u - 16$
c_3, c_4, c_9 c_{10}	$u^{41} - 2u^{40} + \cdots - u - 1$
c_5, c_7, c_8	$u^{41} - 3u^{40} + \cdots - 6u + 1$
c_{11}	$u^{41} + 12u^{40} + \cdots - 503u - 73$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{41} + 15y^{40} + \cdots + 8y - 16$
c_2	$y^{41} + 19y^{40} + \cdots + 16416y - 256$
c_3, c_4, c_9 c_{10}	$y^{41} - 48y^{40} + \cdots + 3y - 1$
c_5, c_7, c_8	$y^{41} - 35y^{40} + \cdots + 62y - 1$
c_{11}	$y^{41} - 12y^{40} + \cdots + 23351y - 5329$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.122270 + 1.001390I$ $a = -0.003929 - 0.811821I$ $b = 0.562217 + 0.598084I$	$4.86048 - 2.17709I$	$3.44971 + 3.79306I$
$u = -0.122270 - 1.001390I$ $a = -0.003929 + 0.811821I$ $b = 0.562217 - 0.598084I$	$4.86048 + 2.17709I$	$3.44971 - 3.79306I$
$u = 0.551581 + 0.859891I$ $a = 0.449439 + 1.057630I$ $b = 0.181877 - 0.689383I$	$0.32453 + 2.20665I$	$2.42130 - 3.15065I$
$u = 0.551581 - 0.859891I$ $a = 0.449439 - 1.057630I$ $b = 0.181877 + 0.689383I$	$0.32453 - 2.20665I$	$2.42130 + 3.15065I$
$u = 1.02478$ $a = -0.908342$ $b = 1.33636$	2.95183	3.34750
$u = -0.679117 + 0.681890I$ $a = 0.700414 - 1.106750I$ $b = 0.001662 + 0.650682I$	$2.92066 + 0.49867I$	$9.33255 - 1.40381I$
$u = -0.679117 - 0.681890I$ $a = 0.700414 + 1.106750I$ $b = 0.001662 - 0.650682I$	$2.92066 - 0.49867I$	$9.33255 + 1.40381I$
$u = -0.545090 + 0.785733I$ $a = -0.69091 + 2.59079I$ $b = -1.209880 - 0.257619I$	$7.70281 - 1.46253I$	$4.97551 + 4.38414I$
$u = -0.545090 - 0.785733I$ $a = -0.69091 - 2.59079I$ $b = -1.209880 + 0.257619I$	$7.70281 + 1.46253I$	$4.97551 - 4.38414I$
$u = 0.815378 + 0.666881I$ $a = 0.75804 + 1.25639I$ $b = -0.085807 - 0.724003I$	$11.08220 - 2.09439I$	$10.58118 + 0.49911I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.815378 - 0.666881I$ $a = 0.75804 - 1.25639I$ $b = -0.085807 + 0.724003I$	$11.08220 + 2.09439I$	$10.58118 - 0.49911I$
$u = 0.925345 + 0.534295I$ $a = -0.848621 - 0.304695I$ $b = 1.281480 + 0.256105I$	$-1.06929 - 3.78517I$	$3.33312 + 5.32313I$
$u = 0.925345 - 0.534295I$ $a = -0.848621 + 0.304695I$ $b = 1.281480 - 0.256105I$	$-1.06929 + 3.78517I$	$3.33312 - 5.32313I$
$u = 0.512185 + 0.958100I$ $a = -0.69987 - 1.88985I$ $b = -1.298390 + 0.245537I$	$-1.14433 + 2.71303I$	$3.06796 - 2.16565I$
$u = 0.512185 - 0.958100I$ $a = -0.69987 + 1.88985I$ $b = -1.298390 - 0.245537I$	$-1.14433 - 2.71303I$	$3.06796 + 2.16565I$
$u = 0.471678 + 0.778273I$ $a = -0.539722 - 0.459733I$ $b = 1.018830 + 0.371555I$	$-0.495471 + 1.323540I$	$2.90171 - 5.22285I$
$u = 0.471678 - 0.778273I$ $a = -0.539722 + 0.459733I$ $b = 1.018830 - 0.371555I$	$-0.495471 - 1.323540I$	$2.90171 + 5.22285I$
$u = -0.579330 + 0.928710I$ $a = -0.625557 + 0.571406I$ $b = 1.082590 - 0.468575I$	$7.20747 - 3.04463I$	$5.27357 + 2.39823I$
$u = -0.579330 - 0.928710I$ $a = -0.625557 - 0.571406I$ $b = 1.082590 + 0.468575I$	$7.20747 + 3.04463I$	$5.27357 - 2.39823I$
$u = -0.790308 + 0.341056I$ $a = -0.772495 + 0.188053I$ $b = 1.220600 - 0.156477I$	$-2.45808 + 0.68070I$	$-0.75996 + 1.22832I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.790308 - 0.341056I$ $a = -0.772495 - 0.188053I$ $b = 1.220600 + 0.156477I$	$-2.45808 - 0.68070I$	$-0.75996 - 1.22832I$
$u = -0.637944 + 0.967189I$ $a = 0.396872 - 1.193270I$ $b = 0.182840 + 0.800800I$	$2.06145 - 5.60392I$	$6.28993 + 7.67426I$
$u = -0.637944 - 0.967189I$ $a = 0.396872 + 1.193270I$ $b = 0.182840 - 0.800800I$	$2.06145 + 5.60392I$	$6.28993 - 7.67426I$
$u = -1.003890 + 0.629446I$ $a = -0.896695 + 0.361308I$ $b = 1.320330 - 0.305527I$	$6.66704 + 5.82869I$	$5.58070 - 3.39540I$
$u = -1.003890 - 0.629446I$ $a = -0.896695 - 0.361308I$ $b = 1.320330 + 0.305527I$	$6.66704 - 5.82869I$	$5.58070 + 3.39540I$
$u = -0.070929 + 1.209930I$ $a = -0.919362 + 0.220397I$ $b = -1.42404 - 0.03377I$	$-7.93550 - 1.94462I$	$-3.70499 + 3.68184I$
$u = -0.070929 - 1.209930I$ $a = -0.919362 - 0.220397I$ $b = -1.42404 + 0.03377I$	$-7.93550 + 1.94462I$	$-3.70499 - 3.68184I$
$u = -0.028788 + 0.761611I$ $a = -0.057057 + 0.439082I$ $b = 0.642973 - 0.323659I$	$-1.37623 + 1.10536I$	$-2.43864 - 5.69625I$
$u = -0.028788 - 0.761611I$ $a = -0.057057 - 0.439082I$ $b = 0.642973 + 0.323659I$	$-1.37623 - 1.10536I$	$-2.43864 + 5.69625I$
$u = 0.703874 + 1.021500I$ $a = 0.382110 + 1.273810I$ $b = 0.170327 - 0.865341I$	$9.99184 + 7.80021I$	$8.36490 - 5.64860I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.703874 - 1.021500I$ $a = 0.382110 - 1.273810I$ $b = 0.170327 + 0.865341I$	$9.99184 - 7.80021I$	$8.36490 + 5.64860I$
$u = -0.601596 + 1.090350I$ $a = -0.30873 + 1.63089I$ $b = -1.364280 - 0.291615I$	$-4.56137 - 5.79983I$	$-1.81042 + 3.80578I$
$u = -0.601596 - 1.090350I$ $a = -0.30873 - 1.63089I$ $b = -1.364280 + 0.291615I$	$-4.56137 + 5.79983I$	$-1.81042 - 3.80578I$
$u = 0.241330 + 1.238970I$ $a = -0.698673 - 0.677867I$ $b = -1.43772 + 0.11527I$	$-1.67461 + 4.38863I$	$0.33432 - 3.52334I$
$u = 0.241330 - 1.238970I$ $a = -0.698673 + 0.677867I$ $b = -1.43772 - 0.11527I$	$-1.67461 - 4.38863I$	$0.33432 + 3.52334I$
$u = 0.689794 + 1.111280I$ $a = -0.10318 - 1.66094I$ $b = -1.37517 + 0.33619I$	$-2.86444 + 9.70772I$	$1.83000 - 8.47841I$
$u = 0.689794 - 1.111280I$ $a = -0.10318 + 1.66094I$ $b = -1.37517 - 0.33619I$	$-2.86444 - 9.70772I$	$1.83000 + 8.47841I$
$u = -0.758005 + 1.117850I$ $a = 0.03150 + 1.68920I$ $b = -1.37919 - 0.37091I$	$5.09814 - 12.24280I$	$4.42370 + 7.04565I$
$u = -0.758005 - 1.117850I$ $a = 0.03150 - 1.68920I$ $b = -1.37919 + 0.37091I$	$5.09814 + 12.24280I$	$4.42370 - 7.04565I$
$u = -0.573323$ $a = 2.01606$ $b = -0.386383$	8.19168	12.7990

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.360746$ $a = 1.28515$ $b = -0.132462$	0.783707	12.9610

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 3$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 0.618034$ $a = 0$ $b = 1.00000$	-0.657974	3.00000
$v = -1.61803$ $a = 0$ $b = 1.00000$	7.23771	3.00000

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^2(u^{41} + u^{40} + \cdots - u^2 + 4)$
c_2	$u^2(u^{41} + 15u^{40} + \cdots + 8u - 16)$
c_3, c_4	$(u^2 + u - 1)(u^{41} - 2u^{40} + \cdots - u - 1)$
c_5	$((u - 1)^2)(u^{41} - 3u^{40} + \cdots - 6u + 1)$
c_7, c_8	$((u + 1)^2)(u^{41} - 3u^{40} + \cdots - 6u + 1)$
c_9, c_{10}	$(u^2 - u - 1)(u^{41} - 2u^{40} + \cdots - u - 1)$
c_{11}	$(u^2 + u - 1)(u^{41} + 12u^{40} + \cdots - 503u - 73)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^2(y^{41} + 15y^{40} + \cdots + 8y - 16)$
c_2	$y^2(y^{41} + 19y^{40} + \cdots + 16416y - 256)$
c_3, c_4, c_9 c_{10}	$(y^2 - 3y + 1)(y^{41} - 48y^{40} + \cdots + 3y - 1)$
c_5, c_7, c_8	$((y-1)^2)(y^{41} - 35y^{40} + \cdots + 62y - 1)$
c_{11}	$(y^2 - 3y + 1)(y^{41} - 12y^{40} + \cdots + 23351y - 5329)$