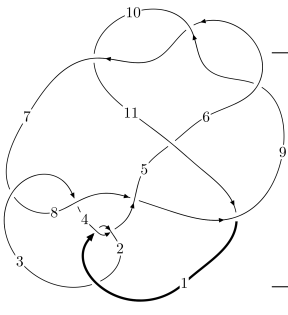
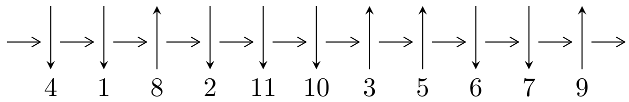
$11a_{34}$ $(K11a_{34})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -u^{63} - u^{62} + \cdots + b - u,\ u^{39} - 18u^{37} + \cdots - 2u^2 + a,\ u^{64} + 2u^{63} + \cdots + u - 1 \rangle$$
$$I_2^u = \langle b - 1,\ -u^3 + a + 2u,\ u^5 - u^4 - 2u^3 + u^2 + u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 69 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.

$$\boldsymbol{I_1^u = \langle -u^{63}-u^{62}+\cdots+b-u,\ u^{39}-18u^{37}+\cdots-2u^2+a,\ u^{64}+2u^{63}+\cdots+u-1\rangle}$$

(i) Arc colorings

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

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

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

$$a_6 = \begin{pmatrix} u \\ -u^3+u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^{39}+18u^{37}+\cdots+6u^3+2u^2 \\ u^{63}+u^{62}+\cdots+u^2+u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^3+2u \\ -u^3+u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^{63}+u^{62}+\cdots-u^2+2u \\ -u^{63}-u^{62}+\cdots-u^3-u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^2+1 \\ u^4-2u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^6-3u^4+2u^2+1 \\ -u^8+4u^6-4u^4 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^{63}+u^{62}+\cdots-u-1 \\ u^{63}+u^{62}+\cdots+u^3+2u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^{10}+5u^8-8u^6+3u^4+u^2+1 \\ -u^{10}+4u^8-5u^6+2u^4-u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^{10}+5u^8-8u^6+3u^4+u^2+1 \\ -u^{10}+4u^8-5u^6+2u^4-u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -6u^{63}-4u^{62}+\cdots-13u+2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{64} - 6u^{63} + \cdots + 3u - 1$
c_2	$u^{64} + 30u^{63} + \cdots + 3u + 1$
c_3, c_7	$u^{64} + u^{63} + \cdots + 96u + 32$
c_5	$u^{64} - 6u^{63} + \cdots + 5u - 1$
c_6, c_9, c_{10}	$u^{64} + 2u^{63} + \cdots + u - 1$
c_8	$u^{64} - 2u^{63} + \cdots + 8204u - 1960$
c_{11}	$u^{64} + 14u^{63} + \cdots + 2787u + 207$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{64} - 30y^{63} + \cdots - 3y + 1$
c_2	$y^{64} + 14y^{63} + \cdots + 13y + 1$
c_3, c_7	$y^{64} - 33y^{63} + \cdots - 14848y + 1024$
c_5	$y^{64} - 2y^{63} + \cdots - 9y + 1$
c_6, c_9, c_{10}	$y^{64} - 58y^{63} + \cdots - y + 1$
c_8	$y^{64} - 18y^{63} + \cdots - 40328176y + 3841600$
c_{11}	$y^{64} + 18y^{63} + \cdots + 1021851y + 42849$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.004890 + 0.212052I$ $a = 0.250176 - 1.256930I$ $b = -0.972468 + 0.330740I$	$3.37131 - 1.86053I$	0
$u = 1.004890 - 0.212052I$ $a = 0.250176 + 1.256930I$ $b = -0.972468 - 0.330740I$	$3.37131 + 1.86053I$	0
$u = -1.055590 + 0.097412I$ $a = 0.83771 - 1.53205I$ $b = -0.452362 + 0.922072I$	$-1.58334 + 2.05666I$	0
$u = -1.055590 - 0.097412I$ $a = 0.83771 + 1.53205I$ $b = -0.452362 - 0.922072I$	$-1.58334 - 2.05666I$	0
$u = 1.08657$ $a = 0.517514$ $b = 1.28011$	-2.98700	0
$u = 1.076070 + 0.243448I$ $a = 0.50549 + 1.44435I$ $b = 0.069484 - 0.831677I$	$1.75966 - 7.47908I$	0
$u = 1.076070 - 0.243448I$ $a = 0.50549 - 1.44435I$ $b = 0.069484 + 0.831677I$	$1.75966 + 7.47908I$	0
$u = 0.292951 + 0.725218I$ $a = -3.13866 + 0.47208I$ $b = -2.45175 + 0.82611I$	$2.46662 - 11.29940I$	$-1.16462 + 9.08913I$
$u = 0.292951 - 0.725218I$ $a = -3.13866 - 0.47208I$ $b = -2.45175 - 0.82611I$	$2.46662 + 11.29940I$	$-1.16462 - 9.08913I$
$u = 0.674453 + 0.386464I$ $a = -0.00066 - 2.55544I$ $b = -1.110180 - 0.550037I$	$1.05339 + 7.31803I$	$-3.59936 - 4.11166I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.674453 - 0.386464I$ $a = -0.00066 + 2.55544I$ $b = -1.110180 + 0.550037I$	$1.05339 - 7.31803I$	$-3.59936 + 4.11166I$
$u = 0.705088 + 0.302401I$ $a = 0.83956 + 1.15317I$ $b = 0.077388 - 0.254328I$	$3.02952 + 1.83201I$	$-0.533486 + 0.085386I$
$u = 0.705088 - 0.302401I$ $a = 0.83956 - 1.15317I$ $b = 0.077388 + 0.254328I$	$3.02952 - 1.83201I$	$-0.533486 - 0.085386I$
$u = 0.265999 + 0.717941I$ $a = 1.40926 + 0.47850I$ $b = 1.178360 + 0.621823I$	$4.64833 - 5.64259I$	$2.08406 + 5.05177I$
$u = 0.265999 - 0.717941I$ $a = 1.40926 - 0.47850I$ $b = 1.178360 - 0.621823I$	$4.64833 + 5.64259I$	$2.08406 - 5.05177I$
$u = -0.268310 + 0.684190I$ $a = -3.11925 - 1.34879I$ $b = -2.29400 - 1.31119I$	$-0.18871 + 5.19299I$	$-2.32409 - 6.82469I$
$u = -0.268310 - 0.684190I$ $a = -3.11925 + 1.34879I$ $b = -2.29400 + 1.31119I$	$-0.18871 - 5.19299I$	$-2.32409 + 6.82469I$
$u = 0.166461 + 0.708672I$ $a = -1.78632 + 0.78559I$ $b = -1.57846 + 0.71331I$	$5.88443 - 1.71228I$	$4.06856 + 3.31380I$
$u = 0.166461 - 0.708672I$ $a = -1.78632 - 0.78559I$ $b = -1.57846 - 0.71331I$	$5.88443 + 1.71228I$	$4.06856 - 3.31380I$
$u = -1.27342$ $a = 0.512497$ $b = -0.111947$	-2.82174	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.379910 + 0.618311I$ $a = 0.888593 - 0.950785I$ $b = 0.785579 + 0.082329I$	$-1.309430 + 0.220190I$	$-2.16669 + 0.94520I$
$u = -0.379910 - 0.618311I$ $a = 0.888593 + 0.950785I$ $b = 0.785579 - 0.082329I$	$-1.309430 - 0.220190I$	$-2.16669 - 0.94520I$
$u = 0.116871 + 0.709884I$ $a = 1.79401 - 0.11144I$ $b = 1.312960 + 0.524885I$	$4.64291 + 3.88634I$	$2.43594 - 2.51707I$
$u = 0.116871 - 0.709884I$ $a = 1.79401 + 0.11144I$ $b = 1.312960 - 0.524885I$	$4.64291 - 3.88634I$	$2.43594 + 2.51707I$
$u = -0.460178 + 0.533945I$ $a = 0.637038 - 0.795810I$ $b = 1.111230 - 0.236500I$	$-1.65255 + 3.56868I$	$-3.94595 - 7.64427I$
$u = -0.460178 - 0.533945I$ $a = 0.637038 + 0.795810I$ $b = 1.111230 + 0.236500I$	$-1.65255 - 3.56868I$	$-3.94595 + 7.64427I$
$u = 0.259055 + 0.653388I$ $a = 1.06464 + 0.97600I$ $b = 0.990905 - 0.182467I$	$-1.20405 - 2.76775I$	$-0.87874 + 6.15771I$
$u = 0.259055 - 0.653388I$ $a = 1.06464 - 0.97600I$ $b = 0.990905 + 0.182467I$	$-1.20405 + 2.76775I$	$-0.87874 - 6.15771I$
$u = -0.204298 + 0.641678I$ $a = 2.07861 - 0.64563I$ $b = 1.34976 - 0.78269I$	$0.748257 + 0.939190I$	$0.11212 - 1.46039I$
$u = -0.204298 - 0.641678I$ $a = 2.07861 + 0.64563I$ $b = 1.34976 + 0.78269I$	$0.748257 - 0.939190I$	$0.11212 + 1.46039I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.319680 + 0.270463I$ $a = 0.628923 - 0.555572I$ $b = 2.00427 + 0.11792I$	$0.150980 - 0.347116I$	0
$u = -1.319680 - 0.270463I$ $a = 0.628923 + 0.555572I$ $b = 2.00427 - 0.11792I$	$0.150980 + 0.347116I$	0
$u = -1.353850 + 0.278392I$ $a = -0.922498 + 0.572074I$ $b = -1.59733 - 1.65323I$	$1.08775 + 5.28117I$	0
$u = -1.353850 - 0.278392I$ $a = -0.922498 - 0.572074I$ $b = -1.59733 + 1.65323I$	$1.08775 - 5.28117I$	0
$u = -0.556271 + 0.257738I$ $a = 1.06140 + 2.71158I$ $b = -0.484179 + 0.678880I$	$-1.60289 - 1.70495I$	$-6.10429 + 1.65168I$
$u = -0.556271 - 0.257738I$ $a = 1.06140 - 2.71158I$ $b = -0.484179 - 0.678880I$	$-1.60289 + 1.70495I$	$-6.10429 - 1.65168I$
$u = 1.387450 + 0.186851I$ $a = -0.335032 + 0.455289I$ $b = 0.124901 + 1.401000I$	$-5.22435 - 3.56448I$	0
$u = 1.387450 - 0.186851I$ $a = -0.335032 - 0.455289I$ $b = 0.124901 - 1.401000I$	$-5.22435 + 3.56448I$	0
$u = 1.384430 + 0.250118I$ $a = 0.470700 + 0.975593I$ $b = 2.41332 + 0.37758I$	$-4.32280 - 4.18388I$	0
$u = 1.384430 - 0.250118I$ $a = 0.470700 - 0.975593I$ $b = 2.41332 - 0.37758I$	$-4.32280 + 4.18388I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.410150 + 0.091621I$ $a = 0.171722 - 0.446103I$ $b = -0.051337 - 0.869147I$	$-3.31779 - 0.73149I$	0
$u = -1.410150 - 0.091621I$ $a = 0.171722 + 0.446103I$ $b = -0.051337 + 0.869147I$	$-3.31779 + 0.73149I$	0
$u = -1.404660 + 0.156512I$ $a = -0.481712 - 0.823798I$ $b = 1.44039 + 0.27511I$	$-7.96725 + 2.25757I$	0
$u = -1.404660 - 0.156512I$ $a = -0.481712 + 0.823798I$ $b = 1.44039 - 0.27511I$	$-7.96725 - 2.25757I$	0
$u = 1.407530 + 0.132731I$ $a = 1.36353 - 0.57844I$ $b = 0.66427 - 2.25478I$	$-7.47816 + 0.17720I$	0
$u = 1.407530 - 0.132731I$ $a = 1.36353 + 0.57844I$ $b = 0.66427 + 2.25478I$	$-7.47816 - 0.17720I$	0
$u = -1.40289 + 0.25793I$ $a = -0.099708 - 0.974841I$ $b = 0.717554 + 0.201107I$	$-6.51086 + 6.10114I$	0
$u = -1.40289 - 0.25793I$ $a = -0.099708 + 0.974841I$ $b = 0.717554 - 0.201107I$	$-6.51086 - 6.10114I$	0
$u = 1.40734 + 0.26932I$ $a = -1.68136 - 0.99882I$ $b = -2.91941 + 2.36420I$	$-5.53651 - 8.66838I$	0
$u = 1.40734 - 0.26932I$ $a = -1.68136 + 0.99882I$ $b = -2.91941 - 2.36420I$	$-5.53651 + 8.66838I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.40814 + 0.28394I$ $a = 0.280476 - 0.719527I$ $b = 1.97690 - 0.33914I$	$-0.68966 + 9.28326I$	0
$u = -1.40814 - 0.28394I$ $a = 0.280476 + 0.719527I$ $b = 1.97690 + 0.33914I$	$-0.68966 - 9.28326I$	0
$u = -1.42115 + 0.28534I$ $a = -1.34480 + 1.32214I$ $b = -3.09851 - 1.54301I$	$-3.0092 + 14.9742I$	0
$u = -1.42115 - 0.28534I$ $a = -1.34480 - 1.32214I$ $b = -3.09851 + 1.54301I$	$-3.0092 - 14.9742I$	0
$u = -1.44601 + 0.10453I$ $a = 0.955221 + 0.877194I$ $b = -0.16080 + 1.87965I$	$-5.55732 - 5.80431I$	0
$u = -1.44601 - 0.10453I$ $a = 0.955221 - 0.877194I$ $b = -0.16080 - 1.87965I$	$-5.55732 + 5.80431I$	0
$u = 1.44004 + 0.23244I$ $a = -0.095745 + 0.853500I$ $b = 0.714563 + 0.171726I$	$-7.13968 - 3.33308I$	0
$u = 1.44004 - 0.23244I$ $a = -0.095745 - 0.853500I$ $b = 0.714563 - 0.171726I$	$-7.13968 + 3.33308I$	0
$u = 1.44782 + 0.18947I$ $a = -0.258808 + 0.695694I$ $b = 1.43274 + 0.05713I$	$-7.74951 - 6.19199I$	0
$u = 1.44782 - 0.18947I$ $a = -0.258808 - 0.695694I$ $b = 1.43274 - 0.05713I$	$-7.74951 + 6.19199I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.234891 + 0.464221I$ $a = 0.496892 - 0.920682I$ $b = 0.051241 - 0.444007I$	$-0.038168 + 1.118320I$	$-0.73760 - 6.33469I$
$u = -0.234891 - 0.464221I$ $a = 0.496892 + 0.920682I$ $b = 0.051241 + 0.444007I$	$-0.038168 - 1.118320I$	$-0.73760 + 6.33469I$
$u = 0.382966 + 0.305636I$ $a = 0.015592 + 1.148670I$ $b = 1.170900 + 0.079635I$	$-2.38212 - 0.33638I$	$-5.62748 - 1.67456I$
$u = 0.382966 - 0.305636I$ $a = 0.015592 - 1.148670I$ $b = 1.170900 - 0.079635I$	$-2.38212 + 0.33638I$	$-5.62748 + 1.67456I$

II. $\boldsymbol{I^u_2 = \langle b-1,\ -u^3+a+2u,\ u^5-u^4-2u^3+u^2+u+1\rangle}$

(i) Arc colorings

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

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

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

$$a_6 = \begin{pmatrix} u \\ -u^3+u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^3-2u \\ 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^3+2u \\ -u^3+u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0 \\ -u^3+u+1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^2+1 \\ u^4-2u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3-2u \\ u^3-u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0 \\ -u^3+u+1 \end{pmatrix}$$

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 5u^3 - u^2 - 8u - 9$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^5$
c_3, c_7	y^5
c_5	$y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1$
c_6, c_9, c_{10}	$y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1$
c_8, c_{11}	$y^5 + 3y^4 + 4y^3 + y^2 - y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.21774$ $a = \ 0.629714$ $b = \ 1.00000$	-4.04602	-9.76980
$u = -0.309916 + 0.549911I$ $a = \ 0.871221 - 1.107660I$ $b = \ 1.00000$	$-1.97403 + 1.53058I$	$-5.05737 - 4.09764I$
$u = -0.309916 - 0.549911I$ $a = \ 0.871221 + 1.107660I$ $b = \ 1.00000$	$-1.97403 - 1.53058I$	$-5.05737 + 4.09764I$
$u = \ 1.41878 + 0.21917I$ $a = -0.186078 + 0.874646I$ $b = \ 1.00000$	$-7.51750 - 4.40083I$	$-9.05774 + 4.18967I$
$u = \ 1.41878 - 0.21917I$ $a = -0.186078 - 0.874646I$ $b = \ 1.00000$	$-7.51750 + 4.40083I$	$-9.05774 - 4.18967I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^5)(u^{64}-6u^{63}+\cdots+3u-1)$
c_2	$((u+1)^5)(u^{64}+30u^{63}+\cdots+3u+1)$
c_3, c_7	$u^5(u^{64}+u^{63}+\cdots+96u+32)$
c_4	$((u+1)^5)(u^{64}-6u^{63}+\cdots+3u-1)$
c_5	$(u^5-3u^4+4u^3-u^2-u+1)(u^{64}-6u^{63}+\cdots+5u-1)$
c_6	$(u^5+u^4-2u^3-u^2+u-1)(u^{64}+2u^{63}+\cdots+u-1)$
c_8	$(u^5+u^4+2u^3+u^2+u+1)(u^{64}-2u^{63}+\cdots+8204u-1960)$
c_9, c_{10}	$(u^5-u^4-2u^3+u^2+u+1)(u^{64}+2u^{63}+\cdots+u-1)$
c_{11}	$(u^5+u^4+2u^3+u^2+u+1)(u^{64}+14u^{63}+\cdots+2787u+207)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y-1)^5)(y^{64} - 30y^{63} + \cdots - 3y + 1)$
c_2	$((y-1)^5)(y^{64} + 14y^{63} + \cdots + 13y + 1)$
c_3, c_7	$y^5(y^{64} - 33y^{63} + \cdots - 14848y + 1024)$
c_5	$(y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1)(y^{64} - 2y^{63} + \cdots - 9y + 1)$
c_6, c_9, c_{10}	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)(y^{64} - 58y^{63} + \cdots - y + 1)$
c_8	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)$ $\cdot (y^{64} - 18y^{63} + \cdots - 40328176y + 3841600)$
c_{11}	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)(y^{64} + 18y^{63} + \cdots + 1021851y + 42849)$