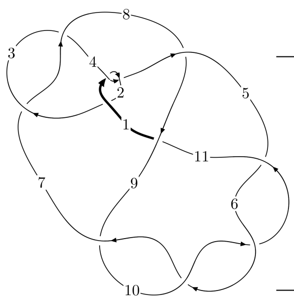
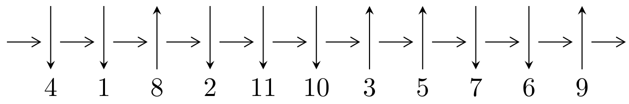
$11a_{37}$ ($K11a_{37}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -48u^{49} + 213u^{48} + \cdots + 4b + 63,\ 29u^{49} - 118u^{48} + \cdots + 4a - 19,\ u^{50} - 5u^{49} + \cdots - u + 1\rangle$$
$$I_2^u = \langle b^4 - b^3 + b^2 + 1,\ a,\ u + 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 54 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. $\boldsymbol{I_1^u = \langle -48u^{49} + 213u^{48} + \cdots + 4b + 63,\ 29u^{49} - 118u^{48} + \cdots + 4a - 19,\ u^{50} - 5u^{49} + \cdots - u + 1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -\frac{29}{4}u^{49} + \frac{59}{2}u^{48} + \cdots + \frac{5}{2}u + \frac{19}{4} \\ 12u^{49} - \frac{213}{4}u^{48} + \cdots - \frac{1}{4}u - \frac{63}{4} \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -19.2500u^{49} + 82.7500u^{48} + \cdots + 2.75000u + 20.5000 \\ 12u^{49} - \frac{213}{4}u^{48} + \cdots - \frac{1}{4}u - \frac{63}{4} \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -9u^{49} + \frac{149}{4}u^{48} + \cdots + \frac{17}{4}u + \frac{35}{4} \\ \frac{51}{4}u^{49} - \frac{223}{4}u^{48} + \cdots + \frac{5}{4}u - 15 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^{10} + 3u^8 - 2u^7 - 4u^6 + 4u^5 + u^4 - 4u^3 + u^2 + 2u - 1 \\ \frac{1}{8}u^{49} - \frac{1}{2}u^{48} + \cdots + 2u - \frac{1}{8} \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -\frac{1}{8}u^{49} + \frac{1}{2}u^{48} + \cdots - 2u + \frac{9}{8} \\ \frac{21}{8}u^{49} - \frac{43}{4}u^{48} + \cdots - \frac{1}{4}u - \frac{23}{8} \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -\frac{1}{2}u^{49} + \frac{9}{4}u^{48} + \cdots + \frac{17}{4}u - \frac{1}{4} \\ \frac{7}{2}u^{49} - 17u^{48} + \cdots - 2u - 7 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -\frac{1}{2}u^{49} + \frac{9}{4}u^{48} + \cdots + \frac{17}{4}u - \frac{1}{4} \\ \frac{7}{2}u^{49} - 17u^{48} + \cdots - 2u - 7 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{85}{4}u^{49} + \frac{399}{4}u^{48} + \cdots - \frac{53}{4}u + \frac{65}{2}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{50} - 5u^{49} + \cdots - u + 1$
c_2	$u^{50} + 23u^{49} + \cdots - 15u + 1$
c_3, c_7	$u^{50} + u^{49} + \cdots + 24u + 16$
c_5, c_6, c_9 c_{10}	$u^{50} - 2u^{49} + \cdots - 3u + 1$
c_8	$u^{50} - 2u^{49} + \cdots - 1491u + 445$
c_{11}	$u^{50} + 14u^{49} + \cdots + 1257u + 131$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{50} - 23y^{49} + \cdots + 15y + 1$
c_2	$y^{50} + 13y^{49} + \cdots + 3y + 1$
c_3, c_7	$y^{50} - 27y^{49} + \cdots - 2624y + 256$
c_5, c_6, c_9 c_{10}	$y^{50} + 58y^{49} + \cdots + y + 1$
c_8	$y^{50} - 22y^{49} + \cdots - 648671y + 198025$
c_{11}	$y^{50} - 10y^{49} + \cdots + 86009y + 17161$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.582859 + 0.818130I$ $a = -0.981092 + 0.022618I$ $b = -1.038970 - 0.194067I$	$5.74926 - 1.32005I$	$5.01799 + 3.45627I$
$u = 0.582859 - 0.818130I$ $a = -0.981092 - 0.022618I$ $b = -1.038970 + 0.194067I$	$5.74926 + 1.32005I$	$5.01799 - 3.45627I$
$u = 0.435613 + 0.882797I$ $a = -1.36085 - 0.66520I$ $b = -1.36121 - 0.51636I$	$4.77931 + 5.21174I$	$3.15504 - 5.31436I$
$u = 0.435613 - 0.882797I$ $a = -1.36085 + 0.66520I$ $b = -1.36121 + 0.51636I$	$4.77931 - 5.21174I$	$3.15504 + 5.31436I$
$u = -0.928435 + 0.426925I$ $a = -1.46100 + 0.63623I$ $b = -0.719839 - 0.472231I$	$-1.61695 + 1.61236I$	$-6.30739 - 1.92987I$
$u = -0.928435 - 0.426925I$ $a = -1.46100 - 0.63623I$ $b = -0.719839 + 0.472231I$	$-1.61695 - 1.61236I$	$-6.30739 + 1.92987I$
$u = 0.429603 + 0.933534I$ $a = 1.62869 + 0.71121I$ $b = 1.52592 + 0.52069I$	$12.7949 + 7.4878I$	$5.12788 - 3.72934I$
$u = 0.429603 - 0.933534I$ $a = 1.62869 - 0.71121I$ $b = 1.52592 - 0.52069I$	$12.7949 - 7.4878I$	$5.12788 + 3.72934I$
$u = 0.935093 + 0.462361I$ $a = 0.633478 + 0.219321I$ $b = -0.112627 - 1.282310I$	$-1.42561 - 3.60776I$	$-3.00000 + 7.46646I$
$u = 0.935093 - 0.462361I$ $a = 0.633478 - 0.219321I$ $b = -0.112627 + 1.282310I$	$-1.42561 + 3.60776I$	$-3.00000 - 7.46646I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.861919 + 0.408962I$ $a = -0.508762 - 0.083121I$ $b = 0.521608 + 1.221570I$	$-1.048050 + 0.087468I$	$-1.42204 + 0.46193I$
$u = 0.861919 - 0.408962I$ $a = -0.508762 + 0.083121I$ $b = 0.521608 - 1.221570I$	$-1.048050 - 0.087468I$	$-1.42204 - 0.46193I$
$u = 0.469477 + 0.811158I$ $a = 1.016760 + 0.499666I$ $b = 1.154940 + 0.462231I$	$2.92925 + 1.64742I$	$-0.497780 - 0.432754I$
$u = 0.469477 - 0.811158I$ $a = 1.016760 - 0.499666I$ $b = 1.154940 - 0.462231I$	$2.92925 - 1.64742I$	$-0.497780 + 0.432754I$
$u = 0.632917 + 0.878463I$ $a = 1.205340 - 0.345103I$ $b = 1.089650 - 0.054007I$	$14.1472 - 2.8867I$	$6.24429 + 0.I$
$u = 0.632917 - 0.878463I$ $a = 1.205340 + 0.345103I$ $b = 1.089650 + 0.054007I$	$14.1472 + 2.8867I$	$6.24429 + 0.I$
$u = -0.947722 + 0.527766I$ $a = 1.90433 - 0.66549I$ $b = 1.091640 + 0.560170I$	$-0.06909 + 4.84703I$	$0. - 7.27549I$
$u = -0.947722 - 0.527766I$ $a = 1.90433 + 0.66549I$ $b = 1.091640 - 0.560170I$	$-0.06909 - 4.84703I$	$0. + 7.27549I$
$u = -0.682129 + 0.592727I$ $a = -1.61933 + 1.77257I$ $b = -1.041110 + 0.419266I$	$8.58536 - 2.27131I$	$2.70256 + 0.I$
$u = -0.682129 - 0.592727I$ $a = -1.61933 - 1.77257I$ $b = -1.041110 - 0.419266I$	$8.58536 + 2.27131I$	$2.70256 + 0.I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.957660+0.583300I$ $a=-2.17619+0.70245I$ $b=-1.33546-0.59049I$	$7.74509+6.95904I$	0
$u=-0.957660-0.583300I$ $a=-2.17619-0.70245I$ $b=-1.33546+0.59049I$	$7.74509-6.95904I$	0
$u=-1.123510+0.157529I$ $a=-0.550330-0.046161I$ $b=\ \ 0.309772-0.513002I$	$-2.34402+0.36505I$	0
$u=-1.123510-0.157529I$ $a=-0.550330+0.046161I$ $b=\ \ 0.309772+0.513002I$	$-2.34402-0.36505I$	0
$u=\ \ 0.803708+0.317036I$ $a=\ \ 0.479992-0.047063I$ $b=-0.96186-1.16924I$	$5.81553+2.38249I$	$3.49858+1.94330I$
$u=\ \ 0.803708-0.317036I$ $a=\ \ 0.479992+0.047063I$ $b=-0.96186+1.16924I$	$5.81553-2.38249I$	$3.49858-1.94330I$
$u=\ \ 1.027460+0.497180I$ $a=-0.894781-0.329352I$ $b=-0.41118+1.40760I$	$4.51917-5.78869I$	0
$u=\ \ 1.027460-0.497180I$ $a=-0.894781+0.329352I$ $b=-0.41118-1.40760I$	$4.51917+5.78869I$	0
$u=-0.701181+0.467599I$ $a=\ \ 1.30386-1.46602I$ $b=\ \ 0.748263-0.194492I$	$0.729964-0.675494I$	$1.06714+1.67748I$
$u=-0.701181-0.467599I$ $a=\ \ 1.30386+1.46602I$ $b=\ \ 0.748263+0.194492I$	$0.729964+0.675494I$	$1.06714-1.67748I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.131350 + 0.330216I$ $a = 1.100770 + 0.196944I$ $b = 0.101239 + 1.026310I$	$3.45731 + 1.19827I$	0
$u = -1.131350 - 0.330216I$ $a = 1.100770 - 0.196944I$ $b = 0.101239 - 1.026310I$	$3.45731 - 1.19827I$	0
$u = 1.036300 + 0.664231I$ $a = -0.840415 - 1.006820I$ $b = -0.822961 + 0.495838I$	$4.37658 - 4.22003I$	0
$u = 1.036300 - 0.664231I$ $a = -0.840415 + 1.006820I$ $b = -0.822961 - 0.495838I$	$4.37658 + 4.22003I$	0
$u = -1.251000 + 0.108910I$ $a = 0.284422 + 0.232631I$ $b = -0.871117 + 0.511779I$	$-1.11589 - 2.48404I$	0
$u = -1.251000 - 0.108910I$ $a = 0.284422 - 0.232631I$ $b = -0.871117 - 0.511779I$	$-1.11589 + 2.48404I$	0
$u = 1.028110 + 0.728538I$ $a = 0.69726 + 1.30827I$ $b = 0.829533 - 0.089406I$	$12.94610 - 3.03404I$	0
$u = 1.028110 - 0.728538I$ $a = 0.69726 - 1.30827I$ $b = 0.829533 + 0.089406I$	$12.94610 + 3.03404I$	0
$u = 1.100010 + 0.633178I$ $a = 1.17840 + 0.90974I$ $b = 1.17520 - 0.79670I$	$1.03930 - 7.06574I$	0
$u = 1.100010 - 0.633178I$ $a = 1.17840 - 0.90974I$ $b = 1.17520 + 0.79670I$	$1.03930 + 7.06574I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.133290 + 0.650060I$ $a = -1.34813 - 1.01237I$ $b = -1.43569 + 0.74867I$	$2.67414 - 10.86920I$	0
$u = 1.133290 - 0.650060I$ $a = -1.34813 + 1.01237I$ $b = -1.43569 - 0.74867I$	$2.67414 + 10.86920I$	0
$u = -1.311520 + 0.106975I$ $a = -0.125488 - 0.322812I$ $b = 1.176990 - 0.583698I$	$6.58516 - 4.39707I$	0
$u = -1.311520 - 0.106975I$ $a = -0.125488 + 0.322812I$ $b = 1.176990 + 0.583698I$	$6.58516 + 4.39707I$	0
$u = 1.154930 + 0.665889I$ $a = 1.46673 + 1.10969I$ $b = 1.62351 - 0.67827I$	$10.5867 - 13.3384I$	0
$u = 1.154930 - 0.665889I$ $a = 1.46673 - 1.10969I$ $b = 1.62351 + 0.67827I$	$10.5867 + 13.3384I$	0
$u = 0.004533 + 0.531412I$ $a = 0.34509 - 1.83693I$ $b = -0.385670 - 0.859631I$	$6.72549 + 2.13344I$	$2.98920 - 3.27411I$
$u = 0.004533 - 0.531412I$ $a = 0.34509 + 1.83693I$ $b = -0.385670 + 0.859631I$	$6.72549 - 2.13344I$	$2.98920 + 3.27411I$
$u = -0.101318 + 0.238648I$ $a = -0.87875 + 2.12555I$ $b = 0.149430 + 0.468790I$	$-0.000511 + 1.051120I$	$-0.14079 - 6.76805I$
$u = -0.101318 - 0.238648I$ $a = -0.87875 - 2.12555I$ $b = 0.149430 - 0.468790I$	$-0.000511 - 1.051120I$	$-0.14079 + 6.76805I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

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

(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_7	u^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_2, c_4	$(y-1)^4$
c_3, 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_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = 0$ $b = -0.351808 + 0.720342I$	$-1.85594 - 1.41510I$	$-4.47493 + 4.18840I$
$u = -1.00000$ $a = 0$ $b = -0.351808 - 0.720342I$	$-1.85594 + 1.41510I$	$-4.47493 - 4.18840I$
$u = -1.00000$ $a = 0$ $b = 0.851808 + 0.911292I$	$5.14581 + 3.16396I$	$-2.02507 - 3.47609I$
$u = -1.00000$ $a = 0$ $b = 0.851808 - 0.911292I$	$5.14581 - 3.16396I$	$-2.02507 + 3.47609I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^4)(u^{50} - 5u^{49} + \cdots - u + 1)$
c_2	$((u+1)^4)(u^{50} + 23u^{49} + \cdots - 15u + 1)$
c_3, c_7	$u^4(u^{50} + u^{49} + \cdots + 24u + 16)$
c_4	$((u+1)^4)(u^{50} - 5u^{49} + \cdots - u + 1)$
c_5, c_6	$(u^4 - u^3 + 3u^2 - 2u + 1)(u^{50} - 2u^{49} + \cdots - 3u + 1)$
c_8	$(u^4 + u^3 + u^2 + 1)(u^{50} - 2u^{49} + \cdots - 1491u + 445)$
c_9, c_{10}	$(u^4 + u^3 + 3u^2 + 2u + 1)(u^{50} - 2u^{49} + \cdots - 3u + 1)$
c_{11}	$(u^4 + u^3 + u^2 + 1)(u^{50} + 14u^{49} + \cdots + 1257u + 131)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y-1)^4)(y^{50} - 23y^{49} + \cdots + 15y + 1)$
c_2	$((y-1)^4)(y^{50} + 13y^{49} + \cdots + 3y + 1)$
c_3, c_7	$y^4(y^{50} - 27y^{49} + \cdots - 2624y + 256)$
c_5, c_6, c_9 c_{10}	$(y^4 + 5y^3 + 7y^2 + 2y + 1)(y^{50} + 58y^{49} + \cdots + y + 1)$
c_8	$(y^4 + y^3 + 3y^2 + 2y + 1)(y^{50} - 22y^{49} + \cdots - 648671y + 198025)$
c_{11}	$(y^4 + y^3 + 3y^2 + 2y + 1)(y^{50} - 10y^{49} + \cdots + 86009y + 17161)$