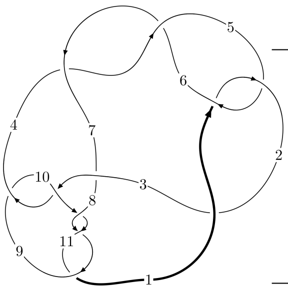
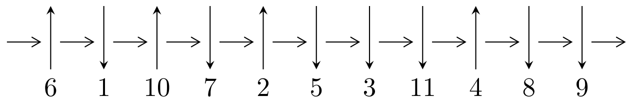
$11a_{118}$ ($K11a_{118}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 2u^{46} - 4u^{45} + \cdots + b + 2,\ -2u^{46} + 2u^{45} + \cdots + a + u,\ u^{47} - 2u^{46} + \cdots - 2u^2 - 1 \rangle$$
$$I_2^u = \langle u^2 + b,\ a + u,\ u^4 + u^3 + u^2 + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 51 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.

$$\boldsymbol{I_1^u = \langle 2u^{46}-4u^{45}+\cdots+b+2,\ -2u^{46}+2u^{45}+\cdots+a+u,\ u^{47}-2u^{46}+\cdots-2u^2-1\rangle}$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^2+1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u \\ u^3+u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^3 \\ u^5+u^3+u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^4+u^2+1 \\ -u^4 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 2u^{46}-2u^{45}+\cdots-10u^3-u \\ -2u^{46}+4u^{45}+\cdots-4u^2-2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^{42}-5u^{40}+\cdots-u^2-1 \\ u^{43}+5u^{41}+\cdots+u^3+u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^{46}+u^{45}+\cdots+u^2+1 \\ u^{46}-2u^{45}+\cdots+2u^2+1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^{10}-u^8-2u^6-u^4+u^2+1 \\ u^{12}+2u^{10}+4u^8+4u^6+3u^4 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^{10}-u^8-2u^6-u^4+u^2+1 \\ u^{12}+2u^{10}+4u^8+4u^6+3u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{46}-4u^{45}+\cdots-13u-5$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{47} - 2u^{46} + \cdots - 2u^2 - 1$
c_2, c_4, c_6	$u^{47} + 12u^{46} + \cdots - 4u - 1$
c_3, c_9	$u^{47} - u^{46} + \cdots + 56u + 16$
c_7	$u^{47} - 2u^{46} + \cdots + 692u - 241$
c_8, c_{10}, c_{11}	$u^{47} - 5u^{46} + \cdots - 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{47} + 12y^{46} + \cdots - 4y - 1$
c_2, c_4, c_6	$y^{47} + 48y^{46} + \cdots + 20y - 1$
c_3, c_9	$y^{47} + 27y^{46} + \cdots - 1472y - 256$
c_7	$y^{47} - 12y^{46} + \cdots - 623952y - 58081$
c_8, c_{10}, c_{11}	$y^{47} - 45y^{46} + \cdots - 14y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.323780 + 0.951481I$ $a = -1.040000 - 0.645980I$ $b = 0.039385 + 0.152748I$	$-2.98908 - 5.01589I$	$-7.64324 + 7.88279I$
$u = -0.323780 - 0.951481I$ $a = -1.040000 + 0.645980I$ $b = 0.039385 - 0.152748I$	$-2.98908 + 5.01589I$	$-7.64324 - 7.88279I$
$u = 0.279046 + 0.946930I$ $a = 0.56107 - 1.31422I$ $b = -1.13319 + 1.30432I$	$-5.33668 + 2.70197I$	$-9.52160 - 4.32403I$
$u = 0.279046 - 0.946930I$ $a = 0.56107 + 1.31422I$ $b = -1.13319 - 1.30432I$	$-5.33668 - 2.70197I$	$-9.52160 + 4.32403I$
$u = -0.162628 + 1.011340I$ $a = -0.246189 + 0.321696I$ $b = -0.52431 - 1.50699I$	$-10.43430 + 2.59019I$	$-12.08721 - 0.43654I$
$u = -0.162628 - 1.011340I$ $a = -0.246189 - 0.321696I$ $b = -0.52431 + 1.50699I$	$-10.43430 - 2.59019I$	$-12.08721 + 0.43654I$
$u = -0.228159 + 0.924111I$ $a = 0.482803 + 0.476440I$ $b = 0.496433 + 0.569748I$	$-3.55919 - 0.29784I$	$-10.26703 + 0.71916I$
$u = -0.228159 - 0.924111I$ $a = 0.482803 - 0.476440I$ $b = 0.496433 - 0.569748I$	$-3.55919 + 0.29784I$	$-10.26703 - 0.71916I$
$u = 0.708344 + 0.612950I$ $a = -0.171277 - 1.044900I$ $b = 0.358664 + 0.237870I$	$-4.59202 + 2.73053I$	$-5.50356 - 3.27752I$
$u = 0.708344 - 0.612950I$ $a = -0.171277 + 1.044900I$ $b = 0.358664 - 0.237870I$	$-4.59202 - 2.73053I$	$-5.50356 + 3.27752I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.356410 + 1.011910I$ $a = 1.41420 + 0.68105I$ $b = -0.864275 - 0.447765I$	$-9.29934 - 8.73167I$	$-9.77244 + 7.33268I$
$u = -0.356410 - 1.011910I$ $a = 1.41420 - 0.68105I$ $b = -0.864275 + 0.447765I$	$-9.29934 + 8.73167I$	$-9.77244 - 7.33268I$
$u = 0.340688 + 0.794423I$ $a = -0.122254 + 0.637267I$ $b = 0.278704 - 0.519560I$	$-0.34710 + 1.73528I$	$-0.42828 - 4.75697I$
$u = 0.340688 - 0.794423I$ $a = -0.122254 - 0.637267I$ $b = 0.278704 + 0.519560I$	$-0.34710 - 1.73528I$	$-0.42828 + 4.75697I$
$u = 0.683839 + 0.940887I$ $a = -0.548528 - 0.398362I$ $b = 0.617662 - 0.068827I$	$-5.43573 + 2.43943I$	$-7.50586 - 2.89264I$
$u = 0.683839 - 0.940887I$ $a = -0.548528 + 0.398362I$ $b = 0.617662 + 0.068827I$	$-5.43573 - 2.43943I$	$-7.50586 + 2.89264I$
$u = -0.834781 + 0.823539I$ $a = 1.25208 + 1.37561I$ $b = -2.22075 + 1.02814I$	$1.68842 + 0.66706I$	$-2.90341 + 0.I$
$u = -0.834781 - 0.823539I$ $a = 1.25208 - 1.37561I$ $b = -2.22075 - 1.02814I$	$1.68842 - 0.66706I$	$-2.90341 + 0.I$
$u = 0.815351 + 0.845486I$ $a = 1.63790 + 0.06363I$ $b = -1.65919 - 1.45595I$	$2.81443 + 1.97841I$	$-3.90653 - 2.24549I$
$u = 0.815351 - 0.845486I$ $a = 1.63790 - 0.06363I$ $b = -1.65919 + 1.45595I$	$2.81443 - 1.97841I$	$-3.90653 + 2.24549I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.857523 + 0.824218I$ $a = -1.55042 + 1.32128I$ $b = 2.82438 + 0.47847I$	$4.54046 - 2.88310I$	$-0.74757 + 2.68199I$
$u = 0.857523 - 0.824218I$ $a = -1.55042 - 1.32128I$ $b = 2.82438 - 0.47847I$	$4.54046 + 2.88310I$	$-0.74757 - 2.68199I$
$u = 0.885800 + 0.806423I$ $a = 0.87468 - 2.17600I$ $b = -3.02165 + 0.59943I$	$-1.16589 - 7.05931I$	$-3.99587 + 3.23207I$
$u = 0.885800 - 0.806423I$ $a = 0.87468 + 2.17600I$ $b = -3.02165 - 0.59943I$	$-1.16589 + 7.05931I$	$-3.99587 - 3.23207I$
$u = -0.846893 + 0.876661I$ $a = -1.243050 - 0.582712I$ $b = 1.61840 - 1.14508I$	$6.78103 - 1.89076I$	$3.32003 + 1.86990I$
$u = -0.846893 - 0.876661I$ $a = -1.243050 + 0.582712I$ $b = 1.61840 + 1.14508I$	$6.78103 + 1.89076I$	$3.32003 - 1.86990I$
$u = 0.789107 + 0.937549I$ $a = -0.18516 + 1.60290I$ $b = 1.69367 - 0.69541I$	$2.52856 + 4.03641I$	$-4.47860 - 2.87730I$
$u = 0.789107 - 0.937549I$ $a = -0.18516 - 1.60290I$ $b = 1.69367 + 0.69541I$	$2.52856 - 4.03641I$	$-4.47860 + 2.87730I$
$u = -0.793086 + 0.958197I$ $a = -1.31875 - 1.11688I$ $b = 3.24344 - 0.25353I$	$1.27181 - 6.75017I$	$-3.82680 + 4.90142I$
$u = -0.793086 - 0.958197I$ $a = -1.31875 + 1.11688I$ $b = 3.24344 + 0.25353I$	$1.27181 + 6.75017I$	$-3.82680 - 4.90142I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.827450 + 0.929808I$ $a = \quad 0.652950 + 1.101310I$ $b = -2.09248 - 0.31110I$	$6.61449 - 4.34054I$	$3.06304 + 3.52446I$
$u = -0.827450 - 0.929808I$ $a = \quad 0.652950 - 1.101310I$ $b = -2.09248 + 0.31110I$	$6.61449 + 4.34054I$	$3.06304 - 3.52446I$
$u = \quad 0.805855 + 0.968008I$ $a = \quad 1.48174 - 1.44769I$ $b = -2.97050 - 0.63587I$	$4.09177 + 9.07422I$	$0. - 7.57119I$
$u = \quad 0.805855 - 0.968008I$ $a = \quad 1.48174 + 1.44769I$ $b = -2.97050 + 0.63587I$	$4.09177 - 9.07422I$	$0. + 7.57119I$
$u = -0.880114 + 0.921081I$ $a = \quad 1.22606 - 1.28739I$ $b = \quad 0.27179 + 2.45585I$	$4.07979 - 3.25139I$	$-6.94110 + 0.I$
$u = -0.880114 - 0.921081I$ $a = \quad 1.22606 + 1.28739I$ $b = \quad 0.27179 - 2.45585I$	$4.07979 + 3.25139I$	$-6.94110 + 0.I$
$u = \quad 0.811281 + 0.991380I$ $a = -2.18383 + 0.73777I$ $b = \quad 3.18948 + 1.96415I$	$-1.74737 + 13.34970I$	$0. - 7.91325I$
$u = \quad 0.811281 - 0.991380I$ $a = -2.18383 - 0.73777I$ $b = \quad 3.18948 - 1.96415I$	$-1.74737 - 13.34970I$	$0. + 7.91325I$
$u = -0.689977 + 0.164527I$ $a = -1.53731 - 0.89142I$ $b = \quad 0.350409 + 0.785923I$	$-6.58964 + 5.02938I$	$-4.60471 - 3.19808I$
$u = -0.689977 - 0.164527I$ $a = -1.53731 + 0.89142I$ $b = \quad 0.350409 - 0.785923I$	$-6.58964 - 5.02938I$	$-4.60471 + 3.19808I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.412032 + 0.515876I$ $a = 1.082960 + 0.365898I$ $b = -0.467743 - 0.314327I$	$0.483129 + 1.240200I$	$2.11511 - 5.50878I$
$u = 0.412032 - 0.515876I$ $a = 1.082960 - 0.365898I$ $b = -0.467743 + 0.314327I$	$0.483129 - 1.240200I$	$2.11511 + 5.50878I$
$u = -0.160236 + 0.579743I$ $a = -1.03520 + 1.13349I$ $b = 0.691220 + 0.719972I$	$-2.00613 - 0.73127I$	$-7.95587 - 2.97532I$
$u = -0.160236 - 0.579743I$ $a = -1.03520 - 1.13349I$ $b = 0.691220 - 0.719972I$	$-2.00613 + 0.73127I$	$-7.95587 + 2.97532I$
$u = -0.532528 + 0.151857I$ $a = 0.891221 - 0.043389I$ $b = -0.132594 - 0.683828I$	$-0.60484 + 1.87329I$	$-1.11748 - 3.89488I$
$u = -0.532528 - 0.151857I$ $a = 0.891221 + 0.043389I$ $b = -0.132594 + 0.683828I$	$-0.60484 - 1.87329I$	$-1.11748 + 3.89488I$
$u = 0.494353$ $a = -2.75136$ $b = 0.826082$	-2.69658	-2.16950

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -5u^2 - 6u - 5$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.351808 + 0.720342I$ $a = -0.351808 - 0.720342I$ $b = 0.395123 - 0.506844I$	$-1.85594 + 1.41510I$	$-5.13523 - 6.85627I$
$u = 0.351808 - 0.720342I$ $a = -0.351808 + 0.720342I$ $b = 0.395123 + 0.506844I$	$-1.85594 - 1.41510I$	$-5.13523 + 6.85627I$
$u = -0.851808 + 0.911292I$ $a = 0.851808 - 0.911292I$ $b = 0.10488 + 1.55249I$	$5.14581 - 3.16396I$	$0.63523 + 2.29471I$
$u = -0.851808 - 0.911292I$ $a = 0.851808 + 0.911292I$ $b = 0.10488 - 1.55249I$	$5.14581 + 3.16396I$	$0.63523 - 2.29471I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^4 - u^3 + u^2 + 1)(u^{47} - 2u^{46} + \cdots - 2u^2 - 1)$
c_2, c_6	$(u^4 + u^3 + 3u^2 + 2u + 1)(u^{47} + 12u^{46} + \cdots - 4u - 1)$
c_3, c_9	$u^4(u^{47} - u^{46} + \cdots + 56u + 16)$
c_4	$(u^4 - u^3 + 3u^2 - 2u + 1)(u^{47} + 12u^{46} + \cdots - 4u - 1)$
c_5	$(u^4 + u^3 + u^2 + 1)(u^{47} - 2u^{46} + \cdots - 2u^2 - 1)$
c_7	$(u^4 + u^3 + 3u^2 + 2u + 1)(u^{47} - 2u^{46} + \cdots + 692u - 241)$
c_8	$((u - 1)^4)(u^{47} - 5u^{46} + \cdots - 2u + 1)$
c_{10}, c_{11}	$((u + 1)^4)(u^{47} - 5u^{46} + \cdots - 2u + 1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$(y^4+y^3+3y^2+2y+1)(y^{47}+12y^{46}+\cdots-4y-1)$
c_2, c_4, c_6	$(y^4+5y^3+7y^2+2y+1)(y^{47}+48y^{46}+\cdots+20y-1)$
c_3, c_9	$y^4(y^{47}+27y^{46}+\cdots-1472y-256)$
c_7	$(y^4+5y^3+7y^2+2y+1)(y^{47}-12y^{46}+\cdots-623952y-58081)$
c_8, c_{10}, c_{11}	$((y-1)^4)(y^{47}-45y^{46}+\cdots-14y-1)$