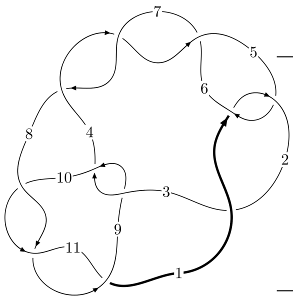
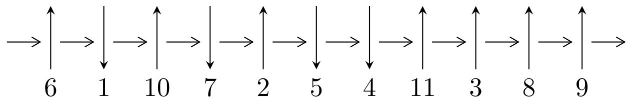
$11a_{161}$ ($K11a_{161}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -u^{20} - 2u^{18} + \cdots + b - 2u,\ u^{28} + u^{27} + \cdots + a + 2,\ u^{32} + 2u^{31} + \cdots + 4u + 1\rangle$$
$$I_2^u = \langle u^2 + b,\ -u^2 + a + u,\ u^4 - u^3 + u^2 + 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 36 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.

$$I^u_1 = \langle -u^{20} - 2u^{18} + \cdots + b - 2u,\ u^{28} + u^{27} + \cdots + a + 2,\ u^{32} + 2u^{31} + \cdots + 4u + 1\rangle$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^2 + 1 \\ u^4 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^{28} - u^{27} + \cdots - 6u - 2 \\ u^{20} + 2u^{18} + \cdots + 2u^2 + 2u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -2u^{30} - u^{29} + \cdots - 7u - 3 \\ 2u^{31} + 4u^{30} + \cdots + 9u + 2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^5 - u \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^{30} + u^{29} + \cdots + 7u + 3 \\ -u^{31} - 2u^{30} + \cdots - 5u - 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^7 - 2u^3 \\ u^7 + u^5 + 2u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^7 - 2u^3 \\ u^7 + u^5 + 2u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 4u^{31}+8u^{30}+19u^{29}+22u^{28}+72u^{27}+97u^{26}+199u^{25}+195u^{24}+434u^{23}+440u^{22}+814u^{21}+663u^{20}+1230u^{19}+979u^{18}+1669u^{17}+1135u^{16}+1826u^{15}+1208u^{14}+1820u^{13}+1120u^{12}+1432u^{11}+910u^{10}+996u^9+668u^8+516u^7+390u^6+216u^5+187u^4+58u^3+55u^2+13u+11$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{32} - 2u^{31} + \cdots - 4u + 1$
c_2, c_4, c_6 c_7	$u^{32} + 6u^{31} + \cdots - 56u^2 + 1$
c_3, c_9	$u^{32} - u^{31} + \cdots + 24u - 16$
c_8, c_{10}, c_{11}	$u^{32} + 5u^{31} + \cdots - 4u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{32} + 6y^{31} + \cdots - 56y^2 + 1$
c_2, c_4, c_6 c_7	$y^{32} + 42y^{31} + \cdots - 112y + 1$
c_3, c_9	$y^{32} - 27y^{31} + \cdots + 448y + 256$
c_8, c_{10}, c_{11}	$y^{32} - 35y^{31} + \cdots - 22y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.213719 + 0.980461I$ $a = 0.92583 - 1.26296I$ $b = 0.082336 + 0.696499I$	$4.40938 - 2.90320I$	$5.62644 + 3.88291I$
$u = -0.213719 - 0.980461I$ $a = 0.92583 + 1.26296I$ $b = 0.082336 - 0.696499I$	$4.40938 + 2.90320I$	$5.62644 - 3.88291I$
$u = -0.644830 + 0.775185I$ $a = 2.23380 + 1.34488I$ $b = -0.42916 - 2.42515I$	$4.97796 - 2.41324I$	$9.06378 + 3.46829I$
$u = -0.644830 - 0.775185I$ $a = 2.23380 - 1.34488I$ $b = -0.42916 + 2.42515I$	$4.97796 + 2.41324I$	$9.06378 - 3.46829I$
$u = 0.798476 + 0.579251I$ $a = -1.76126 + 0.16137I$ $b = 0.88715 - 1.74244I$	$10.60130 - 2.72339I$	$11.99326 + 0.76740I$
$u = 0.798476 - 0.579251I$ $a = -1.76126 - 0.16137I$ $b = 0.88715 + 1.74244I$	$10.60130 + 2.72339I$	$11.99326 - 0.76740I$
$u = 0.601316 + 0.841196I$ $a = 0.867822 - 0.956388I$ $b = 0.193771 + 0.505942I$	$2.73490 + 4.63620I$	$7.44058 - 7.48323I$
$u = 0.601316 - 0.841196I$ $a = 0.867822 + 0.956388I$ $b = 0.193771 - 0.505942I$	$2.73490 - 4.63620I$	$7.44058 + 7.48323I$
$u = 0.645468 + 0.683845I$ $a = 0.0195996 - 0.1036640I$ $b = -0.539124 + 0.646751I$	$3.24411 + 0.05063I$	$9.93222 + 0.12660I$
$u = 0.645468 - 0.683845I$ $a = 0.0195996 + 0.1036640I$ $b = -0.539124 - 0.646751I$	$3.24411 - 0.05063I$	$9.93222 - 0.12660I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.614078 + 0.966359I$ $a = -1.02310 + 2.02918I$ $b = -0.31554 - 2.13236I$	$9.31106 + 7.91275I$	$9.40540 - 6.63145I$
$u = 0.614078 - 0.966359I$ $a = -1.02310 - 2.02918I$ $b = -0.31554 + 2.13236I$	$9.31106 - 7.91275I$	$9.40540 + 6.63145I$
$u = -0.423229 + 0.733264I$ $a = -0.896141 - 0.367650I$ $b = 0.294342 + 0.546654I$	$0.00047 - 1.65514I$	$0.39437 + 4.54470I$
$u = -0.423229 - 0.733264I$ $a = -0.896141 + 0.367650I$ $b = 0.294342 - 0.546654I$	$0.00047 + 1.65514I$	$0.39437 - 4.54470I$
$u = -0.145430 + 0.769393I$ $a = -0.613814 + 1.208160I$ $b = 0.426833 - 0.149998I$	$-1.08342 - 1.49550I$	$-1.76412 + 6.31671I$
$u = -0.145430 - 0.769393I$ $a = -0.613814 - 1.208160I$ $b = 0.426833 + 0.149998I$	$-1.08342 + 1.49550I$	$-1.76412 - 6.31671I$
$u = 0.866691 + 0.917191I$ $a = -0.900315 + 0.319705I$ $b = 0.08960 - 1.43559I$	$7.59385 + 3.21086I$	$2.30282 - 2.66372I$
$u = 0.866691 - 0.917191I$ $a = -0.900315 - 0.319705I$ $b = 0.08960 + 1.43559I$	$7.59385 - 3.21086I$	$2.30282 + 2.66372I$
$u = -0.705788$ $a = -1.72336$ $b = 0.673766$	7.74304	12.4360
$u = -0.918056 + 0.925441I$ $a = 0.220309 + 0.450379I$ $b = 0.124115 - 1.293980I$	$12.49900 - 0.30826I$	$9.65224 - 0.25325I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.918056 - 0.925441I$ $a = 0.220309 - 0.450379I$ $b = 0.124115 + 1.293980I$	$12.49900 + 0.30826I$	$9.65224 + 0.25325I$
$u = -0.945672 + 0.902976I$ $a = -1.81639 - 0.29726I$ $b = 0.97029 + 3.38005I$	$-19.5223 + 4.2287I$	$11.43737 - 1.00370I$
$u = -0.945672 - 0.902976I$ $a = -1.81639 + 0.29726I$ $b = 0.97029 - 3.38005I$	$-19.5223 - 4.2287I$	$11.43737 + 1.00370I$
$u = 0.915023 + 0.941366I$ $a = 2.39534 - 0.89971I$ $b = -0.12103 + 4.15879I$	$14.7168 + 3.3681I$	$10.32984 - 2.30184I$
$u = 0.915023 - 0.941366I$ $a = 2.39534 + 0.89971I$ $b = -0.12103 - 4.15879I$	$14.7168 - 3.3681I$	$10.32984 + 2.30184I$
$u = -0.903860 + 0.952544I$ $a = 1.222940 + 0.282890I$ $b = -0.231803 - 1.207090I$	$12.41050 - 6.40086I$	$9.40627 + 4.90251I$
$u = -0.903860 - 0.952544I$ $a = 1.222940 - 0.282890I$ $b = -0.231803 + 1.207090I$	$12.41050 + 6.40086I$	$9.40627 - 4.90251I$
$u = -0.900364 + 0.984023I$ $a = -1.99724 - 1.52148I$ $b = -0.77261 + 3.46344I$	$19.6887 - 11.0126I$	$11.01976 + 5.54593I$
$u = -0.900364 - 0.984023I$ $a = -1.99724 + 1.52148I$ $b = -0.77261 - 3.46344I$	$19.6887 + 11.0126I$	$11.01976 - 5.54593I$
$u = 0.161526 + 0.565105I$ $a = 0.28634 - 2.32243I$ $b = -0.713364 + 0.589378I$	$1.29270 + 0.72541I$	$4.11413 + 2.96939I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.161526 - 0.565105I$ $a = 0.28634 + 2.32243I$ $b = -0.713364 - 0.589378I$	$1.29270 - 0.72541I$	$4.11413 - 2.96939I$
$u = -0.309046$ $a = -0.604076$ $b = -0.565378$	0.870053	11.8550

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

(i) Arc colorings

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

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

$$a_1 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

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

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

$$a_5 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^2 + 1 \\ u^3 - u^2 - 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^2 - u + 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -1 \\ -u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -1 \\ -u^2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -5u^2 + 6u + 7$

(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
$u = -0.351808 + 0.720342I$ $a = -0.043315 - 1.227190I$ $b = 0.395123 + 0.506844I$	$1.43393 - 1.41510I$	$6.86477 + 6.85627I$
$u = -0.351808 - 0.720342I$ $a = -0.043315 + 1.227190I$ $b = 0.395123 - 0.506844I$	$1.43393 + 1.41510I$	$6.86477 - 6.85627I$
$u = 0.851808 + 0.911292I$ $a = -0.956685 + 0.641200I$ $b = 0.10488 - 1.55249I$	$8.43568 + 3.16396I$	$12.63523 - 2.29471I$
$u = 0.851808 - 0.911292I$ $a = -0.956685 - 0.641200I$ $b = 0.10488 + 1.55249I$	$8.43568 - 3.16396I$	$12.63523 + 2.29471I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^4 - u^3 + u^2 + 1)(u^{32} - 2u^{31} + \cdots - 4u + 1)$
c_2, c_6, c_7	$(u^4 + u^3 + 3u^2 + 2u + 1)(u^{32} + 6u^{31} + \cdots - 56u^2 + 1)$
c_3, c_9	$u^4(u^{32} - u^{31} + \cdots + 24u - 16)$
c_4	$(u^4 - u^3 + 3u^2 - 2u + 1)(u^{32} + 6u^{31} + \cdots - 56u^2 + 1)$
c_5	$(u^4 + u^3 + u^2 + 1)(u^{32} - 2u^{31} + \cdots - 4u + 1)$
c_8	$((u+1)^4)(u^{32} + 5u^{31} + \cdots - 4u - 1)$
c_{10}, c_{11}	$((u-1)^4)(u^{32} + 5u^{31} + \cdots - 4u - 1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$(y^4 + y^3 + 3y^2 + 2y + 1)(y^{32} + 6y^{31} + \cdots - 56y^2 + 1)$
c_2, c_4, c_6 c_7	$(y^4 + 5y^3 + 7y^2 + 2y + 1)(y^{32} + 42y^{31} + \cdots - 112y + 1)$
c_3, c_9	$y^4(y^{32} - 27y^{31} + \cdots + 448y + 256)$
c_8, c_{10}, c_{11}	$((y-1)^4)(y^{32} - 35y^{31} + \cdots - 22y + 1)$