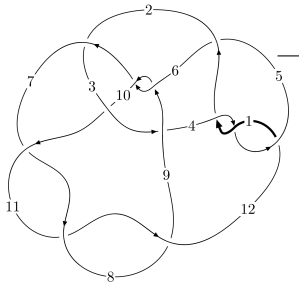
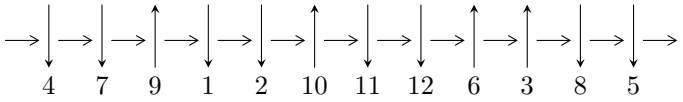
$12a_{1064}$ $(K12a_{1064})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$\underset{c_{12}}{5,12} \to \underset{c_4}{1} \to \underset{c_1}{4} \to \underset{c_5}{2} \to \underset{c_3}{6,9} \to \underset{c_8}{3} \to \underset{c_{11}}{8} \to \underset{c_7}{11} \to \underset{c_{10}}{7} \to 10 \twoheadrightarrow c_2, c_6, c_9$$

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

$$I_1^u = \langle -2.52109 \times 10^{85} u^{82} + 8.64634 \times 10^{85} u^{81} + \cdots + 1.02529 \times 10^{87} b + 1.52237 \times 10^{87},$$
$$- 1.47090 \times 10^{87} u^{82} - 1.63708 \times 10^{87} u^{81} + \cdots + 1.02529 \times 10^{87} a - 7.79066 \times 10^{86},\ u^{83} + u^{82} + \cdots - 2u -$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 83 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.

$\boldsymbol{I_1^u = \langle -2.52\times10^{85}u^{82}+8.65\times10^{85}u^{81}+\cdots+1.03\times10^{87}b+1.52\times10^{87},\ -1.47\times10^{87}u^{82}-1.64\times10^{87}u^{81}+\cdots+1.03\times10^{87}a-7.79\times10^{86},\ u^{83}+u^{82}+\cdots-2u-1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_2 = \begin{pmatrix} u^2+1 \\ u^4+2u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^5-2u^3-u \\ -u^7-3u^5-2u^3+u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1.43461u^{82}+1.59669u^{81}+\cdots-48.1974u+0.759849 \\ 0.0245891u^{82}-0.0843305u^{81}+\cdots-0.539171u-1.48482 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -3.85435u^{82}-3.70576u^{81}+\cdots+12.1010u-10.3867 \\ -0.109874u^{82}-0.158192u^{81}+\cdots+6.49193u+1.37180 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1.45920u^{82}+1.51236u^{81}+\cdots-48.7366u-0.724973 \\ 0.0245891u^{82}-0.0843305u^{81}+\cdots-0.539171u-1.48482 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1.57618u^{82}+0.907236u^{81}+\cdots-69.1885u-0.00842359 \\ -0.0277634u^{82}-0.0657480u^{81}+\cdots-1.84911u-2.19386 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -1.40639u^{82}-1.36785u^{81}+\cdots+42.0418u-2.35067 \\ 0.0598792u^{82}-0.104829u^{81}+\cdots+2.65151u+1.36301 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1.48382u^{82}+1.56199u^{81}+\cdots-47.0880u+0.730578 \\ 0.0160101u^{82}-0.00198206u^{81}+\cdots-1.69531u-1.51353 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 3.75821u^{82}+4.13643u^{81}+\cdots-2.88911u-1.93224$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_{12}	$u^{83} - u^{82} + \cdots - 2u + 1$
c_2	$u^{83} - 3u^{82} + \cdots - 8u - 97$
c_3	$u^{83} - u^{82} + \cdots - 29240u - 5563$
c_5	$u^{83} + u^{82} + \cdots + 9630u + 2689$
c_6, c_9	$u^{83} - u^{82} + \cdots - 7u^2 + 1$
c_7, c_8, c_{11}	$u^{83} + 7u^{82} + \cdots + 7u^2 - 1$
c_{10}	$u^{83} + 3u^{82} + \cdots - 4u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_{12}	$y^{83} + 71y^{82} + \cdots - 102y - 1$
c_2	$y^{83} - 513y^{82} + \cdots + 637742y - 9409$
c_3	$y^{83} - 533y^{82} + \cdots + 2125110634y - 30946969$
c_5	$y^{83} - 29y^{82} + \cdots - 827229158y - 7230721$
c_6, c_9	$y^{83} - 53y^{82} + \cdots + 14y - 1$
c_7, c_8, c_{11}	$y^{83} - 85y^{82} + \cdots + 14y - 1$
c_{10}	$y^{83} + 7y^{82} + \cdots + 66y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.904665 + 0.431308I$ $a = 0.444111 - 0.833130I$ $b = 1.48483 + 0.03450I$	$-6.93263 - 2.69856I$	0
$u = 0.904665 - 0.431308I$ $a = 0.444111 + 0.833130I$ $b = 1.48483 - 0.03450I$	$-6.93263 + 2.69856I$	0
$u = -0.523171 + 0.935123I$ $a = 0.078517 - 0.193819I$ $b = -1.53601 - 0.20823I$	$-4.33446 - 7.80527I$	0
$u = -0.523171 - 0.935123I$ $a = 0.078517 + 0.193819I$ $b = -1.53601 + 0.20823I$	$-4.33446 + 7.80527I$	0
$u = 0.926387 + 0.043053I$ $a = -1.253500 + 0.168894I$ $b = -1.47810 - 0.00383I$	$-7.59406 - 0.00917I$	$-13.41457 + 0.I$
$u = 0.926387 - 0.043053I$ $a = -1.253500 - 0.168894I$ $b = -1.47810 + 0.00383I$	$-7.59406 + 0.00917I$	$-13.41457 + 0.I$
$u = -0.387244 + 0.823860I$ $a = -0.565051 - 0.405945I$ $b = 0.547345 + 0.608594I$	$2.54832 - 4.77196I$	$0. + 4.88934I$
$u = -0.387244 - 0.823860I$ $a = -0.565051 + 0.405945I$ $b = 0.547345 - 0.608594I$	$2.54832 + 4.77196I$	$0. - 4.88934I$
$u = -0.371273 + 1.048980I$ $a = -0.208988 + 0.342891I$ $b = 1.56520 + 0.18830I$	$-7.61151 - 2.62136I$	0
$u = -0.371273 - 1.048980I$ $a = -0.208988 - 0.342891I$ $b = 1.56520 - 0.18830I$	$-7.61151 + 2.62136I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.849324+0.250360I$ $a=-1.03559-1.28238I$ $b=-1.55846+0.25137I$	$-6.4541+12.6262I$	$-7.38891-7.59104I$
$u=-0.849324-0.250360I$ $a=-1.03559+1.28238I$ $b=-1.55846-0.25137I$	$-6.4541-12.6262I$	$-7.38891+7.59104I$
$u=\ 0.349735+1.067780I$ $a=-0.248736-0.432337I$ $b=\ 0.508066+0.276673I$	$1.92187-4.22604I$	0
$u=\ 0.349735-1.067780I$ $a=-0.248736+0.432337I$ $b=\ 0.508066-0.276673I$	$1.92187+4.22604I$	0
$u=-0.801322+0.161892I$ $a=\ 1.19606+1.08916I$ $b=\ 1.57257-0.25982I$	$-10.32350+6.88913I$	$-11.30755-5.10720I$
$u=-0.801322-0.161892I$ $a=\ 1.19606-1.08916I$ $b=\ 1.57257+0.25982I$	$-10.32350-6.88913I$	$-11.30755+5.10720I$
$u=\ 0.527206+0.622474I$ $a=-0.213152-0.852381I$ $b=\ 1.47354+0.06068I$	$-6.26479-2.24210I$	$-10.47377+2.86125I$
$u=\ 0.527206-0.622474I$ $a=-0.213152+0.852381I$ $b=\ 1.47354-0.06068I$	$-6.26479+2.24210I$	$-10.47377-2.86125I$
$u=\ 0.811237$ $a=\ 0.122702$ $b=\ 0.422769$	-1.35401	-13.8280
$u=-0.768502+0.243547I$ $a=\ 0.659044+0.689542I$ $b=\ 0.601985-0.744053I$	$0.63414+8.95004I$	$-4.61101-8.69193I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.768502-0.243547I$ $a=\ \ 0.659044-0.689542I$ $b=\ \ 0.601985+0.744053I$	$0.63414-8.95004I$	$-4.61101+8.69193I$
$u=\ \ 0.609295+1.049720I$ $a=-0.073062+0.756246I$ $b=-1.48758-0.06918I$	$-4.55776-5.42713I$	0
$u=\ \ 0.609295-1.049720I$ $a=-0.073062-0.756246I$ $b=-1.48758+0.06918I$	$-4.55776+5.42713I$	0
$u=\ \ 0.699140+0.354524I$ $a=\ \ 0.157935+0.565146I$ $b=-0.436838-0.172780I$	$-0.61000-2.03869I$	$-10.08458+9.40265I$
$u=\ \ 0.699140-0.354524I$ $a=\ \ 0.157935-0.565146I$ $b=-0.436838+0.172780I$	$-0.61000+2.03869I$	$-10.08458-9.40265I$
$u=-0.193772+1.213450I$ $a=\ \ 1.038160+0.359525I$ $b=-0.911881-0.647788I$	$0.236787+0.202779I$	0
$u=-0.193772-1.213450I$ $a=\ \ 1.038160-0.359525I$ $b=-0.911881+0.647788I$	$0.236787-0.202779I$	0
$u=-0.110659+1.233990I$ $a=\ \ 0.64968+1.57490I$ $b=\ \ 0.062828-0.831522I$	$3.83261-1.11879I$	0
$u=-0.110659-1.233990I$ $a=\ \ 0.64968-1.57490I$ $b=\ \ 0.062828+0.831522I$	$3.83261+1.11879I$	0
$u=\ \ 0.027460+1.239750I$ $a=\ \ 1.23418-1.00702I$ $b=-1.077100+0.037871I$	$0.784753+0.015689I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.027460 - 1.239750I$ $a = 1.23418 + 1.00702I$ $b = -1.077100 - 0.037871I$	$0.784753 - 0.015689I$	0
$u = 0.162835 + 1.275350I$ $a = 0.33304 + 1.70965I$ $b = -0.007261 - 0.443486I$	$3.90089 - 2.03788I$	0
$u = 0.162835 - 1.275350I$ $a = 0.33304 - 1.70965I$ $b = -0.007261 + 0.443486I$	$3.90089 + 2.03788I$	0
$u = -0.235341 + 1.264360I$ $a = 0.743300 - 0.777633I$ $b = -1.74342 - 0.20507I$	$-1.71143 + 2.17576I$	0
$u = -0.235341 - 1.264360I$ $a = 0.743300 + 0.777633I$ $b = -1.74342 + 0.20507I$	$-1.71143 - 2.17576I$	0
$u = -0.679568 + 0.099033I$ $a = -0.715170 - 0.353529I$ $b = -0.663430 + 0.819395I$	$-3.02457 + 2.97739I$	$-11.4522 - 8.4957I$
$u = -0.679568 - 0.099033I$ $a = -0.715170 + 0.353529I$ $b = -0.663430 - 0.819395I$	$-3.02457 - 2.97739I$	$-11.4522 + 8.4957I$
$u = -0.660019 + 0.182223I$ $a = 0.061412 - 0.133999I$ $b = 0.437248 + 0.838716I$	$1.14107 + 3.77675I$	$-4.42430 - 6.83951I$
$u = -0.660019 - 0.182223I$ $a = 0.061412 + 0.133999I$ $b = 0.437248 - 0.838716I$	$1.14107 - 3.77675I$	$-4.42430 + 6.83951I$
$u = -0.261761 + 1.299130I$ $a = 0.45969 - 2.13143I$ $b = -1.59789 + 0.43691I$	$-1.29190 + 4.37029I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.261761-1.299130I$ $a=\ \ 0.45969+2.13143I$ $b=-1.59789-0.43691I$	$-1.29190-4.37029I$	0
$u=\ \ 0.219448+1.308160I$ $a=\ \ 2.73510-11.43200I$ $b=\ \ 1.41994+0.01827I$	$-0.27613-2.86489I$	0
$u=\ \ 0.219448-1.308160I$ $a=\ \ 2.73510+11.43200I$ $b=\ \ 1.41994-0.01827I$	$-0.27613+2.86489I$	0
$u=\ \ 0.259628+1.304990I$ $a=\ \ 0.360641-0.794383I$ $b=\ \ 0.334600+0.235718I$	$2.59124-3.33493I$	0
$u=\ \ 0.259628-1.304990I$ $a=\ \ 0.360641+0.794383I$ $b=\ \ 0.334600-0.235718I$	$2.59124+3.33493I$	0
$u=\ \ 0.665599$ $a=\ \ 0.644909$ $b=\ \ 0.324269$	-1.54000	-7.43950
$u=-0.658981+0.038729I$ $a=-1.62674-0.57595I$ $b=-1.64085+0.31051I$	$-5.47873+1.02972I$	$-17.8027-5.9458I$
$u=-0.658981-0.038729I$ $a=-1.62674+0.57595I$ $b=-1.64085-0.31051I$	$-5.47873-1.02972I$	$-17.8027+5.9458I$
$u=-0.276913+1.324360I$ $a=-0.40863-1.80806I$ $b=-0.573341+0.956974I$	$1.44716+6.45467I$	0
$u=-0.276913-1.324360I$ $a=-0.40863+1.80806I$ $b=-0.573341-0.956974I$	$1.44716-6.45467I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.364043 + 1.314560I$ $a = -0.16640 + 1.51924I$ $b = -1.46030 - 0.07333I$	$-3.32542 - 4.47511I$	0
$u = 0.364043 - 1.314560I$ $a = -0.16640 - 1.51924I$ $b = -1.46030 + 0.07333I$	$-3.32542 + 4.47511I$	0
$u = 0.227692 + 1.349670I$ $a = -0.67339 - 1.41304I$ $b = -0.310421 + 0.278426I$	$5.03483 - 3.41427I$	0
$u = 0.227692 - 1.349670I$ $a = -0.67339 + 1.41304I$ $b = -0.310421 - 0.278426I$	$5.03483 + 3.41427I$	0
$u = -0.272805 + 1.364300I$ $a = -0.911810 - 0.993141I$ $b = 0.551748 + 0.917797I$	$6.03553 + 7.19350I$	0
$u = -0.272805 - 1.364300I$ $a = -0.911810 + 0.993141I$ $b = 0.551748 - 0.917797I$	$6.03553 - 7.19350I$	0
$u = -0.092196 + 1.389330I$ $a = -0.06722 + 1.61828I$ $b = 0.803073 - 0.549130I$	$8.45681 + 0.24363I$	0
$u = -0.092196 - 1.389330I$ $a = -0.06722 - 1.61828I$ $b = 0.803073 + 0.549130I$	$8.45681 - 0.24363I$	0
$u = 0.101162 + 1.394370I$ $a = -1.84470 - 0.66191I$ $b = 1.340300 + 0.132764I$	$0.07406 - 4.01812I$	0
$u = 0.101162 - 1.394370I$ $a = -1.84470 + 0.66191I$ $b = 1.340300 - 0.132764I$	$0.07406 + 4.01812I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.337682+1.362540I$ $a=-0.37629+2.05946I$ $b=\ \ 1.56580-0.31162I$	$-5.51432+10.99590I$	0
$u=-0.337682-1.362540I$ $a=-0.37629-2.05946I$ $b=\ \ 1.56580+0.31162I$	$-5.51432-10.99590I$	0
$u=\ \ 0.574728+0.106362I$ $a=-0.33938-2.36609I$ $b=-0.116893+0.292931I$	$0.395479-0.483381I$	$4.40966-13.36233I$
$u=\ \ 0.574728-0.106362I$ $a=-0.33938+2.36609I$ $b=-0.116893-0.292931I$	$0.395479+0.483381I$	$4.40966+13.36233I$
$u=\ \ 0.575433$ $a=\ \ 27.0401$ $b=\ \ 1.42241$	-4.41961	257.880
$u=-0.31415+1.39980I$ $a=\ \ 0.30356+1.69619I$ $b=\ \ 0.589076-0.824484I$	$5.85194+12.87300I$	0
$u=-0.31415-1.39980I$ $a=\ \ 0.30356-1.69619I$ $b=\ \ 0.589076+0.824484I$	$5.85194-12.87300I$	0
$u=-0.35115+1.41539I$ $a=\ \ 0.36276-2.03460I$ $b=-1.56117+0.28469I$	$-1.1644+16.9553I$	0
$u=-0.35115-1.41539I$ $a=\ \ 0.36276+2.03460I$ $b=-1.56117-0.28469I$	$-1.1644-16.9553I$	0
$u=\ \ 0.30034+1.43004I$ $a=\ \ 0.126466+0.985341I$ $b=-0.369330-0.393419I$	$5.05592-5.76330I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.30034 - 1.43004I$ $a = 0.126466 - 0.985341I$ $b = -0.369330 + 0.393419I$	$5.05592 + 5.76330I$	0
$u = -0.02030 + 1.47331I$ $a = -0.512899 - 1.238070I$ $b = 0.295028 + 0.672756I$	$9.93674 - 3.97534I$	0
$u = -0.02030 - 1.47331I$ $a = -0.512899 + 1.238070I$ $b = 0.295028 - 0.672756I$	$9.93674 + 3.97534I$	0
$u = -0.199566 + 0.452923I$ $a = 1.24239 + 1.62287I$ $b = 0.461828 - 0.484933I$	$2.79973 - 0.93314I$	$1.18279 - 2.17360I$
$u = -0.199566 - 0.452923I$ $a = 1.24239 - 1.62287I$ $b = 0.461828 + 0.484933I$	$2.79973 + 0.93314I$	$1.18279 + 2.17360I$
$u = 0.39359 + 1.47783I$ $a = -0.439946 - 1.227010I$ $b = 1.46110 + 0.10369I$	$-0.91436 - 7.48576I$	0
$u = 0.39359 - 1.47783I$ $a = -0.439946 + 1.227010I$ $b = 1.46110 - 0.10369I$	$-0.91436 + 7.48576I$	0
$u = 0.04543 + 1.54868I$ $a = 1.134650 + 0.625371I$ $b = -1.41362 - 0.19449I$	$4.49350 - 7.02190I$	0
$u = 0.04543 - 1.54868I$ $a = 1.134650 - 0.625371I$ $b = -1.41362 + 0.19449I$	$4.49350 + 7.02190I$	0
$u = 0.158913 + 0.328968I$ $a = 0.938978 + 0.786692I$ $b = -0.332746 - 0.347602I$	$-0.233005 - 0.980237I$	$-4.40622 + 6.53050I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.158913 - 0.328968I$ $a = 0.938978 - 0.786692I$ $b = -0.332746 + 0.347602I$	$-0.233005 + 0.980237I$	$-4.40622 - 6.53050I$
$u = -0.012139 + 0.141810I$ $a = 2.01713 - 6.48316I$ $b = -1.384180 - 0.065251I$	$-3.17129 - 0.11870I$	$-1.99127 - 1.49453I$
$u = -0.012139 - 0.141810I$ $a = 2.01713 + 6.48316I$ $b = -1.384180 + 0.065251I$	$-3.17129 + 0.11870I$	$-1.99127 + 1.49453I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_4, c_{12}	$u^{83} - u^{82} + \cdots - 2u + 1$
c_2	$u^{83} - 3u^{82} + \cdots - 8u - 97$
c_3	$u^{83} - u^{82} + \cdots - 29240u - 5563$
c_5	$u^{83} + u^{82} + \cdots + 9630u + 2689$
c_6, c_9	$u^{83} - u^{82} + \cdots - 7u^2 + 1$
c_7, c_8, c_{11}	$u^{83} + 7u^{82} + \cdots + 7u^2 - 1$
c_{10}	$u^{83} + 3u^{82} + \cdots - 4u - 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_{12}	$y^{83} + 71y^{82} + \cdots - 102y - 1$
c_2	$y^{83} - 513y^{82} + \cdots + 637742y - 9409$
c_3	$y^{83} - 533y^{82} + \cdots + 2125110634y - 30946969$
c_5	$y^{83} - 29y^{82} + \cdots - 827229158y - 7230721$
c_6, c_9	$y^{83} - 53y^{82} + \cdots + 14y - 1$
c_7, c_8, c_{11}	$y^{83} - 85y^{82} + \cdots + 14y - 1$
c_{10}	$y^{83} + 7y^{82} + \cdots + 66y - 1$