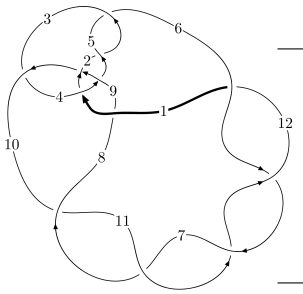
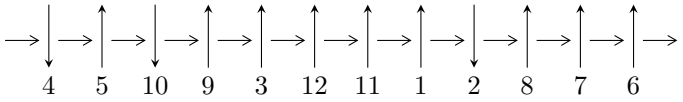
$12a_{0863}$ $(K12a_{0863})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -1.21287 \times 10^{19} u^{64} + 1.88559 \times 10^{21} u^{63} + \cdots + 2.29526 \times 10^{21} b - 1.81954 \times 10^{17},$$
$$1.21260 \times 10^{19} u^{64} - 1.88577 \times 10^{21} u^{63} + \cdots + 2.29526 \times 10^{21} a - 4.20780 \times 10^{21},\ u^{65} - u^{64} + \cdots + 3u + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 65 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.

$\boldsymbol{I_1^u = \langle -1.21\times10^{19}u^{64}+1.89\times10^{21}u^{63}+\cdots+2.30\times10^{21}b-1.82\times10^{17},\ 1.21\times10^{19}u^{64}-1.89\times10^{21}u^{63}+\cdots+2.30\times10^{21}a-4.21\times10^{21},\ u^{65}-u^{64}+\cdots+3u+1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix}1\\0\end{pmatrix}$$

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

$$a_6 = \begin{pmatrix}1\\u^2\end{pmatrix}$$

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

$$a_3 = \begin{pmatrix}-0.00528304u^{64}+0.821593u^{63}+\cdots-3.85538u+1.83325\\0.00528425u^{64}-0.821515u^{63}+\cdots-3.16643u+0.0000792739\end{pmatrix}$$

$$a_5 = \begin{pmatrix}0.00446144u^{64}+0.730022u^{63}+\cdots-5.30127u+2.48337\\-0.00446223u^{64}-0.730061u^{63}+\cdots-3.31679u-0.0000393275\end{pmatrix}$$

$$a_2 = \begin{pmatrix}0.00281825u^{64}+0.833252u^{63}+\cdots+4.38543u+0.116626\\-0.00281820u^{64}-0.833212u^{63}+\cdots+0.716788u+0.0000405652\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}-u\\u\end{pmatrix}$$

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

$$a_9 = \begin{pmatrix}-u^6-3u^4+1\\-u^8-4u^6-4u^4-2u^2\end{pmatrix}$$

$$a_4 = \begin{pmatrix}0.000622185u^{64}+0.0750748u^{63}+\cdots-3.85513u+1.83334\\-0.000622272u^{64}-0.0750774u^{63}+\cdots-3.16667u-2.69978\times10^{-6}\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-u^3-2u\\u^3+u\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{739075401360463280808}{22952617558940928878 29}u^{64}+\frac{5553779548253673895596}{2295261755894092887829}u^{63}+\cdots+\frac{1453511649416049163 0104}{2295261755894092887829}u+\frac{123477431727613192693 22}{2295261755894092887829}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{65} - 11u^{64} + \cdots - u + 1$
c_2, c_5	$u^{65} + u^{64} + \cdots + 11u - 1$
c_3	$u^{65} + u^{64} + \cdots - 587u + 953$
c_4	$u^{65} + 3u^{64} + \cdots + 963u + 251$
c_6, c_7, c_{10} c_{11}, c_{12}	$u^{65} + u^{64} + \cdots + 3u - 1$
c_8	$u^{65} + u^{64} + \cdots - 107u - 1$
c_9	$u^{65} - 3u^{64} + \cdots - u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{65}+3y^{64}+\cdots-11y-1$
c_2, c_5	$y^{65}-45y^{64}+\cdots-11y-1$
c_3	$y^{65}-45y^{64}+\cdots-18627755y-908209$
c_4	$y^{65}-73y^{64}+\cdots+2575937y-63001$
c_6, c_7, c_{10} c_{11}, c_{12}	$y^{65}+83y^{64}+\cdots-3y-1$
c_8	$y^{65}-21y^{64}+\cdots+6349y-1$
c_9	$y^{65}+11y^{64}+\cdots-3y-1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.324128 + 0.936130I$ $a = -1.09302 + 1.30299I$ $b = 0.082181 - 0.503434I$	$-2.40034 + 7.24090I$	0
$u = 0.324128 - 0.936130I$ $a = -1.09302 - 1.30299I$ $b = 0.082181 + 0.503434I$	$-2.40034 - 7.24090I$	0
$u = 0.058124 + 1.021150I$ $a = 0.39135 - 1.54603I$ $b = -0.539037 + 0.901278I$	$-5.27537 - 0.99487I$	0
$u = 0.058124 - 1.021150I$ $a = 0.39135 + 1.54603I$ $b = -0.539037 - 0.901278I$	$-5.27537 + 0.99487I$	0
$u = -0.269057 + 0.937054I$ $a = 0.284515 - 0.610952I$ $b = -0.532484 + 0.070320I$	$-2.06253 - 2.90913I$	0
$u = -0.269057 - 0.937054I$ $a = 0.284515 + 0.610952I$ $b = -0.532484 - 0.070320I$	$-2.06253 + 2.90913I$	0
$u = 0.385420 + 0.961736I$ $a = 0.23634 - 2.24647I$ $b = 0.104185 + 1.382700I$	$2.02839 + 13.16090I$	0
$u = 0.385420 - 0.961736I$ $a = 0.23634 + 2.24647I$ $b = 0.104185 - 1.382700I$	$2.02839 - 13.16090I$	0
$u = -0.429847 + 0.964672I$ $a = 0.078850 + 1.312400I$ $b = -0.087710 - 0.887262I$	$0.89662 - 4.74808I$	0
$u = -0.429847 - 0.964672I$ $a = 0.078850 - 1.312400I$ $b = -0.087710 + 0.887262I$	$0.89662 + 4.74808I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.314439 + 0.872956I$ $a = -0.31327 + 2.44697I$ $b = 0.259549 - 1.127420I$	$2.14552 + 4.73651I$	0
$u = 0.314439 - 0.872956I$ $a = -0.31327 - 2.44697I$ $b = 0.259549 + 1.127420I$	$2.14552 - 4.73651I$	0
$u = -0.261979 + 0.871741I$ $a = -2.35233 - 2.92298I$ $b = 1.35421 + 3.02563I$	$0.12711 - 2.45591I$	0
$u = -0.261979 - 0.871741I$ $a = -2.35233 + 2.92298I$ $b = 1.35421 - 3.02563I$	$0.12711 + 2.45591I$	0
$u = 0.289053 + 0.805920I$ $a = 0.560101 + 0.910910I$ $b = 0.769764 - 0.657178I$	$2.61125 + 0.92001I$	$10.35838 - 1.61741I$
$u = 0.289053 - 0.805920I$ $a = 0.560101 - 0.910910I$ $b = 0.769764 + 0.657178I$	$2.61125 - 0.92001I$	$10.35838 + 1.61741I$
$u = -0.162835 + 0.838324I$ $a = 1.67399 + 0.87780I$ $b = -0.280248 - 1.013690I$	$-0.87255 - 1.60805I$	$6.00000 + 5.45317I$
$u = -0.162835 - 0.838324I$ $a = 1.67399 - 0.87780I$ $b = -0.280248 + 1.013690I$	$-0.87255 + 1.60805I$	$6.00000 - 5.45317I$
$u = -0.092628 + 1.180290I$ $a = -0.840978 + 0.802329I$ $b = 0.236084 - 0.580343I$	$-2.83299 - 5.08772I$	0
$u = -0.092628 - 1.180290I$ $a = -0.840978 - 0.802329I$ $b = 0.236084 + 0.580343I$	$-2.83299 + 5.08772I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.532472+0.581936I$ $a=\ \ 0.359653+0.752618I$ $b=-0.697410-0.164439I$	$3.09795-3.00575I$	$14.1045+10.0032I$
$u=-0.532472-0.581936I$ $a=\ \ 0.359653-0.752618I$ $b=-0.697410+0.164439I$	$3.09795+3.00575I$	$14.1045-10.0032I$
$u=\ \ 0.451917+0.639368I$ $a=-0.029660-0.522836I$ $b=-1.028710+0.520293I$	$3.91640-6.17027I$	$7.07971+2.30194I$
$u=\ \ 0.451917-0.639368I$ $a=-0.029660+0.522836I$ $b=-1.028710-0.520293I$	$3.91640+6.17027I$	$7.07971-2.30194I$
$u=-0.680129+0.170323I$ $a=\ \ 1.001600+0.629885I$ $b=-0.553761+0.076940I$	$4.35899-1.00540I$	$20.7008+5.0169I$
$u=-0.680129-0.170323I$ $a=\ \ 1.001600-0.629885I$ $b=-0.553761-0.076940I$	$4.35899+1.00540I$	$20.7008-5.0169I$
$u=\ \ 0.619172+0.144302I$ $a=\ \ 1.59691-0.92448I$ $b=-0.623408-0.537423I$	$5.42013+9.76545I$	$9.79000-7.37220I$
$u=\ \ 0.619172-0.144302I$ $a=\ \ 1.59691+0.92448I$ $b=-0.623408+0.537423I$	$5.42013-9.76545I$	$9.79000+7.37220I$
$u=\ \ 0.205923+0.598857I$ $a=\ \ 1.29669-0.57305I$ $b=-0.059987-0.280461I$	$-0.66580-1.57263I$	$3.10575+2.35415I$
$u=\ \ 0.205923-0.598857I$ $a=\ \ 1.29669+0.57305I$ $b=-0.059987+0.280461I$	$-0.66580+1.57263I$	$3.10575-2.35415I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.010335+0.617504I$ $a=\ \ 1.307680-0.534985I$ $b=-0.197340-0.348140I$	$-0.65799-1.53035I$	$2.49577+4.53431I$
$u=-0.010335-0.617504I$ $a=\ \ 1.307680+0.534985I$ $b=-0.197340+0.348140I$	$-0.65799+1.53035I$	$2.49577-4.53431I$
$u=\ \ 0.528313+0.122256I$ $a=-0.528984-0.299527I$ $b=\ \ 0.005243+0.913496I$	$0.83726+4.33484I$	$8.01107-7.64767I$
$u=\ \ 0.528313-0.122256I$ $a=-0.528984+0.299527I$ $b=\ \ 0.005243-0.913496I$	$0.83726-4.33484I$	$8.01107+7.64767I$
$u=\ \ 0.524320+0.036054I$ $a=-2.00699+0.30540I$ $b=\ \ 0.874865+0.548909I$	$4.90067+1.87571I$	$15.7861-4.1218I$
$u=\ \ 0.524320-0.036054I$ $a=-2.00699-0.30540I$ $b=\ \ 0.874865-0.548909I$	$4.90067-1.87571I$	$15.7861+4.1218I$
$u=-0.458267$ $a=-6.03074$ $b=-0.211824$	2.77275	-28.7580
$u=-0.445497+0.094527I$ $a=\ \ 0.637012-0.423531I$ $b=\ \ 0.226599-0.250291I$	$1.107960-0.463162I$	$9.21159+1.20629I$
$u=-0.445497-0.094527I$ $a=\ \ 0.637012+0.423531I$ $b=\ \ 0.226599+0.250291I$	$1.107960+0.463162I$	$9.21159-1.20629I$
$u=\ \ 0.02751+1.56537I$ $a=-0.432111+0.242266I$ $b=-0.285023-0.338181I$	$-3.27465-4.58250I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.02751 - 1.56537I$ $a = -0.432111 - 0.242266I$ $b = -0.285023 + 0.338181I$	$-3.27465 + 4.58250I$	0
$u = 0.03404 + 1.66686I$ $a = 1.11783 - 1.17422I$ $b = -2.37959 + 2.42684I$	$-9.12781 - 0.99471I$	0
$u = 0.03404 - 1.66686I$ $a = 1.11783 + 1.17422I$ $b = -2.37959 - 2.42684I$	$-9.12781 + 0.99471I$	0
$u = 0.06301 + 1.66986I$ $a = 1.005040 + 0.262704I$ $b = -1.22784 - 0.87146I$	$-6.11147 + 2.17232I$	0
$u = 0.06301 - 1.66986I$ $a = 1.005040 - 0.262704I$ $b = -1.22784 + 0.87146I$	$-6.11147 - 2.17232I$	0
$u = 0.07662 + 1.68231I$ $a = 0.45152 + 2.14712I$ $b = -0.42780 - 5.18456I$	$-6.84024 + 6.21304I$	0
$u = 0.07662 - 1.68231I$ $a = 0.45152 - 2.14712I$ $b = -0.42780 + 5.18456I$	$-6.84024 - 6.21304I$	0
$u = -0.04521 + 1.68391I$ $a = 1.25462 + 1.36266I$ $b = -2.68362 - 3.82166I$	$-9.85939 - 2.43463I$	0
$u = -0.04521 - 1.68391I$ $a = 1.25462 - 1.36266I$ $b = -2.68362 + 3.82166I$	$-9.85939 + 2.43463I$	0
$u = -0.06445 + 1.68600I$ $a = -1.21200 - 2.26617I$ $b = 4.03468 + 6.58326I$	$-8.91650 - 3.69377I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.06445-1.68600I$ $a=-1.21200+2.26617I$ $b=\ \ 4.03468-6.58326I$	$-8.91650+3.69377I$	0
$u=\ \ 0.08391+1.69898I$ $a=-0.73541+1.68409I$ $b=\ \ 1.62720-3.82199I$	$-11.6884+8.8421I$	0
$u=\ \ 0.08391-1.69898I$ $a=-0.73541-1.68409I$ $b=\ \ 1.62720+3.82199I$	$-11.6884-8.8421I$	0
$u=-0.07063+1.70293I$ $a=\ \ 0.154544-0.773326I$ $b=-0.67957+1.80754I$	$-11.41960-4.25212I$	0
$u=-0.07063-1.70293I$ $a=\ \ 0.154544+0.773326I$ $b=-0.67957-1.80754I$	$-11.41960+4.25212I$	0
$u=-0.11448+1.70115I$ $a=-0.284828+1.185120I$ $b=\ \ 0.15081-3.05011I$	$-8.41150-6.90652I$	0
$u=-0.11448-1.70115I$ $a=-0.284828-1.185120I$ $b=\ \ 0.15081+3.05011I$	$-8.41150+6.90652I$	0
$u=\ \ 0.10323+1.70470I$ $a=-0.40089-2.00987I$ $b=\ \ 0.48020+5.10501I$	$-7.3366+15.1066I$	0
$u=\ \ 0.10323-1.70470I$ $a=-0.40089+2.00987I$ $b=\ \ 0.48020-5.10501I$	$-7.3366-15.1066I$	0
$u=\ \ 0.01436+1.71792I$ $a=\ \ 0.02953-1.66944I$ $b=-0.45613+4.08328I$	$-15.0478-0.7036I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.01436 - 1.71792I$ $a = 0.02953 + 1.66944I$ $b = -0.45613 - 4.08328I$	$-15.0478 + 0.7036I$	0
$u = -0.01921 + 1.74361I$ $a = -1.01827 + 1.00574I$ $b = 2.14452 - 2.51876I$	$-13.2560 - 5.5225I$	0
$u = -0.01921 - 1.74361I$ $a = -1.01827 - 1.00574I$ $b = 2.14452 + 2.51876I$	$-13.2560 + 5.5225I$	0
$u = -0.175614 + 0.182608I$ $a = 2.82636 - 0.76498I$ $b = 0.995509 - 0.313938I$	$1.92909 - 0.63355I$	$4.68520 - 2.34882I$
$u = -0.175614 - 0.182608I$ $a = 2.82636 + 0.76498I$ $b = 0.995509 + 0.313938I$	$1.92909 + 0.63355I$	$4.68520 + 2.34882I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{65} - 11u^{64} + \cdots - u + 1$
c_2, c_5	$u^{65} + u^{64} + \cdots + 11u - 1$
c_3	$u^{65} + u^{64} + \cdots - 587u + 953$
c_4	$u^{65} + 3u^{64} + \cdots + 963u + 251$
c_6, c_7, c_{10} c_{11}, c_{12}	$u^{65} + u^{64} + \cdots + 3u - 1$
c_8	$u^{65} + u^{64} + \cdots - 107u - 1$
c_9	$u^{65} - 3u^{64} + \cdots - u + 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{65}+3y^{64}+\cdots-11y-1$
c_2, c_5	$y^{65}-45y^{64}+\cdots-11y-1$
c_3	$y^{65}-45y^{64}+\cdots-18627755y-908209$
c_4	$y^{65}-73y^{64}+\cdots+2575937y-63001$
c_6, c_7, c_{10} c_{11}, c_{12}	$y^{65}+83y^{64}+\cdots-3y-1$
c_8	$y^{65}-21y^{64}+\cdots+6349y-1$
c_9	$y^{65}+11y^{64}+\cdots-3y-1$