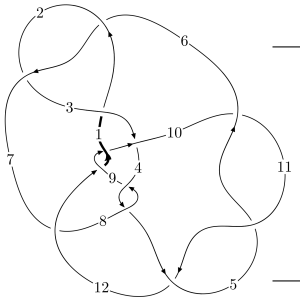
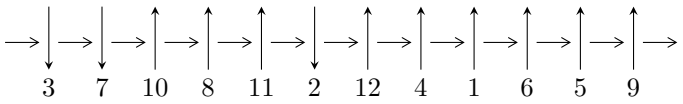
$12a_{0624}$ $(K12a_{0624})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$I_1^u = \langle -1.10901 \times 10^{159} u^{88} + 2.62824 \times 10^{159} u^{87} + \cdots + 1.74259 \times 10^{159} b - 7.22250 \times 10^{158},$
$1.79918 \times 10^{161} u^{88} - 4.32262 \times 10^{161} u^{87} + \cdots + 5.75056 \times 10^{160} a + 7.55383 \times 10^{161},\ u^{89} - 3u^{88} + \cdots + 25u$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 89 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. $\boldsymbol{I_1^u = \langle -1.11 \times 10^{159} u^{88} + 2.63 \times 10^{159} u^{87} + \cdots + 1.74 \times 10^{159} b - 7.22 \times 10^{158},\ 1.80 \times 10^{161} u^{88} - 4.32 \times 10^{161} u^{87} + \cdots + 5.75 \times 10^{160} a + 7.55 \times 10^{161},\ u^{89} - 3u^{88} + \cdots + 25u - 3 \rangle}$

(i) Arc colorings

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

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -3.12871u^{88} + 7.51688u^{87} + \cdots + 109.415u - 13.1358 \\ 0.636414u^{88} - 1.50823u^{87} + \cdots - 12.0674u + 0.414469 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.231096u^{88} + 1.01234u^{87} + \cdots + 61.7683u - 10.7288 \\ 2.08200u^{88} - 5.19544u^{87} + \cdots - 80.1291u + 10.3551 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.150566u^{88} - 0.137480u^{87} + \cdots + 30.2309u - 11.3078 \\ 0.986969u^{88} - 2.61086u^{87} + \cdots - 53.1782u + 9.36670 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 2.53343u^{88} - 7.13992u^{87} + \cdots - 147.071u + 17.9792 \\ -1.56685u^{88} + 3.59942u^{87} + \cdots + 37.5502u - 2.31927 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.887414u^{88} + 1.10529u^{87} + \cdots - 9.46301u + 6.49474 \\ 0.853902u^{88} - 2.02191u^{87} + \cdots - 14.8570u + 0.758719 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -3.76513u^{88} + 9.02512u^{87} + \cdots + 121.482u - 13.5503 \\ 0.636414u^{88} - 1.50823u^{87} + \cdots - 12.0674u + 0.414469 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -3.82241u^{88} + 9.23994u^{87} + \cdots + 126.692u - 14.4481 \\ 0.00747695u^{88} + 0.0854807u^{87} + \cdots + 14.4719u - 3.62999 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 15.1083u^{88} - 38.1525u^{87} + \cdots - 579.178u + 94.3288$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{89}+37u^{88}+\cdots+229u+9$
c_2, c_6	$u^{89}-3u^{88}+\cdots+25u-3$
c_3	$1089(1089u^{89}+13233u^{88}+\cdots+2115u-259)$
c_4, c_8	$u^{89}-3u^{88}+\cdots+25u-3$
c_5, c_{10}, c_{11}	$u^{89}+u^{88}+\cdots-15u-1$
c_7	$1089(1089u^{89}+9075u^{88}+\cdots+8757765u-5706775)$
c_9, c_{12}	$u^{89}-u^{88}+\cdots+17u-1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{89} + 31y^{88} + \cdots - 20963y - 81$
c_2, c_6	$y^{89} - 37y^{88} + \cdots + 229y - 9$
c_3	$1185921(1185921y^{89} - 1.88147 \times 10^7 y^{88} + \cdots + 2227177y - 67081)$
c_4, c_8	$y^{89} + 63y^{88} + \cdots - 59y - 9$
c_5, c_{10}, c_{11}	$y^{89} + 91y^{88} + \cdots + 53y - 1$
c_7	$1185921(1185921y^{89} + 6.81921 \times 10^7 y^{88} + \cdots + 9.41156 \times 10^{13} y - 3.25673 \times 10^{13})$
c_9, c_{12}	$y^{89} - 57y^{88} + \cdots + 53y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.532636+0.845551I$ $a=-0.329471+0.111426I$ $b=\ \ 0.777464-0.546287I$	$2.17262-7.81441I$	0
$u=-0.532636-0.845551I$ $a=-0.329471-0.111426I$ $b=\ \ 0.777464+0.546287I$	$2.17262+7.81441I$	0
$u=-0.697190+0.706132I$ $a=\ \ 0.852079-1.052030I$ $b=-0.434773-0.748501I$	$4.50784+1.34674I$	0
$u=-0.697190-0.706132I$ $a=\ \ 0.852079+1.052030I$ $b=-0.434773+0.748501I$	$4.50784-1.34674I$	0
$u=\ \ 0.880484+0.453167I$ $a=\ \ 0.53480+3.00940I$ $b=\ \ 0.05012+1.51610I$	$-3.69992-1.85198I$	0
$u=\ \ 0.880484-0.453167I$ $a=\ \ 0.53480-3.00940I$ $b=\ \ 0.05012-1.51610I$	$-3.69992+1.85198I$	0
$u=-0.376262+0.908508I$ $a=-0.164022-0.085627I$ $b=\ \ 0.384148+0.325837I$	$1.41143+3.84397I$	0
$u=-0.376262-0.908508I$ $a=-0.164022+0.085627I$ $b=\ \ 0.384148-0.325837I$	$1.41143-3.84397I$	0
$u=-0.938175+0.401004I$ $a=-1.55412+1.82139I$ $b=-0.17732+1.87270I$	$-7.13369+1.50478I$	0
$u=-0.938175-0.401004I$ $a=-1.55412-1.82139I$ $b=-0.17732-1.87270I$	$-7.13369-1.50478I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.550397 + 0.885902I$ $a = 0.256430 + 0.103414I$ $b = -0.613597 - 0.295317I$	$5.86436 + 2.38119I$	0
$u = 0.550397 - 0.885902I$ $a = 0.256430 - 0.103414I$ $b = -0.613597 + 0.295317I$	$5.86436 - 2.38119I$	0
$u = -0.990809 + 0.326016I$ $a = -0.298513 + 0.540908I$ $b = -0.057054 + 0.487891I$	$-1.55145 + 1.37502I$	0
$u = -0.990809 - 0.326016I$ $a = -0.298513 - 0.540908I$ $b = -0.057054 - 0.487891I$	$-1.55145 - 1.37502I$	0
$u = 0.905252 + 0.530463I$ $a = 4.64241 + 0.47408I$ $b = -0.197180 - 0.025948I$	$-0.10358 - 2.04661I$	0
$u = 0.905252 - 0.530463I$ $a = 4.64241 - 0.47408I$ $b = -0.197180 + 0.025948I$	$-0.10358 + 2.04661I$	0
$u = -0.938122 + 0.518125I$ $a = -2.25920 + 1.17993I$ $b = 0.190351 + 1.357710I$	$-3.10521 + 2.76714I$	0
$u = -0.938122 - 0.518125I$ $a = -2.25920 - 1.17993I$ $b = 0.190351 - 1.357710I$	$-3.10521 - 2.76714I$	0
$u = -0.782728 + 0.488112I$ $a = 0.342336 + 0.940192I$ $b = -0.246621 - 0.071250I$	$-1.50935 + 2.07388I$	0
$u = -0.782728 - 0.488112I$ $a = 0.342336 - 0.940192I$ $b = -0.246621 + 0.071250I$	$-1.50935 - 2.07388I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.480693 + 0.965063I$ $a = -0.269333 + 0.692506I$ $b = 0.26611 + 1.53970I$	$-4.63843 + 11.63310I$	0
$u = 0.480693 - 0.965063I$ $a = -0.269333 - 0.692506I$ $b = 0.26611 - 1.53970I$	$-4.63843 - 11.63310I$	0
$u = 0.876714 + 0.264843I$ $a = 1.106160 + 0.454993I$ $b = 0.640905 + 1.124090I$	$-5.48696 + 0.76037I$	0
$u = 0.876714 - 0.264843I$ $a = 1.106160 - 0.454993I$ $b = 0.640905 - 1.124090I$	$-5.48696 - 0.76037I$	0
$u = 0.979855 + 0.475807I$ $a = 1.52486 + 1.95549I$ $b = -0.54385 + 1.67907I$	$-6.57605 - 4.05853I$	0
$u = 0.979855 - 0.475807I$ $a = 1.52486 - 1.95549I$ $b = -0.54385 - 1.67907I$	$-6.57605 + 4.05853I$	0
$u = 0.370514 + 0.813878I$ $a = 0.199700 - 0.361091I$ $b = -0.27361 - 1.53199I$	$-8.84893 + 6.12735I$	0
$u = 0.370514 - 0.813878I$ $a = 0.199700 + 0.361091I$ $b = -0.27361 + 1.53199I$	$-8.84893 - 6.12735I$	0
$u = 0.977486 + 0.532227I$ $a = 0.550302 + 0.974106I$ $b = -0.613667 + 0.315224I$	$-0.16594 - 4.11744I$	0
$u = 0.977486 - 0.532227I$ $a = 0.550302 - 0.974106I$ $b = -0.613667 - 0.315224I$	$-0.16594 + 4.11744I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.776189 + 0.801927I$ $a = 0.608392 + 0.186860I$ $b = -0.05077 + 1.43405I$	$-6.71130 - 2.95857I$	0
$u = 0.776189 - 0.801927I$ $a = 0.608392 - 0.186860I$ $b = -0.05077 - 1.43405I$	$-6.71130 + 2.95857I$	0
$u = 0.592682 + 0.654546I$ $a = -0.968450 - 0.900276I$ $b = 0.824689 - 0.582850I$	$2.14298 + 2.52868I$	0
$u = 0.592682 - 0.654546I$ $a = -0.968450 + 0.900276I$ $b = 0.824689 + 0.582850I$	$2.14298 - 2.52868I$	0
$u = -1.005190 + 0.529887I$ $a = -0.43796 + 1.39245I$ $b = 1.077510 + 0.640281I$	$-3.80322 + 6.41139I$	0
$u = -1.005190 - 0.529887I$ $a = -0.43796 - 1.39245I$ $b = 1.077510 - 0.640281I$	$-3.80322 - 6.41139I$	0
$u = 1.144320 + 0.059059I$ $a = -0.398793 + 0.894332I$ $b = -0.516834 + 0.697007I$	$-4.07816 - 6.32536I$	0
$u = 1.144320 - 0.059059I$ $a = -0.398793 - 0.894332I$ $b = -0.516834 - 0.697007I$	$-4.07816 + 6.32536I$	0
$u = -0.964012 + 0.634990I$ $a = 0.133390 - 0.352220I$ $b = 0.590169 - 0.621489I$	$3.68544 + 3.81135I$	0
$u = -0.964012 - 0.634990I$ $a = 0.133390 + 0.352220I$ $b = 0.590169 + 0.621489I$	$3.68544 - 3.81135I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.420226+1.077630I$ $a=\ \ 0.121883+0.882947I$ $b=-0.17022+1.41805I$	$0.39074-5.12452I$	0
$u=-0.420226-1.077630I$ $a=\ \ 0.121883-0.882947I$ $b=-0.17022-1.41805I$	$0.39074+5.12452I$	0
$u=\ \ 1.003450+0.603777I$ $a=-0.356046+0.311967I$ $b=-1.014410-0.523135I$	$0.92594-7.45495I$	0
$u=\ \ 1.003450-0.603777I$ $a=-0.356046-0.311967I$ $b=-1.014410+0.523135I$	$0.92594+7.45495I$	0
$u=-0.663274+0.482007I$ $a=-0.383552-0.098579I$ $b=-0.081911+1.222220I$	$-2.31044+1.39236I$	$6.00000-4.34365I$
$u=-0.663274-0.482007I$ $a=-0.383552+0.098579I$ $b=-0.081911-1.222220I$	$-2.31044-1.39236I$	$6.00000+4.34365I$
$u=-1.112340+0.394289I$ $a=-0.322205+0.390018I$ $b=-0.003884+0.449466I$	$-1.56596+1.33194I$	0
$u=-1.112340-0.394289I$ $a=-0.322205-0.390018I$ $b=-0.003884-0.449466I$	$-1.56596-1.33194I$	0
$u=-1.206400+0.133026I$ $a=\ \ 0.43556-2.50716I$ $b=\ \ 0.15758-1.60691I$	$-14.1434-3.4037I$	0
$u=-1.206400-0.133026I$ $a=\ \ 0.43556+2.50716I$ $b=\ \ 0.15758+1.60691I$	$-14.1434+3.4037I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.781572+0.064438I$ $a=-0.076040-1.012340I$ $b=-0.766778+0.017173I$	$-2.05830-2.27656I$	$1.43905+3.82974I$
$u=-0.781572-0.064438I$ $a=-0.076040+1.012340I$ $b=-0.766778-0.017173I$	$-2.05830+2.27656I$	$1.43905-3.82974I$
$u=0.638409+0.407830I$ $a=-0.756928-0.235077I$ $b=0.545634+0.053149I$	$0.925151-0.025658I$	$11.59100-0.67651I$
$u=0.638409-0.407830I$ $a=-0.756928+0.235077I$ $b=0.545634-0.053149I$	$0.925151+0.025658I$	$11.59100+0.67651I$
$u=-0.277680+0.700999I$ $a=-0.473863-0.710002I$ $b=0.126131-1.373140I$	$-3.64108-2.19676I$	$3.44360+2.93374I$
$u=-0.277680-0.700999I$ $a=-0.473863+0.710002I$ $b=0.126131+1.373140I$	$-3.64108+2.19676I$	$3.44360-2.93374I$
$u=-1.115820+0.562928I$ $a=1.68042-1.98048I$ $b=-0.19932-1.46094I$	$-5.99017+7.03073I$	0
$u=-1.115820-0.562928I$ $a=1.68042+1.98048I$ $b=-0.19932+1.46094I$	$-5.99017-7.03073I$	0
$u=0.719293+0.152338I$ $a=1.93280-1.48228I$ $b=0.040871-1.218320I$	$-5.14999-0.88242I$	$-2.43783-0.67572I$
$u=0.719293-0.152338I$ $a=1.93280+1.48228I$ $b=0.040871+1.218320I$	$-5.14999+0.88242I$	$-2.43783+0.67572I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.999056+0.783476I$ $a=\ \ 0.419737+0.001742I$ $b=-0.173174-0.368674I$	$-0.89057+3.16272I$	0
$u=-0.999056-0.783476I$ $a=\ \ 0.419737-0.001742I$ $b=-0.173174+0.368674I$	$-0.89057-3.16272I$	0
$u=\ \ 1.118450+0.601095I$ $a=-1.60533-1.82197I$ $b=\ \ 0.33141-1.59528I$	$-11.0564-11.3845I$	0
$u=\ \ 1.118450-0.601095I$ $a=-1.60533+1.82197I$ $b=\ \ 0.33141+1.59528I$	$-11.0564+11.3845I$	0
$u=-1.081930+0.666173I$ $a=\ \ 0.589579-1.180870I$ $b=-0.849627-0.630203I$	$0.50737+13.44270I$	0
$u=-1.081930-0.666173I$ $a=\ \ 0.589579+1.180870I$ $b=-0.849627+0.630203I$	$0.50737-13.44270I$	0
$u=\ \ 1.081650+0.685039I$ $a=-0.436996-0.839442I$ $b=\ \ 0.679308-0.435513I$	$4.23970-8.17310I$	0
$u=\ \ 1.081650-0.685039I$ $a=-0.436996+0.839442I$ $b=\ \ 0.679308+0.435513I$	$4.23970+8.17310I$	0
$u=\ \ 0.515945+1.185570I$ $a=-0.281752-0.887380I$ $b=\ \ 0.08841-1.44924I$	$-4.35102-5.41923I$	0
$u=\ \ 0.515945-1.185570I$ $a=-0.281752+0.887380I$ $b=\ \ 0.08841+1.44924I$	$-4.35102+5.41923I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.327490+0.027957I$ $a=\ \ 0.10271-2.52885I$ $b=-0.16454-1.56585I$	$-11.5806+8.8691I$	0
$u=-1.327490-0.027957I$ $a=\ \ 0.10271+2.52885I$ $b=-0.16454+1.56585I$	$-11.5806-8.8691I$	0
$u=\ \ 1.147680+0.689108I$ $a=\ \ 1.65716+1.78257I$ $b=-0.29117+1.57845I$	$-6.7006-17.6575I$	0
$u=\ \ 1.147680-0.689108I$ $a=\ \ 1.65716-1.78257I$ $b=-0.29117-1.57845I$	$-6.7006+17.6575I$	0
$u=\ \ 1.267310+0.467819I$ $a=-0.91083-2.20761I$ $b=\ \ 0.01027-1.47606I$	$-7.83136-1.39336I$	0
$u=\ \ 1.267310-0.467819I$ $a=-0.91083+2.20761I$ $b=\ \ 0.01027+1.47606I$	$-7.83136+1.39336I$	0
$u=-1.189860+0.697067I$ $a=-1.37002+1.77825I$ $b=\ \ 0.22269+1.48583I$	$-2.01069+11.42240I$	0
$u=-1.189860-0.697067I$ $a=-1.37002-1.77825I$ $b=\ \ 0.22269-1.48583I$	$-2.01069-11.42240I$	0
$u=-0.418699+0.448760I$ $a=\ \ 0.404715-0.840956I$ $b=-0.796403+0.426983I$	$-2.30355-2.21445I$	$3.22069+4.46897I$
$u=-0.418699-0.448760I$ $a=\ \ 0.404715+0.840956I$ $b=-0.796403-0.426983I$	$-2.30355+2.21445I$	$3.22069-4.46897I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.39312 + 0.29865I$ $a = -0.46862 - 2.25091I$ $b = 0.00664 - 1.48464I$	$-7.91900 - 1.38899I$	0
$u = 1.39312 - 0.29865I$ $a = -0.46862 + 2.25091I$ $b = 0.00664 + 1.48464I$	$-7.91900 + 1.38899I$	0
$u = 0.260475 + 0.428192I$ $a = -1.01332 + 2.07686I$ $b = 0.331226 + 0.424317I$	$1.05980 - 1.42675I$	$5.79067 - 2.39869I$
$u = 0.260475 - 0.428192I$ $a = -1.01332 - 2.07686I$ $b = 0.331226 - 0.424317I$	$1.05980 + 1.42675I$	$5.79067 + 2.39869I$
$u = 1.18916 + 0.92841I$ $a = 0.85483 + 1.23080I$ $b = -0.04060 + 1.47076I$	$-6.95103 - 3.87677I$	0
$u = 1.18916 - 0.92841I$ $a = 0.85483 - 1.23080I$ $b = -0.04060 - 1.47076I$	$-6.95103 + 3.87677I$	0
$u = 0.451678$ $a = -1.04395$ $b = 0.420289$	0.782505	13.3570
$u = 0.224099 + 0.200594I$ $a = 2.26767 - 2.14874I$ $b = 0.22553 + 1.43813I$	$-5.13057 + 0.63128I$	$1.44985 - 0.35366I$
$u = 0.224099 - 0.200594I$ $a = 2.26767 + 2.14874I$ $b = 0.22553 - 1.43813I$	$-5.13057 - 0.63128I$	$1.44985 + 0.35366I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{89}+37u^{88}+\cdots+229u+9$
c_2, c_6	$u^{89}-3u^{88}+\cdots+25u-3$
c_3	$1089(1089u^{89}+13233u^{88}+\cdots+2115u-259)$
c_4, c_8	$u^{89}-3u^{88}+\cdots+25u-3$
c_5, c_{10}, c_{11}	$u^{89}+u^{88}+\cdots-15u-1$
c_7	$1089(1089u^{89}+9075u^{88}+\cdots+8757765u-5706775)$
c_9, c_{12}	$u^{89}-u^{88}+\cdots+17u-1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{89}+31y^{88}+\cdots-20963y-81$
c_2, c_6	$y^{89}-37y^{88}+\cdots+229y-9$
c_3	$1185921(1185921y^{89}-1.88147\times10^{7}y^{88}+\cdots+2227177y-67081)$
c_4, c_8	$y^{89}+63y^{88}+\cdots-59y-9$
c_5, c_{10}, c_{11}	$y^{89}+91y^{88}+\cdots+53y-1$
c_7	$1185921(1185921y^{89}+6.81921\times10^{7}y^{88}+\cdots+9.41156\times10^{13}y-3.25673\times10^{13})$
c_9, c_{12}	$y^{89}-57y^{88}+\cdots+53y-1$