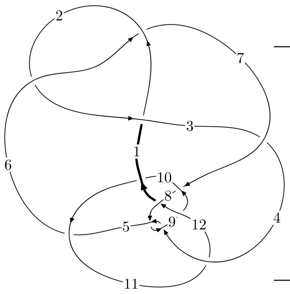
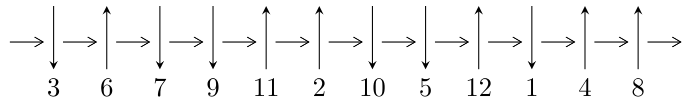
$12a_{0222}$ ($K12a_{0222}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 2u^{36} + u^{35} + \cdots + b - 9,\ 3u^{36} - 3u^{35} + \cdots + a + 1,\ u^{37} - 2u^{36} + \cdots + 2u - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 37 representations.

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[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.

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$\boldsymbol{I_1^u = \langle 2u^{36}+u^{35}+\cdots+b-9,\ 3u^{36}-3u^{35}+\cdots+a+1,\ u^{37}-2u^{36}+\cdots+2u-1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^4+u^2+1 \\ u^4 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -3u^{36}+3u^{35}+\cdots+5u-1 \\ -2u^{36}-u^{35}+\cdots+u+9 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -4u^{35}+10u^{34}+\cdots-11u+11 \\ -6u^{36}+17u^{35}+\cdots+18u-12 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2+1 \\ -u^4 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 6u^{36}-10u^{35}+\cdots-12u+1 \\ 5u^{36}-14u^{35}+\cdots-14u+15 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -3u^{36}+2u^{35}+\cdots+9u+1 \\ 11u^{36}-15u^{35}+\cdots-6u-8 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 2u^{36}-3u^{35}+\cdots-2u+1 \\ 3u^{36}-7u^{35}+\cdots-6u+10 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 2u^{36}-u^{35}+\cdots+u-15 \\ 5u^{36}-12u^{35}+\cdots-11u+1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$= 50u^{36}-53u^{35}+513u^{34}-472u^{33}+2604u^{32}-2103u^{31}+8527u^{30}-6002u^{29}+19933u^{28}-12090u^{27}+34843u^{26}-17999u^{25}+46330u^{24}-20392u^{23}+46429u^{22}-18028u^{21}+33354u^{20}-12865u^{19}+14474u^{18}-7621u^{17}+482u^{16}-3677u^{15}-3764u^{14}-1370u^{13}-1746u^{12}-705u^{11}+628u^{10}-954u^{9}+992u^{8}-1056u^{7}+361u^{6}-706u^{5}-43u^{4}-276u^{3}-89u^{2}-49u-37$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{37} - 20u^{36} + \cdots - 10u + 1$
c_2	$u^{37} - 2u^{36} + \cdots + 2u - 1$
c_3	$u^{37} + 2u^{36} + \cdots + 8u - 1$
c_4	$u^{37} + u^{36} + \cdots - u - 1$
c_5	$u^{37} - 7u^{35} + \cdots - 2u - 1$
c_6	$u^{37} + 2u^{36} + \cdots + 2u + 1$
c_7	$u^{37} - 3u^{36} + \cdots - 7u - 1$
c_8	$u^{37} - u^{36} + \cdots - u + 1$
c_9	$u^{37} + 20u^{36} + \cdots + 23u + 1$
c_{10}	$u^{37} - 17u^{36} + \cdots + 23u - 1$
c_{11}	$u^{37} - 4u^{36} + \cdots - 2u + 1$
c_{12}	$u^{37} + 7u^{36} + \cdots + 3u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{37} + 4y^{36} + \cdots - 10y - 1$
c_2, c_6	$y^{37} + 20y^{36} + \cdots - 10y - 1$
c_3	$y^{37} - 6y^{36} + \cdots + 8y - 1$
c_4, c_8	$y^{37} + 21y^{36} + \cdots - 29y - 1$
c_5	$y^{37} - 14y^{36} + \cdots - 12y - 1$
c_7	$y^{37} - 17y^{36} + \cdots + 17y - 1$
c_9	$y^{37} + 4y^{36} + \cdots + 13y - 1$
c_{10}	$y^{37} + 7y^{36} + \cdots + 35y - 1$
c_{11}	$y^{37} + 4y^{36} + \cdots + 24y - 1$
c_{12}	$y^{37} - 17y^{36} + \cdots + 17y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.149884 + 0.975736I$ $a = -0.898991 + 0.581003I$ $b = -1.59695 + 0.70098I$	$-1.70560 + 1.29082I$	$-4.10550 - 4.13500I$
$u = -0.149884 - 0.975736I$ $a = -0.898991 - 0.581003I$ $b = -1.59695 - 0.70098I$	$-1.70560 - 1.29082I$	$-4.10550 + 4.13500I$
$u = -0.600365 + 0.704581I$ $a = 0.757124 + 0.641967I$ $b = -0.204265 + 0.747533I$	$0.834960 + 0.285553I$	$-0.434596 + 0.220919I$
$u = -0.600365 - 0.704581I$ $a = 0.757124 - 0.641967I$ $b = -0.204265 - 0.747533I$	$0.834960 - 0.285553I$	$-0.434596 - 0.220919I$
$u = -0.479565 + 0.990246I$ $a = 0.864069 + 0.151474I$ $b = -0.0946240 + 0.0662065I$	$-0.363148 - 0.677922I$	$0.56726 + 2.15135I$
$u = -0.479565 - 0.990246I$ $a = 0.864069 - 0.151474I$ $b = -0.0946240 - 0.0662065I$	$-0.363148 + 0.677922I$	$0.56726 - 2.15135I$
$u = -0.532442 + 0.982690I$ $a = -0.780782 - 0.630467I$ $b = -0.290116 - 1.327480I$	$-0.06388 - 4.77621I$	$-1.68090 + 5.53681I$
$u = -0.532442 - 0.982690I$ $a = -0.780782 + 0.630467I$ $b = -0.290116 + 1.327480I$	$-0.06388 + 4.77621I$	$-1.68090 - 5.53681I$
$u = -0.204733 + 0.857295I$ $a = -1.38015 + 0.70474I$ $b = 0.0824504 + 0.0328733I$	$-1.37034 - 3.02368I$	$-8.36272 + 7.29707I$
$u = -0.204733 - 0.857295I$ $a = -1.38015 - 0.70474I$ $b = 0.0824504 - 0.0328733I$	$-1.37034 + 3.02368I$	$-8.36272 - 7.29707I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.459092 + 1.035940I$ $a = 0.59291 + 1.57136I$ $b = -0.33683 + 2.07268I$	$2.24562 - 1.84888I$	$1.43556 + 1.62892I$
$u = 0.459092 - 1.035940I$ $a = 0.59291 - 1.57136I$ $b = -0.33683 - 2.07268I$	$2.24562 + 1.84888I$	$1.43556 - 1.62892I$
$u = 0.477509 + 1.033510I$ $a = -1.05702 + 2.06127I$ $b = -0.71022 + 2.96225I$	$2.36710 + 8.22059I$	$0.94025 - 9.93315I$
$u = 0.477509 - 1.033510I$ $a = -1.05702 - 2.06127I$ $b = -0.71022 - 2.96225I$	$2.36710 - 8.22059I$	$0.94025 + 9.93315I$
$u = 0.834958$ $a = -2.24679$ $b = 0.265283$	-3.19671	32.4830
$u = 0.325483 + 1.152650I$ $a = 0.15406 - 1.63598I$ $b = 0.69492 - 2.01501I$	$-4.68461 - 1.11526I$	$-3.13705 + 0.65063I$
$u = 0.325483 - 1.152650I$ $a = 0.15406 + 1.63598I$ $b = 0.69492 + 2.01501I$	$-4.68461 + 1.11526I$	$-3.13705 - 0.65063I$
$u = -0.500299 + 0.608166I$ $a = -0.471582 - 0.257960I$ $b = -0.12074 - 1.48951I$	$0.79654 - 3.35515I$	$4.80142 + 6.29346I$
$u = -0.500299 - 0.608166I$ $a = -0.471582 + 0.257960I$ $b = -0.12074 + 1.48951I$	$0.79654 + 3.35515I$	$4.80142 - 6.29346I$
$u = -0.743965 + 0.168516I$ $a = -1.330750 + 0.223235I$ $b = -0.105331 + 0.292541I$	$2.40521 + 5.56732I$	$3.26355 - 5.71144I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.743965-0.168516I$ $a=-1.330750-0.223235I$ $b=-0.105331-0.292541I$	$2.40521-5.56732I$	$3.26355+5.71144I$
$u=-0.314889+1.198120I$ $a=\ \ 0.053522+0.871053I$ $b=\ \ 0.06739+1.50640I$	$-1.73005+1.92880I$	$-3.35941-1.64027I$
$u=-0.314889-1.198120I$ $a=\ \ 0.053522-0.871053I$ $b=\ \ 0.06739-1.50640I$	$-1.73005-1.92880I$	$-3.35941+1.64027I$
$u=\ \ 0.714811+0.247691I$ $a=-2.06738-0.58596I$ $b=-0.967121-0.060412I$	$-0.67794-4.35069I$	$2.48170+5.54176I$
$u=\ \ 0.714811-0.247691I$ $a=-2.06738+0.58596I$ $b=-0.967121+0.060412I$	$-0.67794+4.35069I$	$2.48170-5.54176I$
$u=\ \ 0.533806+1.137330I$ $a=-0.38517-2.11869I$ $b=-0.58596-2.85980I$	$-3.23500+9.09894I$	$0.-9.05167I$
$u=\ \ 0.533806-1.137330I$ $a=-0.38517+2.11869I$ $b=-0.58596+2.85980I$	$-3.23500-9.09894I$	$0.+9.05167I$
$u=-0.521067+1.151720I$ $a=-0.140342+1.155190I$ $b=\ \ 0.15772+1.99777I$	$-0.38678-10.27070I$	$0.+8.69635I$
$u=-0.521067-1.151720I$ $a=-0.140342-1.155190I$ $b=\ \ 0.15772-1.99777I$	$-0.38678+10.27070I$	$0.-8.69635I$
$u=\ \ 0.897315+0.915050I$ $a=-0.059712-0.132929I$ $b=-0.232633+0.073399I$	$7.99878+3.29456I$	$-79.2024-47.4542I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.897315 - 0.915050I$ $a = -0.059712 + 0.132929I$ $b = -0.232633 - 0.073399I$	$7.99878 - 3.29456I$	$-79.2024 + 47.4542I$
$u = 0.404936 + 0.589401I$ $a = 1.90809 - 1.55602I$ $b = 0.60872 - 1.28187I$	$3.85891 - 4.38520I$	$4.22215 + 3.53032I$
$u = 0.404936 - 0.589401I$ $a = 1.90809 + 1.55602I$ $b = 0.60872 + 1.28187I$	$3.85891 + 4.38520I$	$4.22215 - 3.53032I$
$u = 0.451703 + 1.222140I$ $a = 0.26811 - 1.73234I$ $b = 0.44350 - 3.82544I$	$-6.86605 + 4.55927I$	$40.6626 - 31.2987I$
$u = 0.451703 - 1.222140I$ $a = 0.26811 + 1.73234I$ $b = 0.44350 + 3.82544I$	$-6.86605 - 4.55927I$	$40.6626 + 31.2987I$
$u = 0.365073 + 0.561552I$ $a = 1.097390 - 0.689191I$ $b = 1.05744 + 0.96070I$	$3.81957 + 5.52202I$	$4.99553 - 7.13279I$
$u = 0.365073 - 0.561552I$ $a = 1.097390 + 0.689191I$ $b = 1.05744 - 0.96070I$	$3.81957 - 5.52202I$	$4.99553 + 7.13279I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{37} - 20u^{36} + \cdots - 10u + 1$
c_2	$u^{37} - 2u^{36} + \cdots + 2u - 1$
c_3	$u^{37} + 2u^{36} + \cdots + 8u - 1$
c_4	$u^{37} + u^{36} + \cdots - u - 1$
c_5	$u^{37} - 7u^{35} + \cdots - 2u - 1$
c_6	$u^{37} + 2u^{36} + \cdots + 2u + 1$
c_7	$u^{37} - 3u^{36} + \cdots - 7u - 1$
c_8	$u^{37} - u^{36} + \cdots - u + 1$
c_9	$u^{37} + 20u^{36} + \cdots + 23u + 1$
c_{10}	$u^{37} - 17u^{36} + \cdots + 23u - 1$
c_{11}	$u^{37} - 4u^{36} + \cdots - 2u + 1$
c_{12}	$u^{37} + 7u^{36} + \cdots + 3u - 1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{37} + 4y^{36} + \cdots - 10y - 1$
c_2, c_6	$y^{37} + 20y^{36} + \cdots - 10y - 1$
c_3	$y^{37} - 6y^{36} + \cdots + 8y - 1$
c_4, c_8	$y^{37} + 21y^{36} + \cdots - 29y - 1$
c_5	$y^{37} - 14y^{36} + \cdots - 12y - 1$
c_7	$y^{37} - 17y^{36} + \cdots + 17y - 1$
c_9	$y^{37} + 4y^{36} + \cdots + 13y - 1$
c_{10}	$y^{37} + 7y^{36} + \cdots + 35y - 1$
c_{11}	$y^{37} + 4y^{36} + \cdots + 24y - 1$
c_{12}	$y^{37} - 17y^{36} + \cdots + 17y - 1$