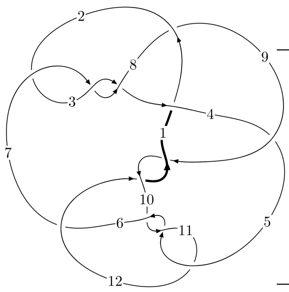
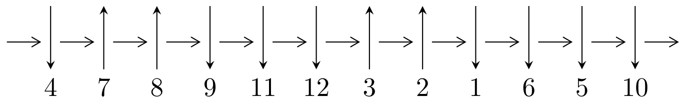
$12a_{1024}$ ($K12a_{1024}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I^u_1 = \langle u^{74} + u^{73} + \cdots - u + 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 74 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. $I_1^u = \langle u^{74} + u^{73} + \cdots - u + 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^3 + 2u \\ -u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^{10} + 5u^8 - 8u^6 + 3u^4 + u^2 + 1 \\ -u^{10} + 4u^8 - 5u^6 + 2u^4 - u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^6 - 3u^4 + 2u^2 + 1 \\ -u^8 + 4u^6 - 4u^4 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^{17} - 8u^{15} + 25u^{13} - 36u^{11} + 19u^9 + 4u^7 - 2u^5 - 4u^3 + u \\ -u^{19} + 9u^{17} - 32u^{15} + 55u^{13} - 43u^{11} + 9u^9 + 4u^5 - u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^{28} - 13u^{26} + \cdots + u^2 + 1 \\ -u^{30} + 14u^{28} + \cdots - 4u^4 - u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^{57} - 26u^{55} + \cdots + 2u^3 + u \\ -u^{59} + 27u^{57} + \cdots - u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^{50} + 23u^{48} + \cdots + u^2 + 1 \\ -u^{50} + 22u^{48} + \cdots - 4u^4 - u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{72} + 132u^{70} + \cdots - 8u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{74} - 15u^{73} + \cdots - 21743u + 1519$
c_2, c_3, c_7	$u^{74} + u^{73} + \cdots - u + 1$
c_4	$u^{74} - u^{73} + \cdots - 55u + 25$
c_5, c_{10}, c_{11}	$u^{74} - u^{73} + \cdots - u + 1$
c_6	$u^{74} + u^{73} + \cdots - 931u + 457$
c_8	$u^{74} - 3u^{73} + \cdots + 15u - 1$
c_9, c_{12}	$u^{74} - 11u^{73} + \cdots - 267u + 11$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{74} + 29y^{73} + \cdots + 17219705y + 2307361$
c_2, c_3, c_7	$y^{74} - 67y^{73} + \cdots + y + 1$
c_4	$y^{74} + 5y^{73} + \cdots - 5975y + 625$
c_5, c_{10}, c_{11}	$y^{74} + 69y^{73} + \cdots + y + 1$
c_6	$y^{74} + 25y^{73} + \cdots + 6053133y + 208849$
c_8	$y^{74} - 7y^{73} + \cdots - 195y + 1$
c_9, c_{12}	$y^{74} + 61y^{73} + \cdots + 4281y + 121$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.03301$	-1.07564	0
$u = 1.044940 + 0.102604I$	$2.61986 + 2.87585I$	0
$u = 1.044940 - 0.102604I$	$2.61986 - 2.87585I$	0
$u = -1.156210 + 0.191012I$	$2.43321 - 4.72367I$	0
$u = -1.156210 - 0.191012I$	$2.43321 + 4.72367I$	0
$u = 1.158590 + 0.218669I$	$8.21260 + 7.93871I$	0
$u = 1.158590 - 0.218669I$	$8.21260 - 7.93871I$	0
$u = 1.196130 + 0.144822I$	$2.98003 + 1.08515I$	0
$u = 1.196130 - 0.144822I$	$2.98003 - 1.08515I$	0
$u = 0.320215 + 0.704487I$	$8.01003 + 11.14000I$	$0.39689 - 8.47644I$
$u = 0.320215 - 0.704487I$	$8.01003 - 11.14000I$	$0.39689 + 8.47644I$
$u = -0.315680 + 0.695529I$	$2.04162 - 7.74964I$	$-3.30901 + 8.85384I$
$u = -0.315680 - 0.695529I$	$2.04162 + 7.74964I$	$-3.30901 - 8.85384I$
$u = -0.338213 + 0.679862I$	$8.91437 - 0.94078I$	$1.86731 + 2.75945I$
$u = -0.338213 - 0.679862I$	$8.91437 + 0.94078I$	$1.86731 - 2.75945I$
$u = 0.320814 + 0.680420I$	$2.53500 + 3.64664I$	$-1.83229 - 2.76221I$
$u = 0.320814 - 0.680420I$	$2.53500 - 3.64664I$	$-1.83229 + 2.76221I$
$u = 0.600609 + 0.432783I$	$9.12086 - 7.18945I$	$2.91452 + 2.88104I$
$u = 0.600609 - 0.432783I$	$9.12086 + 7.18945I$	$2.91452 - 2.88104I$
$u = -1.244690 + 0.203790I$	$8.80185 + 1.44373I$	0
$u = -1.244690 - 0.203790I$	$8.80185 - 1.44373I$	0
$u = 0.255238 + 0.678124I$	$1.10543 + 6.03198I$	$-4.27580 - 8.07217I$
$u = 0.255238 - 0.678124I$	$1.10543 - 6.03198I$	$-4.27580 + 8.07217I$
$u = -0.545619 + 0.465386I$	$9.78040 - 2.94455I$	$3.94521 + 3.50317I$
$u = -0.545619 - 0.465386I$	$9.78040 + 2.94455I$	$3.94521 - 3.50317I$
$u = -0.580884 + 0.417872I$	$3.13814 + 3.88721I$	$-0.60973 - 3.22333I$
$u = -0.580884 - 0.417872I$	$3.13814 - 3.88721I$	$-0.60973 + 3.22333I$
$u = -0.229715 + 0.657701I$	$-3.02571 - 3.01416I$	$-10.84049 + 5.92197I$
$u = -0.229715 - 0.657701I$	$-3.02571 + 3.01416I$	$-10.84049 - 5.92197I$
$u = 0.544204 + 0.430911I$	$3.50761 + 0.14409I$	$0.63672 - 3.50408I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \ \ 0.544204 - 0.430911I$	$3.50761 - 0.14409I$	$0.63672 + 3.50408I$
$u = \ \ 0.180185 + 0.648822I$	$0.206108 + 0.208045I$	$-6.68575 - 1.16976I$
$u = \ \ 0.180185 - 0.648822I$	$0.206108 - 0.208045I$	$-6.68575 + 1.16976I$
$u = \ \ 0.043373 + 0.667655I$	$4.86508 - 4.63110I$	$-3.42865 + 2.90350I$
$u = \ \ 0.043373 - 0.667655I$	$4.86508 + 4.63110I$	$-3.42865 - 2.90350I$
$u = \ \ 1.344970 + 0.183030I$	$3.43197 + 1.12512I$	0
$u = \ \ 1.344970 - 0.183030I$	$3.43197 - 1.12512I$	0
$u = -0.354775 + 0.535609I$	$5.20691 - 1.66335I$	$3.09565 + 4.27561I$
$u = -0.354775 - 0.535609I$	$5.20691 + 1.66335I$	$3.09565 - 4.27561I$
$u = -0.055516 + 0.627489I$	$-0.83877 + 1.62690I$	$-7.90840 - 3.45819I$
$u = -0.055516 - 0.627489I$	$-0.83877 - 1.62690I$	$-7.90840 + 3.45819I$
$u = \ \ 0.592806 + 0.205238I$	$2.64797 - 2.62283I$	$-0.82675 + 2.90416I$
$u = \ \ 0.592806 - 0.205238I$	$2.64797 + 2.62283I$	$-0.82675 - 2.90416I$
$u = -1.367910 + 0.115025I$	$8.34672 + 1.48194I$	0
$u = -1.367910 - 0.115025I$	$8.34672 - 1.48194I$	0
$u = -1.368940 + 0.243993I$	$5.12052 - 3.43600I$	0
$u = -1.368940 - 0.243993I$	$5.12052 + 3.43600I$	0
$u = -1.385570 + 0.216376I$	$4.94675 - 3.91535I$	0
$u = -1.385570 - 0.216376I$	$4.94675 + 3.91535I$	0
$u = \ \ 1.389990 + 0.255951I$	$2.13515 + 6.33953I$	0
$u = \ \ 1.389990 - 0.255951I$	$2.13515 - 6.33953I$	0
$u = -1.40031 + 0.26526I$	$6.38349 - 9.46596I$	0
$u = -1.40031 - 0.26526I$	$6.38349 + 9.46596I$	0
$u = \ \ 1.42079 + 0.21110I$	$10.85890 + 4.43876I$	0
$u = \ \ 1.42079 - 0.21110I$	$10.85890 - 4.43876I$	0
$u = \ \ 0.206283 + 0.524313I$	$-0.161322 + 1.134130I$	$-2.63011 - 5.69236I$
$u = \ \ 0.206283 - 0.524313I$	$-0.161322 - 1.134130I$	$-2.63011 + 5.69236I$
$u = -1.42841 + 0.26365I$	$8.13467 - 7.09316I$	0
$u = -1.42841 - 0.26365I$	$8.13467 + 7.09316I$	0
$u = -1.44510 + 0.14916I$	$9.77486 - 2.20808I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.44510 - 0.14916I$	$9.77486 + 2.20808I$	0
$u = 1.44646 + 0.13855I$	$9.50233 - 1.95720I$	0
$u = 1.44646 - 0.13855I$	$9.50233 + 1.95720I$	0
$u = 1.42809 + 0.27008I$	$7.62286 + 11.27000I$	0
$u = 1.42809 - 0.27008I$	$7.62286 - 11.27000I$	0
$u = -1.43094 + 0.27329I$	$13.6165 - 14.7026I$	0
$u = -1.43094 - 0.27329I$	$13.6165 + 14.7026I$	0
$u = 1.43495 + 0.26103I$	$14.5965 + 4.3748I$	0
$u = 1.43495 - 0.26103I$	$14.5965 - 4.3748I$	0
$u = -1.45330 + 0.13463I$	$15.6001 + 5.2588I$	0
$u = -1.45330 - 0.13463I$	$15.6001 - 5.2588I$	0
$u = 1.45302 + 0.15468I$	$16.1228 + 5.1353I$	0
$u = 1.45302 - 0.15468I$	$16.1228 - 5.1353I$	0
$u = -0.526726$	-1.25260	-7.49050

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{74} - 15u^{73} + \cdots - 21743u + 1519$
c_2, c_3, c_7	$u^{74} + u^{73} + \cdots - u + 1$
c_4	$u^{74} - u^{73} + \cdots - 55u + 25$
c_5, c_{10}, c_{11}	$u^{74} - u^{73} + \cdots - u + 1$
c_6	$u^{74} + u^{73} + \cdots - 931u + 457$
c_8	$u^{74} - 3u^{73} + \cdots + 15u - 1$
c_9, c_{12}	$u^{74} - 11u^{73} + \cdots - 267u + 11$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{74} + 29y^{73} + \cdots + 17219705y + 2307361$
c_2, c_3, c_7	$y^{74} - 67y^{73} + \cdots + y + 1$
c_4	$y^{74} + 5y^{73} + \cdots - 5975y + 625$
c_5, c_{10}, c_{11}	$y^{74} + 69y^{73} + \cdots + y + 1$
c_6	$y^{74} + 25y^{73} + \cdots + 6053133y + 208849$
c_8	$y^{74} - 7y^{73} + \cdots - 195y + 1$
c_9, c_{12}	$y^{74} + 61y^{73} + \cdots + 4281y + 121$