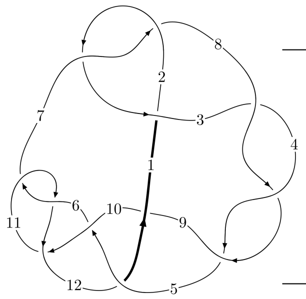
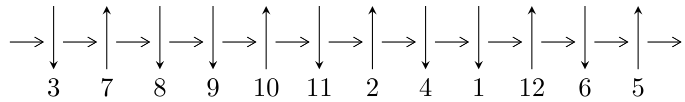
$12a_{0500}$ $(K12a_{0500})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{83} - u^{82} + \cdots - u^2 - 1 \rangle$$

* 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. $I_1^u = \langle u^{83} - u^{82} + \cdots - u^2 - 1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^6 - u^4 + 1 \\ u^6 + 2u^4 + u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^9 + 2u^7 + u^5 - 2u^3 - u \\ -u^9 - 3u^7 - 3u^5 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^{14} - 3u^{12} - 4u^{10} - u^8 + 1 \\ -u^{16} - 4u^{14} - 8u^{12} - 8u^{10} - 4u^8 + 2u^6 + 4u^4 + 2u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^{39} - 10u^{37} + \cdots + 7u^7 + 6u^5 \\ -u^{41} - 11u^{39} + \cdots + 2u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^{23} - 6u^{21} - 16u^{19} - 20u^{17} - 4u^{15} + 22u^{13} + 26u^{11} + 6u^9 - 9u^7 - 6u^5 \\ u^{23} + 7u^{21} + \cdots + 2u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^{62} - 17u^{60} + \cdots + 6u^6 + 1 \\ u^{62} + 18u^{60} + \cdots - 12u^6 + u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{81} - 4u^{80} + \cdots + 4u - 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{83} + 47u^{82} + \cdots - 2u - 1$
c_2, c_7	$u^{83} + u^{82} + \cdots + u^2 + 1$
c_3, c_4, c_8	$u^{83} - u^{82} + \cdots + 124u + 17$
c_5	$u^{83} + u^{82} + \cdots + 450u + 317$
c_6, c_{11}	$u^{83} - u^{82} + \cdots + u^2 + 1$
c_9	$u^{83} - 11u^{82} + \cdots + 98u - 29$
c_{10}	$u^{83} - 39u^{82} + \cdots - 2u + 1$
c_{12}	$u^{83} - 5u^{82} + \cdots - 2422u + 1767$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{83} - 21y^{82} + \cdots - 6y - 1$
c_2, c_7	$y^{83} + 47y^{82} + \cdots - 2y - 1$
c_3, c_4, c_8	$y^{83} - 89y^{82} + \cdots + 16906y - 289$
c_5	$y^{83} - 17y^{82} + \cdots + 3479646y - 100489$
c_6, c_{11}	$y^{83} + 39y^{82} + \cdots - 2y - 1$
c_9	$y^{83} - 9y^{82} + \cdots - 36274y - 841$
c_{10}	$y^{83} + 11y^{82} + \cdots - 14y - 1$
c_{12}	$y^{83} + 27y^{82} + \cdots - 121693646y - 3122289$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.133220+0.991655I$	$0.112602-1.022790I$	0
$u=-0.133220-0.991655I$	$0.112602+1.022790I$	0
$u=\ \ 0.464485+0.901515I$	$3.37380+4.66521I$	0
$u=\ \ 0.464485-0.901515I$	$3.37380-4.66521I$	0
$u=\ \ 0.460237+0.843965I$	$2.23760-2.68577I$	$-61.406699+0.10I$
$u=\ \ 0.460237-0.843965I$	$2.23760+2.68577I$	$-61.406699+0.10I$
$u=-0.412629+0.867916I$	$-0.09451-1.65097I$	$-2.00000+3.87536I$
$u=-0.412629-0.867916I$	$-0.09451+1.65097I$	$-2.00000-3.87536I$
$u=\ \ 0.180004+1.062710I$	$-4.06382-0.99415I$	0
$u=\ \ 0.180004-1.062710I$	$-4.06382+0.99415I$	0
$u=-0.158085+1.073960I$	$-2.03798+5.86401I$	0
$u=-0.158085-1.073960I$	$-2.03798-5.86401I$	0
$u=-0.481262+0.976359I$	$2.43576-4.31801I$	0
$u=-0.481262-0.976359I$	$2.43576+4.31801I$	0
$u=\ \ 0.240406+1.063530I$	$-4.57539+0.99512I$	0
$u=\ \ 0.240406-1.063530I$	$-4.57539-0.99512I$	0
$u=-0.272320+1.076070I$	$-3.03173-5.70325I$	0
$u=-0.272320-1.076070I$	$-3.03173+5.70325I$	0
$u=\ \ 0.442956+1.018750I$	$-3.12620+5.10527I$	0
$u=\ \ 0.442956-1.018750I$	$-3.12620-5.10527I$	0
$u=\ \ 0.481407+1.002460I$	$-1.91913+6.94168I$	0
$u=\ \ 0.481407-1.002460I$	$-1.91913-6.94168I$	0
$u=-0.405689+1.036190I$	$-2.06362-0.62641I$	0
$u=-0.405689-1.036190I$	$-2.06362+0.62641I$	0
$u=-0.493791+1.001660I$	$0.34760-11.85990I$	0
$u=-0.493791-1.001660I$	$0.34760+11.85990I$	0
$u=\ \ 0.869469+0.062981I$	$-4.54025-10.83720I$	$-2.95711+7.16406I$
$u=\ \ 0.869469-0.062981I$	$-4.54025+10.83720I$	$-2.95711-7.16406I$
$u=\ \ 0.870200+0.027576I$	$-6.76117+1.63137I$	$-5.57883-2.57822I$
$u=\ \ 0.870200-0.027576I$	$-6.76117-1.63137I$	$-5.57883+2.57822I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.869280 + 0.038602I$	$-7.89508 + 3.30997I$	$-7.43042 - 3.23415I$
$u = -0.869280 - 0.038602I$	$-7.89508 - 3.30997I$	$-7.43042 + 3.23415I$
$u = -0.868116 + 0.056802I$	$-6.74487 + 5.74130I$	$-6.14356 - 3.20858I$
$u = -0.868116 - 0.056802I$	$-6.74487 - 5.74130I$	$-6.14356 + 3.20858I$
$u = 0.853560 + 0.057638I$	$-2.00681 - 3.24204I$	$0.21808 + 1.91880I$
$u = 0.853560 - 0.057638I$	$-2.00681 + 3.24204I$	$0.21808 - 1.91880I$
$u = 0.809740$	-2.84497	-3.18540
$u = 0.485858 + 0.628329I$	$2.83112 + 6.65892I$	$2.83091 - 7.70358I$
$u = 0.485858 - 0.628329I$	$2.83112 - 6.65892I$	$2.83091 + 7.70358I$
$u = -0.274315 + 0.744403I$	$-0.270932 - 1.367880I$	$-2.47570 + 5.35724I$
$u = -0.274315 - 0.744403I$	$-0.270932 + 1.367880I$	$-2.47570 - 5.35724I$
$u = -0.788512 + 0.033384I$	$0.20844 + 3.73783I$	$1.09851 - 4.05017I$
$u = -0.788512 - 0.033384I$	$0.20844 - 3.73783I$	$1.09851 + 4.05017I$
$u = -0.443590 + 0.624580I$	$0.55457 - 2.06035I$	$-0.38344 + 4.13562I$
$u = -0.443590 - 0.624580I$	$0.55457 + 2.06035I$	$-0.38344 - 4.13562I$
$u = 0.480548 + 0.557812I$	$4.32394 - 0.70252I$	$6.01189 - 0.11159I$
$u = 0.480548 - 0.557812I$	$4.32394 + 0.70252I$	$6.01189 + 0.11159I$
$u = -0.448739 + 1.209870I$	$-3.40183 - 0.64725I$	0
$u = -0.448739 - 1.209870I$	$-3.40183 + 0.64725I$	0
$u = -0.470662 + 1.211330I$	$-3.24116 - 8.31020I$	0
$u = -0.470662 - 1.211330I$	$-3.24116 + 8.31020I$	0
$u = 0.460140 + 1.220060I$	$-6.43985 + 4.54605I$	0
$u = 0.460140 - 1.220060I$	$-6.43985 - 4.54605I$	0
$u = -0.570994 + 0.382917I$	$2.05864 + 7.62104I$	$1.38296 - 6.80721I$
$u = -0.570994 - 0.382917I$	$2.05864 - 7.62104I$	$1.38296 + 6.80721I$
$u = 0.431215 + 1.244170I$	$-5.94329 + 1.26047I$	0
$u = 0.431215 - 1.244170I$	$-5.94329 - 1.26047I$	0
$u = -0.524837 + 0.426422I$	$3.94874 + 0.21511I$	$5.20374 - 0.31901I$
$u = -0.524837 - 0.426422I$	$3.94874 - 0.21511I$	$5.20374 + 0.31901I$
$u = 0.489637 + 1.231500I$	$-5.52049 + 8.08364I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.489637 - 1.231500I$	$-5.52049 - 8.08364I$	0
$u = 0.428440 + 1.254520I$	$-8.55613 - 6.29178I$	0
$u = 0.428440 - 1.254520I$	$-8.55613 + 6.29178I$	0
$u = -0.432241 + 1.253290I$	$-10.73130 + 1.17929I$	0
$u = -0.432241 - 1.253290I$	$-10.73130 - 1.17929I$	0
$u = -0.443165 + 1.252520I$	$-11.81410 - 1.31817I$	0
$u = -0.443165 - 1.252520I$	$-11.81410 + 1.31817I$	0
$u = 0.449371 + 1.252030I$	$-10.64110 + 6.29820I$	0
$u = 0.449371 - 1.252030I$	$-10.64110 - 6.29820I$	0
$u = -0.492052 + 1.237880I$	$-10.2955 - 10.6345I$	0
$u = -0.492052 - 1.237880I$	$-10.2955 + 10.6345I$	0
$u = 0.495073 + 1.237260I$	$-8.0709 + 15.7500I$	0
$u = 0.495073 - 1.237260I$	$-8.0709 - 15.7500I$	0
$u = -0.483809 + 1.241760I$	$-11.51720 - 8.16214I$	0
$u = -0.483809 - 1.241760I$	$-11.51720 + 8.16214I$	0
$u = 0.478597 + 1.243910I$	$-10.42700 + 3.19484I$	0
$u = 0.478597 - 1.243910I$	$-10.42700 - 3.19484I$	0
$u = 0.546008 + 0.366004I$	$-0.17694 - 2.80834I$	$-1.96326 + 3.21508I$
$u = 0.546008 - 0.366004I$	$-0.17694 + 2.80834I$	$-1.96326 - 3.21508I$
$u = -0.545383 + 0.148864I$	$0.31558 - 3.00332I$	$-1.47850 + 2.74614I$
$u = -0.545383 - 0.148864I$	$0.31558 + 3.00332I$	$-1.47850 - 2.74614I$
$u = 0.500212 + 0.257889I$	$-1.12463 - 1.27478I$	$-4.20587 + 3.81637I$
$u = 0.500212 - 0.257889I$	$-1.12463 + 1.27478I$	$-4.20587 - 3.81637I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{83} + 47u^{82} + \cdots - 2u - 1$
c_2, c_7	$u^{83} + u^{82} + \cdots + u^2 + 1$
c_3, c_4, c_8	$u^{83} - u^{82} + \cdots + 124u + 17$
c_5	$u^{83} + u^{82} + \cdots + 450u + 317$
c_6, c_{11}	$u^{83} - u^{82} + \cdots + u^2 + 1$
c_9	$u^{83} - 11u^{82} + \cdots + 98u - 29$
c_{10}	$u^{83} - 39u^{82} + \cdots - 2u + 1$
c_{12}	$u^{83} - 5u^{82} + \cdots - 2422u + 1767$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{83} - 21y^{82} + \cdots - 6y - 1$
c_2, c_7	$y^{83} + 47y^{82} + \cdots - 2y - 1$
c_3, c_4, c_8	$y^{83} - 89y^{82} + \cdots + 16906y - 289$
c_5	$y^{83} - 17y^{82} + \cdots + 3479646y - 100489$
c_6, c_{11}	$y^{83} + 39y^{82} + \cdots - 2y - 1$
c_9	$y^{83} - 9y^{82} + \cdots - 36274y - 841$
c_{10}	$y^{83} + 11y^{82} + \cdots - 14y - 1$
c_{12}	$y^{83} + 27y^{82} + \cdots - 121693646y - 3122289$