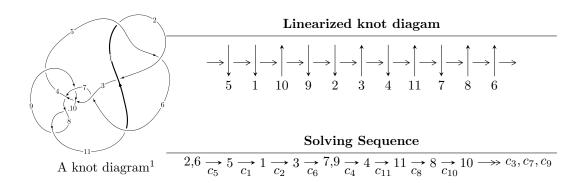
$11a_{72} (K11a_{72})$



Ideals for irreducible components² of X_{par}

$$I_1^u = \langle 9.34803 \times 10^{24} u^{76} - 2.11084 \times 10^{24} u^{75} + \dots + 9.10663 \times 10^{24} b + 2.06273 \times 10^{24},$$

$$2.74420 \times 10^{25} u^{76} - 4.20119 \times 10^{25} u^{75} + \dots + 9.10663 \times 10^{24} a + 1.31742 \times 10^{25}, \ u^{77} - 2u^{76} + \dots - u - 1 \rangle$$

$$I_2^u = \langle b + 1, \ a - 2, \ u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 78 representations.

¹The 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.

 $\begin{matrix} \text{I.} \\ I_1^u = \langle 9.35 \times 10^{24} u^{76} - 2.11 \times 10^{24} u^{75} + \dots + 9.11 \times 10^{24} b + 2.06 \times 10^{24}, \ 2.74 \times 10^{25} u^{76} - 4.20 \times 10^{25} u^{75} + \dots + 9.11 \times 10^{24} a + 1.32 \times 10^{25}, \ u^{77} - 2u^{76} + \dots - u - 1 \rangle \end{matrix}$

(i) Arc colorings

$$a_{2} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{6} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{5} = \begin{pmatrix} 1 \\ -u^{2} \end{pmatrix}$$

$$a_{1} = \begin{pmatrix} u \\ -u^{3} + u \end{pmatrix}$$

$$a_{3} = \begin{pmatrix} u^{8} - u^{6} + u^{4} + 1 \\ -u^{10} + 2u^{8} - 3u^{6} + 2u^{4} - u^{2} \end{pmatrix}$$

$$a_{9} = \begin{pmatrix} -3.01341u^{76} + 4.61333u^{75} + \dots - 6.55819u - 1.44666 \\ -1.02651u^{76} + 0.231791u^{75} + \dots + 2.18024u - 0.226508 \end{pmatrix}$$

$$a_{4} = \begin{pmatrix} -4.68917u^{76} + 6.28660u^{75} + \dots - 16.1580u - 3.80329 \\ 0.0425498u^{76} - 0.839980u^{75} + \dots + 2.36327u + 0.839980 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^{3} \\ -u^{3} + u \end{pmatrix}$$

$$a_{8} = \begin{pmatrix} -2.84647u^{76} + 4.44668u^{75} + \dots - 6.17515u - 1.26334 \\ -0.993730u^{76} + 0.182343u^{75} + \dots + 1.42940u - 0.193730 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -2.78104u^{76} + 4.37995u^{75} + \dots - 7.68244u - 1.12997 \\ -1.05786u^{76} + 0.320078u^{75} + \dots + 2.03322u - 0.257856 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -2.78104u^{76} + 4.37995u^{75} + \dots - 7.68244u - 1.12997 \\ -1.05786u^{76} + 0.320078u^{75} + \dots + 2.03322u - 0.257856 \end{pmatrix}$$

- (ii) Obstruction class = -1
- (iii) Cusp Shapes = $-\frac{98621680931509431399030560}{4553313053666260493091767}u^{76} + \frac{105996530335693508948090410}{4553313053666260493091767}u^{75} + \dots \frac{186890667880794717580337970}{4553313053666260493091767}u^{-85143874290832413279068140}{4553313053666260493091767}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1,c_5	$u^{77} + 2u^{76} + \dots - u + 1$
c_2	$u^{77} + 36u^{76} + \dots - u + 1$
c_3	$u^{77} - 4u^{76} + \dots - 1931u + 431$
c_4	$u^{77} - 2u^{76} + \dots + 22949u + 1393$
c_6	$u^{77} - 22u^{75} + \dots - 44155u + 8353$
<i>c</i> ₇	$u^{77} + 4u^{76} + \dots + u + 1$
c_8, c_{10}	$u^{77} + 2u^{76} + \dots - u + 1$
<i>c</i> ₉	$u^{77} - 13u^{76} + \dots + 2u + 2$
c_{11}	$u^{77} + 3u^{76} + \dots + 523u^2 + 32$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{77} - 36y^{76} + \dots - y - 1$
c_2	$y^{77} + 12y^{76} + \dots - 69y - 1$
<i>c</i> ₃	$y^{77} - 92y^{76} + \dots + 8518895y - 185761$
C ₄	$y^{77} - 48y^{76} + \dots + 99292559y - 1940449$
<i>c</i> ₆	$y^{77} - 44y^{76} + \dots + 683599815y - 69772609$
	$y^{77} + 12y^{76} + \dots - y - 1$
c_8, c_{10}	$y^{77} - 56y^{76} + \dots - 21y - 1$
<i>c</i> ₉	$y^{77} + 9y^{76} + \dots - 40y - 4$
c_{11}	$y^{77} + 9y^{76} + \dots - 33472y - 1024$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = -0.633423 + 0.760124I $a = -0.611333 - 0.236752I$ $b = -0.164228 + 0.298926I$	7.04838 + 0.24930I	0
u = -0.633423 - 0.760124I $a = -0.611333 + 0.236752I$ $b = -0.164228 - 0.298926I$	7.04838 - 0.24930I	0
u = -0.976497 + 0.154539I $a = 1.94444 + 0.74223I$ $b = -1.75615 + 0.52296I$	1.58545 - 1.56270I	0
u = -0.976497 - 0.154539I $a = 1.94444 - 0.74223I$ $b = -1.75615 - 0.52296I$	1.58545 + 1.56270I	0
u = 0.980965 + 0.263279I $a = -5.16701 + 1.31783I$ $b = 2.20127 + 1.66225I$	-0.098989 - 0.629989I	0
u = 0.980965 - 0.263279I $a = -5.16701 - 1.31783I$ $b = 2.20127 - 1.66225I$	-0.098989 + 0.629989I	0
u = 0.602244 + 0.740774I $a = 0.487640 - 0.874753I$ $b = 0.138617 + 0.833361I$	7.76295 - 8.98786I	5.03981 + 6.60179I
u = 0.602244 - 0.740774I $a = 0.487640 + 0.874753I$ $b = 0.138617 - 0.833361I$	7.76295 + 8.98786I	5.03981 - 6.60179I
u = 1.001230 + 0.352341I $a = 2.57836 + 0.25405I$ $b = -0.34696 - 2.11296I$	-0.63003 - 1.40723I	0
u = 1.001230 - 0.352341I $a = 2.57836 - 0.25405I$ $b = -0.34696 + 2.11296I$	-0.63003 + 1.40723I	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = -0.986878 + 0.427459I		
a = -1.09537 + 1.40681I	0.14403 + 4.20779I	0
b = -0.15416 - 2.04505I		
u = -0.986878 - 0.427459I		
a = -1.09537 - 1.40681I	0.14403 - 4.20779I	0
b = -0.15416 + 2.04505I		
u = -0.857333 + 0.345143I		
a = 1.55446 + 0.57642I	2.25018 + 1.60092I	4.93810 - 3.13192I
b = -1.251310 - 0.537113I		
u = -0.857333 - 0.345143I		
a = 1.55446 - 0.57642I	2.25018 - 1.60092I	4.93810 + 3.13192I
b = -1.251310 + 0.537113I		
u = -0.390473 + 0.833868I		
a = -0.426341 + 0.195318I	5.65147 - 3.46025I	8.06773 + 5.13180I
b = -0.962283 - 0.945326I		
u = -0.390473 - 0.833868I		
a = -0.426341 - 0.195318I	5.65147 + 3.46025I	8.06773 - 5.13180I
b = -0.962283 + 0.945326I		
u = 1.057940 + 0.262256I		
a = 0.163573 + 0.640731I	-2.24047 - 0.49207I	0
b = 0.273950 - 0.088341I		
u = 1.057940 - 0.262256I		
a = 0.163573 - 0.640731I	-2.24047 + 0.49207I	0
b = 0.273950 + 0.088341I		
u = -1.081720 + 0.191062I		
a = 1.184630 + 0.277945I	-2.82137 - 3.73074I	0
b = -0.759225 + 0.986911I		
u = -1.081720 - 0.191062I		
a = 1.184630 - 0.277945I	-2.82137 + 3.73074I	0
b = -0.759225 - 0.986911I		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = 0.387547 + 0.806255I		
a = 0.563280 + 0.658078I	6.58364 + 11.91200I	3.84588 - 6.37900I
b = 1.72067 - 1.45490I		
u = 0.387547 - 0.806255I		
a = 0.563280 - 0.658078I	6.58364 - 11.91200I	3.84588 + 6.37900I
b = 1.72067 + 1.45490I		
u = 0.541842 + 0.673198I		
a = 0.09318 + 1.41546I	2.59107 - 3.68436I	3.37129 + 6.54731I
b = 0.631068 - 0.608537I		
u = 0.541842 - 0.673198I		
a = 0.09318 - 1.41546I	2.59107 + 3.68436I	3.37129 - 6.54731I
b = 0.631068 + 0.608537I		
u = 0.483139 + 0.708206I		
a = -0.886828 + 0.978020I	6.41209 - 0.81622I	9.40053 + 2.76203I
b = -0.0147570 - 0.0914207I		
u = 0.483139 - 0.708206I		
a = -0.886828 - 0.978020I	6.41209 + 0.81622I	9.40053 - 2.76203I
b = -0.0147570 + 0.0914207I		
u = 0.440637 + 0.729674I		
a = -1.102280 - 0.664605I	6.18768 + 3.22828I	8.64527 - 4.04810I
b = -1.33147 + 1.25437I		
u = 0.440637 - 0.729674I		
a = -1.102280 + 0.664605I	6.18768 - 3.22828I	8.64527 + 4.04810I
b = -1.33147 - 1.25437I		
u = 0.392152 + 0.748358I		
a = -0.246077 - 1.227730I	1.81609 + 5.99286I	1.94012 - 6.31838I
b = -1.38993 + 0.56100I		
u = 0.392152 - 0.748358I		
a = -0.246077 + 1.227730I	1.81609 - 5.99286I	1.94012 + 6.31838I
b = -1.38993 - 0.56100I		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = -1.150190 + 0.154691I		
a = -1.66372 - 1.56905I	1.48123 - 9.38293I	0
b = 1.70843 + 0.15475I		
u = -1.150190 - 0.154691I		
a = -1.66372 + 1.56905I	1.48123 + 9.38293I	0
b = 1.70843 - 0.15475I		
u = -1.097430 + 0.397998I		
a = -2.20501 - 0.41756I	-4.75169 + 4.63385I	0
b = 1.71177 - 0.97354I		
u = -1.097430 - 0.397998I		
a = -2.20501 + 0.41756I	-4.75169 - 4.63385I	0
b = 1.71177 + 0.97354I		
u = 1.019250 + 0.569973I		
a = -0.968680 + 0.492416I	1.17732 - 1.14110I	0
b = 1.56760 + 0.09910I		
u = 1.019250 - 0.569973I		
a = -0.968680 - 0.492416I	1.17732 + 1.14110I	0
b = 1.56760 - 0.09910I		
u = -0.966449 + 0.658776I		
a = -0.544919 + 0.354770I	6.05588 + 5.10252I	0
b = -0.060655 + 0.135899I		
u = -0.966449 - 0.658776I		
a = -0.544919 - 0.354770I	6.05588 - 5.10252I	0
b = -0.060655 - 0.135899I		
u = 0.988060 + 0.637942I		
a = 1.037290 + 0.762523I	6.61756 + 3.75380I	0
b = -0.344734 - 0.328832I		
u = 0.988060 - 0.637942I		
a = 1.037290 - 0.762523I	6.61756 - 3.75380I	0
b = -0.344734 + 0.328832I		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = -0.441519 + 0.688569I		
a = -0.640475 - 0.410726I	3.93132 - 1.04131I	-17.5631 - 6.0870I
b = 3.57366 - 0.54646I		
u = -0.441519 - 0.688569I		
a = -0.640475 + 0.410726I	3.93132 + 1.04131I	-17.5631 + 6.0870I
b = 3.57366 + 0.54646I		
u = -1.048020 + 0.551434I		
a = 1.50338 + 1.61813I	0.78969 + 4.81154I	0
b = -2.00955 - 0.35919I		
u = -1.048020 - 0.551434I		
a = 1.50338 - 1.61813I	0.78969 - 4.81154I	0
b = -2.00955 + 0.35919I		
u = 1.098860 + 0.457057I		
a = -1.34783 + 1.20877I	-4.35858 - 2.73970I	0
b = 1.55693 + 0.45145I		
u = 1.098860 - 0.457057I		
a = -1.34783 - 1.20877I	-4.35858 + 2.73970I	0
b = 1.55693 - 0.45145I		
u = -0.490723 + 0.637155I		
a = 0.495475 + 0.840231I	2.43954 - 0.14027I	3.53078 + 1.38098I
b = -1.195810 - 0.341182I		
u = -0.490723 - 0.637155I		
a = 0.495475 - 0.840231I	2.43954 + 0.14027I	3.53078 - 1.38098I
b = -1.195810 + 0.341182I		
u = -0.385008 + 0.703290I		
a = 0.458055 - 0.514268I	1.91834 - 1.76256I	1.60352 - 0.19237I
b = 0.110246 + 0.984199I		
u = -0.385008 - 0.703290I		
a = 0.458055 + 0.514268I	1.91834 + 1.76256I	1.60352 + 0.19237I
b = 0.110246 - 0.984199I		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = 0.799179		
a = 0.890054	-1.30832	-7.95820
b = 0.0869293		
u = 1.056810 + 0.584937I		
a = -0.203663 - 0.214512I	4.71591 - 4.15265I	0
b = 0.316267 - 0.635080I		
u = 1.056810 - 0.584937I		
a = -0.203663 + 0.214512I	4.71591 + 4.15265I	0
b = 0.316267 + 0.635080I		
u = 1.204850 + 0.137903I		
a = 0.838912 - 0.786254I	0.272573 + 0.769014I	0
b = -1.002720 + 0.299954I		
u = 1.204850 - 0.137903I		
a = 0.838912 + 0.786254I	0.272573 - 0.769014I	0
b = -1.002720 - 0.299954I		
u = -1.072810 + 0.570326I		
a = -2.14473 - 4.53419I	2.07576 + 5.91007I	0
b = 3.85106 + 0.99547I		
u = -1.072810 - 0.570326I		
a = -2.14473 + 4.53419I	2.07576 - 5.91007I	0
b = 3.85106 - 0.99547I		
u = 1.080330 + 0.586452I		
a = 2.30172 - 0.66834I	4.30053 - 8.25445I	0
b = -2.15681 - 1.66870I		
u = 1.080330 - 0.586452I		
a = 2.30172 + 0.66834I	4.30053 + 8.25445I	0
b = -2.15681 + 1.66870I		
u = 1.169410 + 0.384995I		
a = 0.36891 - 1.39572I	-2.52184 + 1.07600I	0
b = -1.18116 + 0.86341I		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = 1.169410 - 0.384995I		
a = 0.36891 + 1.39572I	-2.52184 - 1.07600I	0
b = -1.18116 - 0.86341I		
u = -1.096480 + 0.564671I		
a = -1.317570 + 0.511258I	-0.15987 + 6.64038I	0
b = 0.728265 - 1.085450I		
u = -1.096480 - 0.564671I		
a = -1.317570 - 0.511258I	-0.15987 - 6.64038I	0
b = 0.728265 + 1.085450I		
u = -1.156250 + 0.450661I		
a = 1.72500 - 0.52320I	-2.08535 + 9.31159I	0
b = -0.61479 + 1.66456I		
u = -1.156250 - 0.450661I		
a = 1.72500 + 0.52320I	-2.08535 - 9.31159I	0
b = -0.61479 - 1.66456I		
u = 1.103350 + 0.581743I		
a = 1.78047 - 1.06989I	-0.27685 - 11.04150I	0
b = -2.32561 - 0.37152I		
u = 1.103350 - 0.581743I		
a = 1.78047 + 1.06989I	-0.27685 + 11.04150I	0
b = -2.32561 + 0.37152I		
u = -0.055639 + 0.747611I		
a = -0.219020 - 0.528181I	1.12267 - 5.01345I	1.50910 + 6.72977I
b = -0.662916 - 1.064330I		
u = -0.055639 - 0.747611I		
a = -0.219020 + 0.528181I	1.12267 + 5.01345I	1.50910 - 6.72977I
b = -0.662916 + 1.064330I		
u = 1.122420 + 0.599973I		
a = -2.78774 + 0.73339I	4.3964 - 17.1730I	0
b = 2.40366 + 1.65651I		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = 1.122420 - 0.599973I		
a = -2.78774 - 0.73339I	4.3964 + 17.1730I	0
b = 2.40366 - 1.65651I		
u = -1.128570 + 0.611450I		
a = 1.63288 + 0.43606I	3.44557 + 8.83292I	0
b = -1.35747 + 1.10949I		
u = -1.128570 - 0.611450I		
a = 1.63288 - 0.43606I	3.44557 - 8.83292I	0
b = -1.35747 - 1.10949I		
u = 0.075487 + 0.572572I		
a = 0.631910 - 0.139374I	-1.67112 - 1.17907I	-4.23336 + 1.76718I
b = 1.047670 + 0.274040I		
u = 0.075487 - 0.572572I		
a = 0.631910 + 0.139374I	-1.67112 + 1.17907I	-4.23336 - 1.76718I
b = 1.047670 - 0.274040I		
u = -0.190674 + 0.306614I		
a = 2.29001 + 1.56288I	1.87411 - 0.91268I	3.90518 + 0.39794I
b = -0.541888 + 1.030790I		
u = -0.190674 - 0.306614I		
a = 2.29001 - 1.56288I	1.87411 + 0.91268I	3.90518 - 0.39794I
b = -0.541888 - 1.030790I		

II.
$$I_2^u=\langle b+1,\; a-2,\; u+1
angle$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 2 \\ -1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 2 \\ -1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 3 \\ -1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 2 \\ -1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 2 \\ -1 \end{pmatrix}$$

- (ii) Obstruction class = 1
- (iii) Cusp Shapes = 0

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_4 c_{10}	u-1
c_2, c_5, c_6 c_7, c_8	u+1
c_{9}, c_{11}	u

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_4, c_5, c_6 c_7, c_8, c_{10}	y-1
c_9,c_{11}	y

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = -1.00000		
a = 2.00000	0	0
b = -1.00000		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$ (u-1)(u^{77} + 2u^{76} + \dots - u + 1) $
c_2	$(u+1)(u^{77}+36u^{76}+\cdots-u+1)$
c_3	$(u-1)(u^{77} - 4u^{76} + \dots - 1931u + 431)$
c_4	$(u-1)(u^{77} - 2u^{76} + \dots + 22949u + 1393)$
<i>C</i> ₅	$(u+1)(u^{77}+2u^{76}+\cdots-u+1)$
c_6	$(u+1)(u^{77} - 22u^{75} + \dots - 44155u + 8353)$
c_7	$(u+1)(u^{77}+4u^{76}+\cdots+u+1)$
c_8	$(u+1)(u^{77}+2u^{76}+\cdots-u+1)$
c_9	$u(u^{77} - 13u^{76} + \dots + 2u + 2)$
c_{10}	$(u-1)(u^{77}+2u^{76}+\cdots-u+1)$
c_{11}	$u(u^{77} + 3u^{76} + \dots + 523u^2 + 32)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$(y-1)(y^{77}-36y^{76}+\cdots-y-1)$
c_2	$(y-1)(y^{77}+12y^{76}+\cdots-69y-1)$
c_3	$(y-1)(y^{77} - 92y^{76} + \dots + 8518895y - 185761)$
c_4	$(y-1)(y^{77} - 48y^{76} + \dots + 9.92926 \times 10^7 y - 1940449)$
<i>c</i> ₆	$(y-1)(y^{77} - 44y^{76} + \dots + 6.83600 \times 10^8 y - 6.97726 \times 10^7)$
	$(y-1)(y^{77}+12y^{76}+\cdots-y-1)$
c_8, c_{10}	$(y-1)(y^{77}-56y^{76}+\cdots-21y-1)$
<i>C</i> 9	$y(y^{77} + 9y^{76} + \dots - 40y - 4)$
c_{11}	$y(y^{77} + 9y^{76} + \dots - 33472y - 1024)$