$\underline{12a_{0305}\ (K12a_{0305})}$

Linearized knot diagam

| 3 | 6 | 8 | 10 | 7 | 2 | 1 | 11 | 12 | 5 | 9 | 4 |

A knot diagram[1]

Solving Sequence

$$2,6 \xrightarrow[c_2]{} 3 \xrightarrow[c_6]{} 7 \xrightarrow[c_1]{} 1 \xrightarrow[c_7]{} 8 \xrightarrow[c_5]{} 5,10 \xrightarrow[c_{10}]{} 11 \xrightarrow[c_4]{} 4 \xrightarrow[c_{12}]{} 12 \xrightarrow[c_9]{} 9 \Rrightarrow c_3, c_8, c_{11}$$
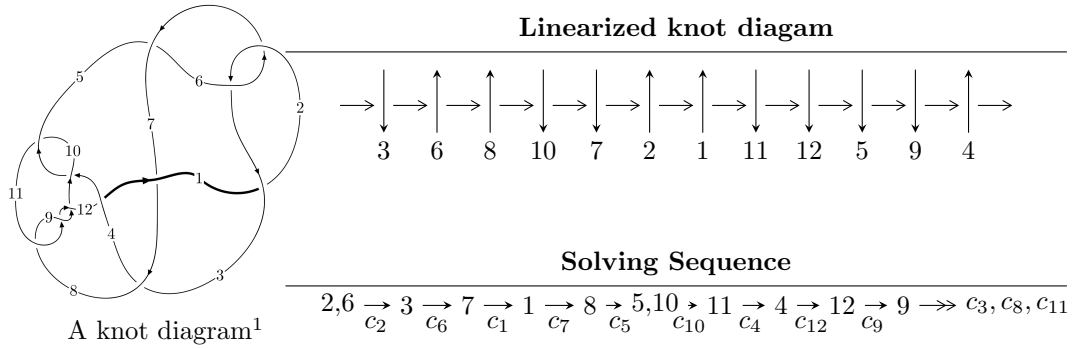
Ideals for irreducible components[2]of $X_{\mathbf{par}}$

$I_1^u = \langle -u^{89} - u^{88} + \cdots + b - 2u,\ u^{87} + 14u^{85} + \cdots + a + 1,\ u^{92} + 2u^{91} + \cdots + 3u - 1 \rangle$

$I_2^u = \langle u^8 - u^7 + u^6 - u^5 + u^4 - u^3 + b - u,\ -u^6 - u^4 - u^2 + a - u,\ u^9 - u^8 + 2u^7 - u^6 + 3u^5 - u^4 + 2u^3 + u + 1$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 101 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.

I.

$$I_1^u = \langle -u^{89} - u^{88} + \cdots + b - 2u,\ u^{87} + 14u^{85} + \cdots + a + 1,\ u^{92} + 2u^{91} + \cdots + 3u - 1 \rangle$$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^2 + 1 \\ -u^4 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^7 + 2u^5 + 2u^3 + 2u \\ -u^9 - u^7 - u^5 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^3 \\ u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^{87} - 14u^{85} + \cdots - 3u - 1 \\ u^{89} + u^{88} + \cdots + 3u^2 + 2u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 2u^{91} + 2u^{90} + \cdots + 4u^2 - 2 \\ 2u^{91} + u^{90} + \cdots + 6u^2 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^{14} - 3u^{12} - 6u^{10} - 9u^8 - 8u^6 - 6u^4 - 2u^2 + 1 \\ u^{16} + 2u^{14} + 4u^{12} + 4u^{10} + 2u^8 - 2u^4 - 2u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u^{26} + 5u^{24} + \cdots - u^2 + 1 \\ -u^{28} - 4u^{26} + \cdots + 10u^6 + 3u^4 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^{91} + u^{90} + \cdots + u^2 - 1 \\ u^{91} + u^{90} + \cdots + 4u^2 + 2u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{91} - 2u^{90} + \cdots + 4u - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{92} + 30u^{91} + \cdots - 15u + 1$
c_2, c_6	$u^{92} - 2u^{91} + \cdots - 3u - 1$
c_3	$u^{92} - 2u^{91} + \cdots - 19073u - 4777$
c_4, c_{10}	$u^{92} - u^{91} + \cdots + 512u + 512$
c_7	$u^{92} + 10u^{91} + \cdots - 2595u - 175$
c_8, c_9, c_{11}	$u^{92} - 10u^{91} + \cdots + 9u - 1$
c_{12}	$u^{92} + 6u^{91} + \cdots + 93765u + 53361$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{92} + 66y^{91} + \cdots - 223y + 1$
c_2, c_6	$y^{92} + 30y^{91} + \cdots - 15y + 1$
c_3	$y^{92} - 18y^{91} + \cdots - 956098667y + 22819729$
c_4, c_{10}	$y^{92} - 57y^{91} + \cdots - 1835008y + 262144$
c_7	$y^{92} + 6y^{91} + \cdots + 948825y + 30625$
c_8, c_9, c_{11}	$y^{92} - 90y^{91} + \cdots - 3y + 1$
c_{12}	$y^{92} + 42y^{91} + \cdots - 115995084723y + 2847396321$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.238579 + 0.976043I$ $a = 0.192909 - 0.693401I$ $b = -0.304491 - 0.860553I$	$-5.41288 - 2.84467I$	0
$u = -0.238579 - 0.976043I$ $a = 0.192909 + 0.693401I$ $b = -0.304491 + 0.860553I$	$-5.41288 + 2.84467I$	0
$u = -0.131476 + 0.996623I$ $a = 0.210814 + 0.343582I$ $b = 0.521220 + 0.022009I$	$-2.04930 - 2.60188I$	0
$u = -0.131476 - 0.996623I$ $a = 0.210814 - 0.343582I$ $b = 0.521220 - 0.022009I$	$-2.04930 + 2.60188I$	0
$u = -0.761512 + 0.636187I$ $a = 0.16026 - 2.38247I$ $b = 1.56743 - 1.52368I$	$-7.42452 - 1.21614I$	0
$u = -0.761512 - 0.636187I$ $a = 0.16026 + 2.38247I$ $b = 1.56743 + 1.52368I$	$-7.42452 + 1.21614I$	0
$u = -0.781538 + 0.684375I$ $a = 0.25605 + 2.82276I$ $b = -1.81816 + 2.53546I$	$0.155477 + 1.294890I$	0
$u = -0.781538 - 0.684375I$ $a = 0.25605 - 2.82276I$ $b = -1.81816 - 2.53546I$	$0.155477 - 1.294890I$	0
$u = 0.098394 + 1.038460I$ $a = 0.07502 + 1.54246I$ $b = 0.567259 - 0.826734I$	$-5.85938 + 1.27529I$	0
$u = 0.098394 - 1.038460I$ $a = 0.07502 - 1.54246I$ $b = 0.567259 + 0.826734I$	$-5.85938 - 1.27529I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.796526 + 0.681227I$		
$a = 1.180110 - 0.586282I$	$-1.36598 - 3.95919I$	0
$b = -0.184618 - 1.380540I$		
$u = 0.796526 - 0.681227I$		
$a = 1.180110 + 0.586282I$	$-1.36598 + 3.95919I$	0
$b = -0.184618 + 1.380540I$		
$u = -0.113967 + 1.047090I$		
$a = -0.317702 - 0.526590I$	$-7.57114 - 3.91705I$	0
$b = -0.972673 + 0.055257I$		
$u = -0.113967 - 1.047090I$		
$a = -0.317702 + 0.526590I$	$-7.57114 + 3.91705I$	0
$b = -0.972673 - 0.055257I$		
$u = 0.128444 + 1.048180I$		
$a = 0.42689 - 1.60839I$	$-5.07389 + 6.38810I$	0
$b = -0.356284 + 0.752529I$		
$u = 0.128444 - 1.048180I$		
$a = 0.42689 + 1.60839I$	$-5.07389 - 6.38810I$	0
$b = -0.356284 - 0.752529I$		
$u = -0.806783 + 0.685584I$		
$a = 0.09380 - 3.06953I$	$1.26879 + 6.37618I$	0
$b = 2.61016 - 2.39283I$		
$u = -0.806783 - 0.685584I$		
$a = 0.09380 + 3.06953I$	$1.26879 - 6.37618I$	0
$b = 2.61016 + 2.39283I$		
$u = -0.743166 + 0.754535I$		
$a = 1.13339 + 1.20352I$	$1.43085 + 0.04969I$	0
$b = 0.73726 + 1.94182I$		
$u = -0.743166 - 0.754535I$		
$a = 1.13339 - 1.20352I$	$1.43085 - 0.04969I$	0
$b = 0.73726 - 1.94182I$		

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.822268 + 0.680379I$ $a = -0.26921 + 3.00155I$ $b = -2.83495 + 2.02876I$	$-4.87607 + 10.56990I$	0
$u = -0.822268 - 0.680379I$ $a = -0.26921 - 3.00155I$ $b = -2.83495 - 2.02876I$	$-4.87607 - 10.56990I$	0
$u = 0.068444 + 1.066700I$ $a = -0.119803 - 1.063560I$ $b = -0.669699 + 0.996000I$	$-13.26790 - 1.71324I$	0
$u = 0.068444 - 1.066700I$ $a = -0.119803 + 1.063560I$ $b = -0.669699 - 0.996000I$	$-13.26790 + 1.71324I$	0
$u = 0.794586 + 0.715154I$ $a = -0.701553 + 0.368801I$ $b = 0.106681 + 0.861927I$	$4.11451 - 2.13885I$	0
$u = 0.794586 - 0.715154I$ $a = -0.701553 - 0.368801I$ $b = 0.106681 - 0.861927I$	$4.11451 + 2.13885I$	0
$u = 0.523406 + 0.932221I$ $a = -2.86628 + 1.08586I$ $b = -1.70161 + 2.54061I$	$-2.88968 - 0.50850I$	0
$u = 0.523406 - 0.932221I$ $a = -2.86628 - 1.08586I$ $b = -1.70161 - 2.54061I$	$-2.88968 + 0.50850I$	0
$u = -0.603531 + 0.883423I$ $a = -0.405753 + 0.377637I$ $b = -0.456391 + 0.312778I$	$0.27502 - 2.36293I$	0
$u = -0.603531 - 0.883423I$ $a = -0.405753 - 0.377637I$ $b = -0.456391 - 0.312778I$	$0.27502 + 2.36293I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.141577 + 1.066640I$		
$a = -0.64547 + 1.36105I$	$-11.4205 + 10.4846I$	0
$b = 0.165043 - 0.846640I$		
$u = 0.141577 - 1.066640I$		
$a = -0.64547 - 1.36105I$	$-11.4205 - 10.4846I$	0
$b = 0.165043 + 0.846640I$		
$u = 0.483733 + 0.961923I$		
$a = 2.62934 - 0.98848I$	$-9.44292 - 4.26740I$	0
$b = 1.77034 - 2.05250I$		
$u = 0.483733 - 0.961923I$		
$a = 2.62934 + 0.98848I$	$-9.44292 + 4.26740I$	0
$b = 1.77034 + 2.05250I$		
$u = 0.041839 + 0.919641I$		
$a = 1.46421 + 0.47733I$	$-3.71389 + 0.94541I$	$-10.08955 + 0.I$
$b = 0.510800 - 0.847804I$		
$u = 0.041839 - 0.919641I$		
$a = 1.46421 - 0.47733I$	$-3.71389 - 0.94541I$	$-10.08955 + 0.I$
$b = 0.510800 + 0.847804I$		
$u = 0.738617 + 0.792436I$		
$a = 0.08397 + 1.76696I$	$0.61740 + 2.17666I$	0
$b = 1.79864 + 0.87393I$		
$u = 0.738617 - 0.792436I$		
$a = 0.08397 - 1.76696I$	$0.61740 - 2.17666I$	0
$b = 1.79864 - 0.87393I$		
$u = 0.780023 + 0.757512I$		
$a = -0.138766 - 1.011260I$	$4.83837 - 0.28034I$	0
$b = -1.111500 - 0.321008I$		
$u = 0.780023 - 0.757512I$		
$a = -0.138766 + 1.011260I$	$4.83837 + 0.28034I$	0
$b = -1.111500 + 0.321008I$		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.545981 + 0.946335I$		
$a = 0.786190 - 0.801145I$	$-5.14496 - 1.95841I$	0
$b = 0.983452 - 0.814754I$		
$u = -0.545981 - 0.946335I$		
$a = 0.786190 + 0.801145I$	$-5.14496 + 1.95841I$	0
$b = 0.983452 + 0.814754I$		
$u = 0.819340 + 0.747466I$		
$a = 0.811111 + 0.583349I$	$1.33460 - 1.79462I$	0
$b = 0.969514 - 0.641469I$		
$u = 0.819340 - 0.747466I$		
$a = 0.811111 - 0.583349I$	$1.33460 + 1.79462I$	0
$b = 0.969514 + 0.641469I$		
$u = 0.569272 + 0.952059I$		
$a = 3.05755 - 0.71634I$	$-3.18636 + 4.50271I$	0
$b = 2.21583 - 2.69381I$		
$u = 0.569272 - 0.952059I$		
$a = 3.05755 + 0.71634I$	$-3.18636 - 4.50271I$	0
$b = 2.21583 + 2.69381I$		
$u = -0.765440 + 0.803103I$		
$a = -0.818029 - 0.295898I$	$3.29801 - 4.00356I$	0
$b = -1.30883 - 0.73438I$		
$u = -0.765440 - 0.803103I$		
$a = -0.818029 + 0.295898I$	$3.29801 + 4.00356I$	0
$b = -1.30883 + 0.73438I$		
$u = -0.133642 + 0.866499I$		
$a = -0.704930 + 0.358994I$	$-0.97407 - 1.60778I$	$-2.42278 + 5.49433I$
$b = -0.183847 + 0.660585I$		
$u = -0.133642 - 0.866499I$		
$a = -0.704930 - 0.358994I$	$-0.97407 + 1.60778I$	$-2.42278 - 5.49433I$
$b = -0.183847 - 0.660585I$		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.788650 + 0.825251I$ $a = 0.429590 - 0.032526I$ $b = 1.320190 + 0.022577I$	$-2.36074 - 7.57914I$	0
$u = -0.788650 - 0.825251I$ $a = 0.429590 + 0.032526I$ $b = 1.320190 - 0.022577I$	$-2.36074 + 7.57914I$	0
$u = 0.580403 + 0.990368I$ $a = -2.76821 + 0.58596I$ $b = -2.31851 + 2.48526I$	$-10.22640 + 7.87203I$	0
$u = 0.580403 - 0.990368I$ $a = -2.76821 - 0.58596I$ $b = -2.31851 - 2.48526I$	$-10.22640 - 7.87203I$	0
$u = 0.704163 + 0.934133I$ $a = 1.48699 + 1.28974I$ $b = 2.52056 - 0.39514I$	$0.17844 + 3.32501I$	0
$u = 0.704163 - 0.934133I$ $a = 1.48699 - 1.28974I$ $b = 2.52056 + 0.39514I$	$0.17844 - 3.32501I$	0
$u = -0.729358 + 0.927928I$ $a = 0.48537 + 1.40074I$ $b = -0.176884 + 1.006650I$	$2.91207 - 1.65574I$	0
$u = -0.729358 - 0.927928I$ $a = 0.48537 - 1.40074I$ $b = -0.176884 - 1.006650I$	$2.91207 + 1.65574I$	0
$u = -0.705139 + 0.959518I$ $a = -1.85262 - 1.43236I$ $b = -0.85947 - 1.99272I$	$0.80377 - 5.57265I$	0
$u = -0.705139 - 0.959518I$ $a = -1.85262 + 1.43236I$ $b = -0.85947 + 1.99272I$	$0.80377 + 5.57265I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.759357 + 0.917611I$		
$a = 0.154740 - 1.175150I$	$-2.64654 + 1.75870I$	0
$b = 0.453810 - 0.286093I$		
$u = -0.759357 - 0.917611I$		
$a = 0.154740 + 1.175150I$	$-2.64654 - 1.75870I$	0
$b = 0.453810 + 0.286093I$		
$u = 0.727371 + 0.965715I$		
$a = -0.751407 - 0.816273I$	$4.20110 + 5.97753I$	0
$b = -1.54104 + 0.06209I$		
$u = 0.727371 - 0.965715I$		
$a = -0.751407 + 0.816273I$	$4.20110 - 5.97753I$	0
$b = -1.54104 - 0.06209I$		
$u = -0.685625 + 1.015050I$		
$a = 2.70888 - 0.73049I$	$-8.54521 - 4.28248I$	0
$b = 3.23800 + 0.79506I$		
$u = -0.685625 - 1.015050I$		
$a = 2.70888 + 0.73049I$	$-8.54521 + 4.28248I$	0
$b = 3.23800 - 0.79506I$		
$u = -0.707286 + 1.005200I$		
$a = -3.58502 + 0.61898I$	$-0.81196 - 6.92992I$	0
$b = -3.77645 - 1.63082I$		
$u = -0.707286 - 1.005200I$		
$a = -3.58502 - 0.61898I$	$-0.81196 + 6.92992I$	0
$b = -3.77645 + 1.63082I$		
$u = 0.722334 + 0.994639I$		
$a = 0.737532 - 0.314068I$	$3.26407 + 7.86054I$	0
$b = 0.384875 - 1.089600I$		
$u = 0.722334 - 0.994639I$		
$a = 0.737532 + 0.314068I$	$3.26407 - 7.86054I$	0
$b = 0.384875 + 1.089600I$		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.712416 + 1.010960I$ $a = -1.204580 + 0.587426I$ $b = -0.61714 + 1.85907I$	$-2.36288 + 9.65056I$	0
$u = 0.712416 - 1.010960I$ $a = -1.204580 - 0.587426I$ $b = -0.61714 - 1.85907I$	$-2.36288 - 9.65056I$	0
$u = 0.747422 + 0.985363I$ $a = -0.024978 + 1.031910I$ $b = 1.13289 + 0.99412I$	$0.60476 + 7.66863I$	0
$u = 0.747422 - 0.985363I$ $a = -0.024978 - 1.031910I$ $b = 1.13289 - 0.99412I$	$0.60476 - 7.66863I$	0
$u = -0.718187 + 1.012530I$ $a = 3.69458 - 1.31136I$ $b = 4.36717 + 1.27660I$	$0.27703 - 12.11510I$	0
$u = -0.718187 - 1.012530I$ $a = 3.69458 + 1.31136I$ $b = 4.36717 - 1.27660I$	$0.27703 + 12.11510I$	0
$u = -0.722974 + 1.020340I$ $a = -3.42871 + 1.57766I$ $b = -4.41694 - 0.95821I$	$-5.9102 - 16.3665I$	0
$u = -0.722974 - 1.020340I$ $a = -3.42871 - 1.57766I$ $b = -4.41694 + 0.95821I$	$-5.9102 + 16.3665I$	0
$u = 0.609690 + 0.383304I$ $a = 1.39793 - 1.53881I$ $b = -0.79199 - 1.39508I$	$-8.70626 - 3.35319I$	$-6.31043 + 0.88458I$
$u = 0.609690 - 0.383304I$ $a = 1.39793 + 1.53881I$ $b = -0.79199 + 1.39508I$	$-8.70626 + 3.35319I$	$-6.31043 - 0.88458I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.642810 + 0.198730I$		
$a = -0.90695 + 1.72665I$	$-7.33603 + 8.13323I$	$-4.06363 - 5.79146I$
$b = 0.82727 + 1.31383I$		
$u = 0.642810 - 0.198730I$		
$a = -0.90695 - 1.72665I$	$-7.33603 - 8.13323I$	$-4.06363 + 5.79146I$
$b = 0.82727 - 1.31383I$		
$u = -0.628906$		
$a = 1.21805$	-2.33416	-3.59530
$b = 0.115016$		
$u = 0.586802 + 0.202280I$		
$a = 0.91801 - 1.51754I$	$-1.11584 + 4.25818I$	$-1.35985 - 6.31874I$
$b = -0.88316 - 1.33256I$		
$u = 0.586802 - 0.202280I$		
$a = 0.91801 + 1.51754I$	$-1.11584 - 4.25818I$	$-1.35985 + 6.31874I$
$b = -0.88316 + 1.33256I$		
$u = -0.560782 + 0.239213I$		
$a = 1.05446 - 1.13653I$	$-3.54932 - 1.95688I$	$-3.33049 + 3.24146I$
$b = 0.336700 - 0.124705I$		
$u = -0.560782 - 0.239213I$		
$a = 1.05446 + 1.13653I$	$-3.54932 + 1.95688I$	$-3.33049 - 3.24146I$
$b = 0.336700 + 0.124705I$		
$u = 0.505945 + 0.290277I$		
$a = -1.21465 + 1.33169I$	$-1.83395 - 0.43175I$	$-4.17282 - 0.00864I$
$b = 0.81248 + 1.21732I$		
$u = 0.505945 - 0.290277I$		
$a = -1.21465 - 1.33169I$	$-1.83395 + 0.43175I$	$-4.17282 + 0.00864I$
$b = 0.81248 - 1.21732I$		
$u = -0.514009 + 0.086156I$		
$a = -0.670765 + 0.702252I$	$1.31136 - 0.58307I$	$6.08435 + 1.47406I$
$b = -0.126844 + 0.092730I$		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.514009 - 0.086156I$ $a = -0.670765 - 0.702252I$ $b = -0.126844 - 0.092730I$	$1.31136 + 0.58307I$	$6.08435 - 1.47406I$
$u = 0.260294$ $a = -1.68667$ $b = 0.872774$	-1.21528	-9.67220

II. $I_2^u = \langle u^8 - u^7 + u^6 - u^5 + u^4 - u^3 + b - u, \; -u^6 - u^4 - u^2 + a - u, \; u^9 -$
$u^8 + 2u^7 - u^6 + 3u^5 - u^4 + 2u^3 + u + 1 \rangle$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^2 + 1 \\ -u^4 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^7 + 2u^5 + 2u^3 + 2u \\ -u^8 + u^7 - u^6 + 2u^5 - u^4 + 2u^3 + 2u + 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^3 \\ u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^6 + u^4 + u^2 + u \\ -u^8 + u^7 - u^6 + u^5 - u^4 + u^3 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^6 + u^4 + u^2 + u \\ -u^8 + u^7 - u^6 + u^5 - u^4 + u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^3 \\ u^3 + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -u^7 - 2u^5 - 2u^3 - 2u \\ u^8 - u^7 + u^6 - 2u^5 + u^4 - 2u^3 - 2u - 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^7 + u^6 + 2u^5 + u^4 + 2u^3 + u^2 + 3u \\ -2u^8 + 2u^7 - 2u^6 + 3u^5 - 2u^4 + 3u^3 + 3u + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^7 + 4u^6 - 5u^5 + 5u^4 - 10u^3 + 5u^2 - u - 1$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^9 - 3u^8 + 8u^7 - 13u^6 + 17u^5 - 17u^4 + 12u^3 - 6u^2 + u + 1$
c_2	$u^9 - u^8 + 2u^7 - u^6 + 3u^5 - u^4 + 2u^3 + u + 1$
c_3, c_{12}	$u^9 - u^8 - 2u^7 + 3u^6 + u^5 - 3u^4 + 2u^3 - u + 1$
c_4, c_{10}	u^9
c_6	$u^9 + u^8 + 2u^7 + u^6 + 3u^5 + u^4 + 2u^3 + u - 1$
c_7	$u^9 - 5u^8 + 12u^7 - 15u^6 + 9u^5 + u^4 - 4u^3 + 2u^2 + u - 1$
c_8, c_9	$(u - 1)^9$
c_{11}	$(u + 1)^9$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1$
c_2, c_6	$y^9 + 3y^8 + 8y^7 + 13y^6 + 17y^5 + 17y^4 + 12y^3 + 6y^2 + y - 1$
c_3, c_{12}	$y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1$
c_4, c_{10}	y^9
c_7	$y^9 - y^8 + 12y^7 - 7y^6 + 37y^5 + y^4 - 10y^2 + 5y - 1$
c_8, c_9, c_{11}	$(y - 1)^9$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.140343 + 0.966856I$ $a = -0.855828 + 0.530357I$ $b = -0.154190 - 0.257272I$	$-3.42837 - 2.09337I$	$-7.72019 + 4.44592I$
$u = -0.140343 - 0.966856I$ $a = -0.855828 - 0.530357I$ $b = -0.154190 + 0.257272I$	$-3.42837 + 2.09337I$	$-7.72019 - 4.44592I$
$u = -0.628449 + 0.875112I$ $a = -0.77654 + 1.46791I$ $b = -1.76111 + 0.42995I$	$-1.02799 - 2.45442I$	$-7.83797 + 2.47153I$
$u = -0.628449 - 0.875112I$ $a = -0.77654 - 1.46791I$ $b = -1.76111 - 0.42995I$	$-1.02799 + 2.45442I$	$-7.83797 - 2.47153I$
$u = 0.796005 + 0.733148I$ $a = -0.852888 + 0.566992I$ $b = -0.430151 + 1.332530I$	$2.72642 - 1.33617I$	$1.031098 + 0.174453I$
$u = 0.796005 - 0.733148I$ $a = -0.852888 - 0.566992I$ $b = -0.430151 - 1.332530I$	$2.72642 + 1.33617I$	$1.031098 - 0.174453I$
$u = 0.728966 + 0.986295I$ $a = 1.06667 - 0.97795I$ $b = 0.23704 - 1.46509I$	$1.95319 + 7.08493I$	$-0.87316 - 5.18429I$
$u = 0.728966 - 0.986295I$ $a = 1.06667 + 0.97795I$ $b = 0.23704 + 1.46509I$	$1.95319 - 7.08493I$	$-0.87316 + 5.18429I$
$u = -0.512358$ $a = -0.162845$ $b = -0.783184$	-0.446489	2.80040

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_5	$(u^9 - 3u^8 + 8u^7 - 13u^6 + 17u^5 - 17u^4 + 12u^3 - 6u^2 + u + 1)$ $\cdot (u^{92} + 30u^{91} + \cdots - 15u + 1)$
c_2	$(u^9 - u^8 + \cdots + u + 1)(u^{92} - 2u^{91} + \cdots - 3u - 1)$
c_3	$(u^9 - u^8 - 2u^7 + 3u^6 + u^5 - 3u^4 + 2u^3 - u + 1)$ $\cdot (u^{92} - 2u^{91} + \cdots - 19073u - 4777)$
c_4, c_{10}	$u^9(u^{92} - u^{91} + \cdots + 512u + 512)$
c_6	$(u^9 + u^8 + \cdots + u - 1)(u^{92} - 2u^{91} + \cdots - 3u - 1)$
c_7	$(u^9 - 5u^8 + 12u^7 - 15u^6 + 9u^5 + u^4 - 4u^3 + 2u^2 + u - 1)$ $\cdot (u^{92} + 10u^{91} + \cdots - 2595u - 175)$
c_8, c_9	$((u - 1)^9)(u^{92} - 10u^{91} + \cdots + 9u - 1)$
c_{11}	$((u + 1)^9)(u^{92} - 10u^{91} + \cdots + 9u - 1)$
c_{12}	$(u^9 - u^8 - 2u^7 + 3u^6 + u^5 - 3u^4 + 2u^3 - u + 1)$ $\cdot (u^{92} + 6u^{91} + \cdots + 93765u + 53361)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$(y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1)$ $\cdot (y^{92} + 66y^{91} + \cdots - 223y + 1)$
c_2, c_6	$(y^9 + 3y^8 + 8y^7 + 13y^6 + 17y^5 + 17y^4 + 12y^3 + 6y^2 + y - 1)$ $\cdot (y^{92} + 30y^{91} + \cdots - 15y + 1)$
c_3	$(y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1)$ $\cdot (y^{92} - 18y^{91} + \cdots - 956098667y + 22819729)$
c_4, c_{10}	$y^9(y^{92} - 57y^{91} + \cdots - 1835008y + 262144)$
c_7	$(y^9 - y^8 + 12y^7 - 7y^6 + 37y^5 + y^4 - 10y^2 + 5y - 1)$ $\cdot (y^{92} + 6y^{91} + \cdots + 948825y + 30625)$
c_8, c_9, c_{11}	$((y-1)^9)(y^{92} - 90y^{91} + \cdots - 3y + 1)$
c_{12}	$(y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1)$ $\cdot (y^{92} + 42y^{91} + \cdots - 115995084723y + 2847396321)$