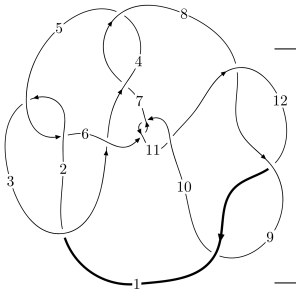
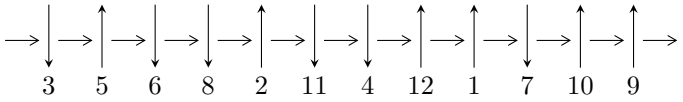
$12a_{0008}$ $(K12a_{0008})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & -3.82254 \times 10^{339} u^{104} - 5.03783 \times 10^{339} u^{103} + \cdots + 5.84724 \times 10^{339} b - 5.55902 \times 10^{342}, \\ & 1.82294 \times 10^{340} u^{104} + 2.22909 \times 10^{340} u^{103} + \cdots + 2.33889 \times 10^{340} a + 2.44212 \times 10^{343}, \\ & u^{105} + 2u^{104} + \cdots + 2048u + 1024 \rangle \\ I_2^u = \langle & b,\ -u^4 + 2u^3 + u^2 + a - 3u,\ u^5 - u^4 - 2u^3 + u^2 + u + 1 \rangle \end{aligned}$$

$$\begin{aligned} I_1^v = \langle & a,\ -152v^9 + 36v^8 - 216v^7 + 881v^6 - 468v^5 + 684v^4 - 1376v^3 + 252v^2 + 115b - 144v + 219, \\ & v^{10} - v^9 + 2v^8 - 7v^7 + 8v^6 - 9v^5 + 14v^4 - 10v^3 + 5v^2 - 3v + 1 \rangle \end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 120 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. $\boldsymbol{I_1^u = \langle -3.82 \times 10^{339} u^{104} - 5.04 \times 10^{339} u^{103} + \cdots + 5.85 \times 10^{339} b - 5.56 \times 10^{342},\ 1.82 \times 10^{340} u^{104} + 2.23 \times 10^{340} u^{103} + \cdots + 2.34 \times 10^{340} a + 2.44 \times 10^{343},\ u^{105} + 2u^{104} + \cdots + 2048u + 1024 \rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} -0.779404u^{104} - 0.953053u^{103} + \cdots - 752.424u - 1044.13 \\ 0.653735u^{104} + 0.861575u^{103} + \cdots + 591.500u + 950.710 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1.76035u^{104} + 1.98543u^{103} + \cdots + 1749.68u + 2063.65 \\ -0.847121u^{104} - 1.09653u^{103} + \cdots - 781.787u - 1191.48 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.959231u^{104} + 1.22999u^{103} + \cdots + 905.222u + 1333.17 \\ -1.35472u^{104} - 1.62405u^{103} + \cdots - 1278.29u - 1734.35 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1.51533u^{104} + 1.88583u^{103} + \cdots + 1422.48u + 2030.46 \\ -1.52651u^{104} - 1.83959u^{103} + \cdots - 1430.38u - 1964.33 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.913226u^{104} - 0.888902u^{103} + \cdots - 967.888u - 872.162 \\ -1.79713u^{104} - 2.06159u^{103} + \cdots - 1766.75u - 2151.53 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.125669u^{104} - 0.0914777u^{103} + \cdots - 160.924u - 93.4241 \\ 0.653735u^{104} + 0.861575u^{103} + \cdots + 591.500u + 950.710 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -1.50997u^{104} - 1.64956u^{103} + \cdots - 1556.56u - 1732.04 \\ -0.184220u^{104} - 0.158133u^{103} + \cdots - 191.728u - 159.602 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.561315u^{104} - 0.724978u^{103} + \cdots - 476.369u - 771.780 \\ 1.00686u^{104} + 1.15100u^{103} + \cdots + 1010.56u + 1206.98 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -1.68427u^{104} - 1.92328u^{103} + \cdots - 1794.45u - 2081.91$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{105} + 53u^{104} + \cdots - 7u - 1$
c_2, c_5	$u^{105} + 7u^{104} + \cdots + 7u + 1$
c_3	$u^{105} - 7u^{104} + \cdots + 40669u + 23377$
c_4, c_7	$u^{105} + 2u^{104} + \cdots + 2048u + 1024$
c_6, c_{10}	$u^{105} + 3u^{104} + \cdots + 96u + 32$
c_8, c_9, c_{12}	$u^{105} + 8u^{104} + \cdots + 2u + 1$
c_{11}	$u^{105} - 39u^{104} + \cdots - 14848u + 1024$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{105} + 5y^{104} + \cdots - 47y - 1$
c_2, c_5	$y^{105} + 53y^{104} + \cdots - 7y - 1$
c_3	$y^{105} - 43y^{104} + \cdots + 5130220969y - 546484129$
c_4, c_7	$y^{105} - 60y^{104} + \cdots + 25165824y - 1048576$
c_6, c_{10}	$y^{105} + 39y^{104} + \cdots - 14848y - 1024$
c_8, c_9, c_{12}	$y^{105} - 90y^{104} + \cdots - 206y - 1$
c_{11}	$y^{105} + 47y^{104} + \cdots - 210108416y - 1048576$

(vi) Complex Volumes and Cusp Shapes

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.966623+0.262000I$		
$a=$	$1.84206-0.44039I$	$-0.62620-5.04939I$	0
$b=$	$0.613331+0.897632I$		
$u=$	$0.966623-0.262000I$		
$a=$	$1.84206+0.44039I$	$-0.62620+5.04939I$	0
$b=$	$0.613331-0.897632I$		
$u=$	$-0.994592+0.126675I$		
$a=$	$-0.11789+1.79257I$	$-1.41343+1.12338I$	0
$b=$	$-0.244604-1.112200I$		
$u=$	$-0.994592-0.126675I$		
$a=$	$-0.11789-1.79257I$	$-1.41343-1.12338I$	0
$b=$	$-0.244604+1.112200I$		
$u=$	$-0.156135+0.971665I$		
$a=$	$0.04677-1.83355I$	$0.09747-2.29231I$	0
$b=$	$0.595883+0.703683I$		
$u=$	$-0.156135-0.971665I$		
$a=$	$0.04677+1.83355I$	$0.09747+2.29231I$	0
$b=$	$0.595883-0.703683I$		
$u=$	$0.996817+0.231114I$		
$a=$	$-0.119338-0.216906I$	$0.82031-3.49410I$	0
$b=$	$1.148970+0.105590I$		
$u=$	$0.996817-0.231114I$		
$a=$	$-0.119338+0.216906I$	$0.82031+3.49410I$	0
$b=$	$1.148970-0.105590I$		
$u=$	$0.830770+0.624559I$		
$a=$	$0.50740-1.47941I$	$8.20664-3.74731I$	0
$b=$	$0.195587+1.292660I$		
$u=$	$0.830770-0.624559I$		
$a=$	$0.50740+1.47941I$	$8.20664+3.74731I$	0
$b=$	$0.195587-1.292660I$		

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.06842$ $a=-0.124114$ $b=-0.549124$	-1.78436	0
$u=0.289155+1.029210I$ $a=0.010911-1.335340I$ $b=0.859812+0.584753I$	$0.42759+4.73730I$	0
$u=0.289155-1.029210I$ $a=0.010911+1.335340I$ $b=0.859812-0.584753I$	$0.42759-4.73730I$	0
$u=-0.765537+0.753961I$ $a=1.22243+0.93816I$ $b=-0.075655-1.140690I$	$6.95108-3.58416I$	0
$u=-0.765537-0.753961I$ $a=1.22243-0.93816I$ $b=-0.075655+1.140690I$	$6.95108+3.58416I$	0
$u=0.298691+1.037650I$ $a=-0.200218+1.183490I$ $b=0.621372-1.078950I$	$4.62024+5.96188I$	0
$u=0.298691-1.037650I$ $a=-0.200218-1.183490I$ $b=0.621372+1.078950I$	$4.62024-5.96188I$	0
$u=-0.915190+0.048307I$ $a=1.57055-0.49914I$ $b=0.606566-0.808414I$	$-0.915909-0.241093I$	0
$u=-0.915190-0.048307I$ $a=1.57055+0.49914I$ $b=0.606566+0.808414I$	$-0.915909+0.241093I$	0
$u=-0.951368+0.522622I$ $a=0.38217+1.61581I$ $b=0.252648-1.368440I$	$6.29716+8.47800I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.951368-0.522622I$ $a=\ \ 0.38217-1.61581I$ $b=\ \ 0.252648+1.368440I$	$6.29716-8.47800I$	0
$u=\ \ 0.771518+0.768489I$ $a=\ \ 0.94253-1.18145I$ $b=\ \ 0.017151+1.183720I$	$8.47050-1.50689I$	0
$u=\ \ 0.771518-0.768489I$ $a=\ \ 0.94253+1.18145I$ $b=\ \ 0.017151-1.183720I$	$8.47050+1.50689I$	0
$u=-1.075900+0.190627I$ $a=-1.365470+0.159370I$ $b=-0.603761+1.042000I$	$3.68939+3.33964I$	0
$u=-1.075900-0.190627I$ $a=-1.365470-0.159370I$ $b=-0.603761-1.042000I$	$3.68939-3.33964I$	0
$u=-0.651392+0.879936I$ $a=\ \ 0.393010+0.894053I$ $b=\ \ 0.194470-0.994625I$	$3.44940+2.87203I$	0
$u=-0.651392-0.879936I$ $a=\ \ 0.393010-0.894053I$ $b=\ \ 0.194470+0.994625I$	$3.44940-2.87203I$	0
$u=-1.050100+0.314666I$ $a=-0.22948-1.92157I$ $b=-0.037303+1.113740I$	$-0.96727+5.99715I$	0
$u=-1.050100-0.314666I$ $a=-0.22948+1.92157I$ $b=-0.037303-1.113740I$	$-0.96727-5.99715I$	0
$u=-0.835876+0.304185I$ $a=-1.05229-1.03238I$ $b=-0.825475-0.471650I$	$2.39540+3.43521I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.835876-0.304185I$ $a=-1.05229+1.03238I$ $b=-0.825475+0.471650I$	$2.39540-3.43521I$	0
$u=0.082150+1.110590I$ $a=0.169904+1.176230I$ $b=-0.700136-0.769483I$	$-3.28334+1.14216I$	0
$u=0.082150-1.110590I$ $a=0.169904-1.176230I$ $b=-0.700136+0.769483I$	$-3.28334-1.14216I$	0
$u=0.208245+0.860687I$ $a=0.059506-1.353310I$ $b=-0.575289+0.870092I$	$-0.20460+2.27131I$	0
$u=0.208245-0.860687I$ $a=0.059506+1.353310I$ $b=-0.575289-0.870092I$	$-0.20460-2.27131I$	0
$u=1.096560+0.354630I$ $a=-1.50864+0.44399I$ $b=-0.649802-1.079910I$	$4.17470-8.90495I$	0
$u=1.096560-0.354630I$ $a=-1.50864-0.44399I$ $b=-0.649802+1.079910I$	$4.17470+8.90495I$	0
$u=0.771031+0.344389I$ $a=-0.34801+1.88152I$ $b=-0.033449-0.956974I$	$1.31907-1.85367I$	0
$u=0.771031-0.344389I$ $a=-0.34801-1.88152I$ $b=-0.033449+0.956974I$	$1.31907+1.85367I$	0
$u=-0.303689+1.129670I$ $a=0.198606+1.374610I$ $b=-0.673059-0.926013I$	$-2.80313-6.42495I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.303689-1.129670I$ $a=\ \ 0.198606-1.374610I$ $b=-0.673059+0.926013I$	$-2.80313+6.42495I$	0
$u=-0.323418+0.718994I$ $a=\ \ 0.351226+1.099770I$ $b=\ \ 0.817506-0.395832I$	$2.66939-0.70616I$	$3.86014+0.I$
$u=-0.323418-0.718994I$ $a=\ \ 0.351226-1.099770I$ $b=\ \ 0.817506+0.395832I$	$2.66939+0.70616I$	$3.86014+0.I$
$u=-0.783043+0.032782I$ $a=\ \ 0.05152-1.49817I$ $b=\ \ 0.456650+1.312500I$	$5.03761-2.14522I$	$-2.62234-0.68124I$
$u=-0.783043-0.032782I$ $a=\ \ 0.05152+1.49817I$ $b=\ \ 0.456650-1.312500I$	$5.03761+2.14522I$	$-2.62234+0.68124I$
$u=-0.069329+1.225860I$ $a=-0.207633-1.035880I$ $b=\ \ 0.608931+0.965031I$	$0.91219-2.50907I$	0
$u=-0.069329-1.225860I$ $a=-0.207633+1.035880I$ $b=\ \ 0.608931-0.965031I$	$0.91219+2.50907I$	0
$u=\ \ 1.170060+0.463549I$ $a=-1.10322+1.53284I$ $b=-0.553441-0.934425I$	$-0.62425-2.83456I$	0
$u=\ \ 1.170060-0.463549I$ $a=-1.10322-1.53284I$ $b=-0.553441+0.934425I$	$-0.62425+2.83456I$	0
$u=-0.476116+0.565252I$ $a=-0.304758-0.867417I$ $b=-0.445573+0.493036I$	$-0.87676+1.33458I$	$-5.87002-4.06416I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.476116-0.565252I$ $a=-0.304758+0.867417I$ $b=-0.445573-0.493036I$	$-0.87676-1.33458I$	$-5.87002+4.06416I$
$u=\ \ 0.454580+0.569119I$ $a=-0.43556+2.37608I$ $b=\ \ 0.170218-0.693124I$	$1.83393-1.25356I$	$7.30757+1.79196I$
$u=\ \ 0.454580-0.569119I$ $a=-0.43556-2.37608I$ $b=\ \ 0.170218+0.693124I$	$1.83393+1.25356I$	$7.30757-1.79196I$
$u=-0.408160+1.210580I$ $a=-0.294514-1.182610I$ $b=\ \ 0.694328+1.069540I$	$1.90832-10.51360I$	0
$u=-0.408160-1.210580I$ $a=-0.294514+1.182610I$ $b=\ \ 0.694328-1.069540I$	$1.90832+10.51360I$	0
$u=-0.608380+0.375672I$ $a=\ \ 0.257068+0.458626I$ $b=\ \ 0.964533-0.182230I$	$2.88842-0.29217I$	$2.82331-1.55863I$
$u=-0.608380-0.375672I$ $a=\ \ 0.257068-0.458626I$ $b=\ \ 0.964533+0.182230I$	$2.88842+0.29217I$	$2.82331+1.55863I$
$u=-1.190280+0.531474I$ $a=-0.038155-0.170848I$ $b=-1.015260-0.612676I$	$-0.03711+5.60715I$	0
$u=-1.190280-0.531474I$ $a=-0.038155+0.170848I$ $b=-1.015260+0.612676I$	$-0.03711-5.60715I$	0
$u=\ \ 1.296260+0.215123I$ $a=\ \ 0.0286880+0.1014560I$ $b=-0.625259-0.034743I$	$-5.00588-4.15826I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.296260 - 0.215123I$ $a = 0.0286880 - 0.1014560I$ $b = -0.625259 + 0.034743I$	$-5.00588 + 4.15826I$	0
$u = 0.540659 + 0.417528I$ $a = -0.08495 - 1.56537I$ $b = -0.396115 + 0.965766I$	$0.46462 + 2.21286I$	$0.18906 - 1.66288I$
$u = 0.540659 - 0.417528I$ $a = -0.08495 + 1.56537I$ $b = -0.396115 - 0.965766I$	$0.46462 - 2.21286I$	$0.18906 + 1.66288I$
$u = -1.262590 + 0.406275I$ $a = 0.043597 + 0.144135I$ $b = 0.808161 + 0.651447I$	$-4.49634 + 1.94814I$	0
$u = -1.262590 - 0.406275I$ $a = 0.043597 - 0.144135I$ $b = 0.808161 - 0.651447I$	$-4.49634 - 1.94814I$	0
$u = 0.501894 + 0.449298I$ $a = -0.061381 + 1.371720I$ $b = 0.532459 - 1.225220I$	$6.13895 + 5.63139I$	$4.44596 + 0.50184I$
$u = 0.501894 - 0.449298I$ $a = -0.061381 - 1.371720I$ $b = 0.532459 + 1.225220I$	$6.13895 - 5.63139I$	$4.44596 - 0.50184I$
$u = 0.538287 + 0.382734I$ $a = -2.47342 + 2.53276I$ $b = -0.174232 - 0.605006I$	$1.79965 - 1.45383I$	$6.85530 + 8.54654I$
$u = 0.538287 - 0.382734I$ $a = -2.47342 - 2.53276I$ $b = -0.174232 + 0.605006I$	$1.79965 + 1.45383I$	$6.85530 - 8.54654I$
$u = 0.650695 + 0.088990I$ $a = -3.07569 + 1.05876I$ $b = -0.634565 + 0.388641I$	$2.01640 + 1.51491I$	$-4.95811 - 2.51475I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.650695 - 0.088990I$ $a = -3.07569 - 1.05876I$ $b = -0.634565 - 0.388641I$	$2.01640 - 1.51491I$	$-4.95811 + 2.51475I$
$u = -1.315550 + 0.292996I$ $a = -0.87266 - 1.20760I$ $b = -0.680138 + 0.916140I$	$-5.04079 - 0.55525I$	0
$u = -1.315550 - 0.292996I$ $a = -0.87266 + 1.20760I$ $b = -0.680138 - 0.916140I$	$-5.04079 + 0.55525I$	0
$u = 1.241410 + 0.559646I$ $a = 1.06522 - 1.30685I$ $b = 0.693688 + 1.030650I$	$-3.33108 - 7.60318I$	0
$u = 1.241410 - 0.559646I$ $a = 1.06522 + 1.30685I$ $b = 0.693688 - 1.030650I$	$-3.33108 + 7.60318I$	0
$u = 1.313810 + 0.373086I$ $a = -0.235478 - 0.167465I$ $b = -0.969130 + 0.703808I$	$-4.67411 - 2.30128I$	0
$u = 1.313810 - 0.373086I$ $a = -0.235478 + 0.167465I$ $b = -0.969130 - 0.703808I$	$-4.67411 + 2.30128I$	0
$u = -0.406323 + 0.472980I$ $a = -2.61611 - 2.10864I$ $b = 0.043443 + 0.684550I$	$0.98116 - 2.85208I$	$4.87688 + 0.20930I$
$u = -0.406323 - 0.472980I$ $a = -2.61611 + 2.10864I$ $b = 0.043443 - 0.684550I$	$0.98116 + 2.85208I$	$4.87688 - 0.20930I$
$u = -1.266110 + 0.561926I$ $a = -0.90672 - 1.64848I$ $b = -0.563296 + 1.011730I$	$-3.30268 + 7.81911I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.266110-0.561926I$ $a=-0.90672+1.64848I$ $b=-0.563296-1.011730I$	$-3.30268-7.81911I$	0
$u=1.268350+0.617290I$ $a=0.147260+0.059650I$ $b=-1.069350+0.631867I$	$-2.66171-10.71770I$	0
$u=1.268350-0.617290I$ $a=0.147260-0.059650I$ $b=-1.069350-0.631867I$	$-2.66171+10.71770I$	0
$u=1.26411+0.64010I$ $a=-0.98809+1.20593I$ $b=-0.756688-1.129680I$	$1.61848-12.04680I$	0
$u=1.26411-0.64010I$ $a=-0.98809-1.20593I$ $b=-0.756688+1.129680I$	$1.61848+12.04680I$	0
$u=-1.39616+0.27043I$ $a=-0.0275538-0.1189400I$ $b=-0.530086-0.789172I$	$-1.12946-1.52913I$	0
$u=-1.39616-0.27043I$ $a=-0.0275538+0.1189400I$ $b=-0.530086+0.789172I$	$-1.12946+1.52913I$	0
$u=-1.37101+0.42124I$ $a=0.833638+1.030930I$ $b=0.753137-0.991259I$	$-8.14449+4.19574I$	0
$u=-1.37101-0.42124I$ $a=0.833638-1.030930I$ $b=0.753137+0.991259I$	$-8.14449-4.19574I$	0
$u=1.41210+0.25259I$ $a=0.182134+0.133509I$ $b=0.846007-0.737444I$	$-8.93146+1.75969I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.41210 - 0.25259I$ $a = 0.182134 - 0.133509I$ $b = 0.846007 + 0.737444I$	$-8.93146 - 1.75969I$	0
$u = -0.226596 + 0.512840I$ $a = -1.195050 + 0.039507I$ $b = 0.239764 + 0.183136I$	$-0.33339 + 1.65387I$	$-2.68049 - 4.66999I$
$u = -0.226596 - 0.512840I$ $a = -1.195050 - 0.039507I$ $b = 0.239764 - 0.183136I$	$-0.33339 - 1.65387I$	$-2.68049 + 4.66999I$
$u = 1.34885 + 0.52625I$ $a = -0.1255900 - 0.0557574I$ $b = 0.864727 - 0.616241I$	$-7.39202 - 6.95911I$	0
$u = 1.34885 - 0.52625I$ $a = -0.1255900 + 0.0557574I$ $b = 0.864727 + 0.616241I$	$-7.39202 + 6.95911I$	0
$u = -1.30284 + 0.65176I$ $a = 0.91312 + 1.44775I$ $b = 0.708405 - 1.069030I$	$-5.9958 + 12.8200I$	0
$u = -1.30284 - 0.65176I$ $a = 0.91312 - 1.44775I$ $b = 0.708405 + 1.069030I$	$-5.9958 - 12.8200I$	0
$u = -1.38919 + 0.53030I$ $a = -0.774216 - 0.940360I$ $b = -0.776331 + 1.071110I$	$-3.48041 + 8.68972I$	0
$u = -1.38919 - 0.53030I$ $a = -0.774216 + 0.940360I$ $b = -0.776331 - 1.071110I$	$-3.48041 - 8.68972I$	0
$u = -1.30301 + 0.72418I$ $a = -0.85428 - 1.34318I$ $b = -0.783365 + 1.149260I$	$-0.9805 + 17.4101I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.30301-0.72418I$ $a=-0.85428+1.34318I$ $b=-0.783365-1.149260I$	$-0.9805-17.4101I$	0
$u=\ \ 1.52631+0.11647I$ $a=-0.144120-0.089973I$ $b=-0.648982+0.791673I$	$-5.42904+5.71768I$	0
$u=\ \ 1.52631-0.11647I$ $a=-0.144120+0.089973I$ $b=-0.648982-0.791673I$	$-5.42904-5.71768I$	0
$u=\ \ 1.49316+0.40751I$ $a=\ \ 0.1032100+0.0283296I$ $b=-0.492837+0.689740I$	$-4.43944-3.45605I$	0
$u=\ \ 1.49316-0.40751I$ $a=\ \ 0.1032100-0.0283296I$ $b=-0.492837-0.689740I$	$-4.43944+3.45605I$	0

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

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} u^4-2u^3-u^2+3u \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^4-u^2-1 \\ u^4-2u^2 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} u^4-2u^3-u^2+3u \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u^4-2u^3-u^2+3u \\ 0 \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2u^4+7u^3+7u^2-13u-6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1$
c_2, c_5	$y^5 + 3y^4 + 4y^3 + y^2 - y - 1$
c_3, c_4, c_7	$y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1$
c_6, c_{10}, c_{11}	y^5
c_8, c_9, c_{12}	$(y-1)^5$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.21774$ $a=\ 0.674363$ $b=\ 0$	-0.756147	3.17260
$u=-0.309916+0.549911I$ $a=-1.29977+2.14694I$ $b=\ 0$	$1.31583+1.53058I$	$-1.50865-9.87103I$
$u=-0.309916-0.549911I$ $a=-1.29977-2.14694I$ $b=\ 0$	$1.31583-1.53058I$	$-1.50865+9.87103I$
$u=\ 1.41878+0.21917I$ $a=\ 0.462589-0.146410I$ $b=\ 0$	$-4.22763-4.40083I$	$0.92237+5.80708I$
$u=\ 1.41878-0.21917I$ $a=\ 0.462589+0.146410I$ $b=\ 0$	$-4.22763+4.40083I$	$0.92237-5.80708I$

III. $\boldsymbol{I_1^v = \langle a,\ -152v^9 + 36v^8 + \cdots + 115b + 219,\ v^{10} - v^9 + \cdots - 3v + 1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0 \\ 1.32174v^9 - 0.313043v^8 + \cdots + 1.25217v - 1.90435 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ 1.35652v^9 - 0.373913v^8 + \cdots + 1.49565v - 0.191304 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.982609v^9 + 0.469565v^8 + \cdots - 2.87826v + 1.35652 \\ -2.35652v^9 + 1.37391v^8 + \cdots - 6.49565v + 3.19130 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.469565v^9 + 0.321739v^8 + \cdots - 2.28696v + 0.373913 \\ -2.35652v^9 + 1.37391v^8 + \cdots - 6.49565v + 3.19130 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -1 \\ -1.35652v^9 + 0.373913v^8 + \cdots - 1.49565v + 0.191304 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1.32174v^9 - 0.313043v^8 + \cdots + 1.25217v - 1.90435 \\ 1.32174v^9 - 0.313043v^8 + \cdots + 1.25217v - 1.90435 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.808696v^9 + 0.165217v^8 + \cdots - 0.660870v + 2.92174 \\ 0.513043v^9 - 0.147826v^8 + \cdots + 0.591304v + 1.01739 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.808696v^9 - 0.165217v^8 + \cdots + 0.660870v - 2.92174 \\ -1.02609v^9 + 0.295652v^8 + \cdots - 1.18261v - 1.03478 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$$= -\frac{281}{115}v^9 + \frac{118}{115}v^8 - \frac{363}{115}v^7 + \frac{1693}{115}v^6 - \frac{959}{115}v^5 + \frac{977}{115}v^4 - \frac{2683}{115}v^3 + \frac{251}{115}v^2 + \frac{793}{115}v + \frac{622}{115}$$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_5	$(y^2+y+1)^5$
c_4, c_7	y^{10}
c_6, c_{10}	$(y^5+3y^4+4y^3+y^2-y-1)^2$
c_8, c_9, c_{12}	$(y^5-5y^4+8y^3-3y^2-y-1)^2$
c_{11}	$(y^5-y^4+8y^3-3y^2+3y-1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 1.219640 + 0.330957I$ $a = 0$ $b = 0.339110 - 0.822375I$	$0.329100 - 0.499304I$	$2.43337 - 0.47576I$
$v = 1.219640 - 0.330957I$ $a = 0$ $b = 0.339110 + 0.822375I$	$0.329100 + 0.499304I$	$2.43337 + 0.47576I$
$v = -0.323203 + 1.221720I$ $a = 0$ $b = 0.339110 + 0.822375I$	$0.32910 - 3.56046I$	$-1.41726 + 7.41465I$
$v = -0.323203 - 1.221720I$ $a = 0$ $b = 0.339110 - 0.822375I$	$0.32910 + 3.56046I$	$-1.41726 - 7.41465I$
$v = 0.575710 + 0.191698I$ $a = 0$ $b = -0.455697 + 1.200150I$	$5.87256 + 2.37095I$	$7.21285 - 1.44195I$
$v = 0.575710 - 0.191698I$ $a = 0$ $b = -0.455697 - 1.200150I$	$5.87256 - 2.37095I$	$7.21285 + 1.44195I$
$v = -0.121840 + 0.594429I$ $a = 0$ $b = -0.455697 - 1.200150I$	$5.87256 - 6.43072I$	$1.90884 + 7.88634I$
$v = -0.121840 - 0.594429I$ $a = 0$ $b = -0.455697 + 1.200150I$	$5.87256 + 6.43072I$	$1.90884 - 7.88634I$
$v = -0.85031 + 1.47278I$ $a = 0$ $b = -0.766826$	$2.40108 + 2.02988I$	$-0.13779 - 5.66929I$
$v = -0.85031 - 1.47278I$ $a = 0$ $b = -0.766826$	$2.40108 - 2.02988I$	$-0.13779 + 5.66929I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2-u+1)^5)(u^5-3u^4+\cdots-u+1)(u^{105}+53u^{104}+\cdots-7u-1)$
c_2	$((u^2+u+1)^5)(u^5-u^4+\cdots+u-1)(u^{105}+7u^{104}+\cdots+7u+1)$
c_3	$(u^2-u+1)^5(u^5+u^4-2u^3-u^2+u-1)$ $\cdot(u^{105}-7u^{104}+\cdots+40669u+23377)$
c_4	$u^{10}(u^5+u^4+\cdots+u-1)(u^{105}+2u^{104}+\cdots+2048u+1024)$
c_5	$((u^2-u+1)^5)(u^5+u^4+\cdots+u+1)(u^{105}+7u^{104}+\cdots+7u+1)$
c_6	$u^5(u^5+u^4+\cdots+u+1)^2(u^{105}+3u^{104}+\cdots+96u+32)$
c_7	$u^{10}(u^5-u^4+\cdots+u+1)(u^{105}+2u^{104}+\cdots+2048u+1024)$
c_8, c_9	$((u+1)^5)(u^5-u^4+\cdots+u+1)^2(u^{105}+8u^{104}+\cdots+2u+1)$
c_{10}	$u^5(u^5-u^4+\cdots+u-1)^2(u^{105}+3u^{104}+\cdots+96u+32)$
c_{11}	$u^5(u^5-3u^4+\cdots-u+1)^2(u^{105}-39u^{104}+\cdots-14848u+1024)$
c_{12}	$((u-1)^5)(u^5+u^4+\cdots+u-1)^2(u^{105}+8u^{104}+\cdots+2u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^2+y+1)^5)(y^5-y^4+\cdots+3y-1)(y^{105}+5y^{104}+\cdots-47y-1)$
c_2, c_5	$((y^2+y+1)^5)(y^5+3y^4+\cdots-y-1)(y^{105}+53y^{104}+\cdots-7y-1)$
c_3	$(y^2+y+1)^5(y^5-5y^4+8y^3-3y^2-y-1)$ $\cdot(y^{105}-43y^{104}+\cdots+5130220969y-546484129)$
c_4, c_7	$y^{10}(y^5-5y^4+8y^3-3y^2-y-1)$ $\cdot(y^{105}-60y^{104}+\cdots+25165824y-1048576)$
c_6, c_{10}	$y^5(y^5+3y^4+\cdots-y-1)^2(y^{105}+39y^{104}+\cdots-14848y-1024)$
c_8, c_9, c_{12}	$(y-1)^5(y^5-5y^4+8y^3-3y^2-y-1)^2$ $\cdot(y^{105}-90y^{104}+\cdots-206y-1)$
c_{11}	$y^5(y^5-y^4+8y^3-3y^2+3y-1)^2$ $\cdot(y^{105}+47y^{104}+\cdots-210108416y-1048576)$