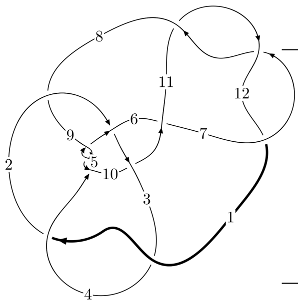
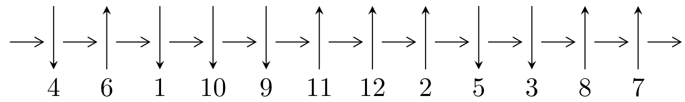
$12a_{1016}$ $(K12a_{1016})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -2.43965 \times 10^{142} u^{91} - 2.96374 \times 10^{142} u^{90} + \cdots + 1.68305 \times 10^{144} b + 1.79998 \times 10^{144},$$
$$3.24920 \times 10^{145} u^{91} + 5.02902 \times 10^{145} u^{90} + \cdots + 2.86119 \times 10^{145} a - 3.31514 \times 10^{144},\ u^{92} + 2u^{91} + \cdots + 2u$$
$$I_2^u = \langle b + 1,\ -u^3 - 11u^2 + 17a - 9u - 5,\ u^4 + u^3 + u^2 + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 96 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. $I_1^u = \langle -2.44\times 10^{142}u^{91} - 2.96\times 10^{142}u^{90} + \cdots + 1.68\times 10^{144}b + 1.80\times 10^{144},\ 3.25\times 10^{145}u^{91} + 5.03\times 10^{145}u^{90} + \cdots + 2.86\times 10^{145}a - 3.32\times 10^{144},\ u^{92} + 2u^{91} + \cdots + 2u + 1\rangle$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -1.13561u^{91} - 1.75767u^{90} + \cdots - 7.01717u + 0.115866 \\ 0.0144954u^{91} + 0.0176093u^{90} + \cdots + 0.109965u - 1.06947 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -1.12112u^{91} - 1.74006u^{90} + \cdots - 6.90720u - 0.953605 \\ 0.0144954u^{91} + 0.0176093u^{90} + \cdots + 0.109965u - 1.06947 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -1.14289u^{91} - 1.76597u^{90} + \cdots - 7.02281u + 0.125248 \\ 0.0106639u^{91} + 0.00260308u^{90} + \cdots + 0.0904560u - 1.08464 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -1.31145u^{91} - 3.32635u^{90} + \cdots - 11.3186u - 5.95210 \\ 0.544767u^{91} + 1.07553u^{90} + \cdots + 3.57377u + 1.08287 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.104548u^{91} + 0.533416u^{90} + \cdots - 1.42374u + 4.75175 \\ -0.210757u^{91} - 0.419015u^{90} + \cdots - 0.811424u - 0.740713 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -1.20284u^{91} - 2.85259u^{90} + \cdots - 5.65875u - 6.26189 \\ 0.602208u^{91} + 1.20272u^{90} + \cdots + 4.08126u + 1.16263 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.519155u^{91} - 1.70050u^{90} + \cdots - 11.2427u - 3.96239 \\ 0.285601u^{91} + 0.468224u^{90} + \cdots + 1.92592u + 0.636332 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4.11119u^{91} - 6.51477u^{90} + \cdots - 21.5680u - 8.41021$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^{92} - 5u^{91} + \cdots - 2416u + 289$
c_2	$u^{92} - 7u^{91} + \cdots - 48824u + 4624$
c_4, c_5, c_9	$u^{92} + 2u^{91} + \cdots + 2u + 1$
c_6	$u^{92} + 2u^{91} + \cdots - 1508u + 740$
c_7, c_{11}, c_{12}	$u^{92} - 2u^{91} + \cdots - 4u + 1$
c_8	$17(17u^{92} - 174u^{91} + \cdots + 130298u + 44509)$
c_{10}	$17(17u^{92} + 140u^{91} + \cdots + 7874u + 24302)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^{92} - 51y^{91} + \cdots + 749832y + 83521$
c_2	$y^{92} - 27y^{91} + \cdots - 41819456y + 21381376$
c_4, c_5, c_9	$y^{92} + 86y^{91} + \cdots - 2y + 1$
c_6	$y^{92} - 6y^{91} + \cdots + 4263096y + 547600$
c_7, c_{11}, c_{12}	$y^{92} + 82y^{91} + \cdots - 2y + 1$
c_8	$289(289y^{92} - 25210y^{91} + \cdots + 2.82378 \times 10^{10}y + 1.98105 \times 10^{9})$
c_{10}	$289(289y^{92} - 13548y^{91} + \cdots + 5.92033 \times 10^{9}y + 5.90587 \times 10^{8})$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.723429 + 0.708922I$ $a = -0.068530 - 0.266178I$ $b = 1.030650 - 0.427212I$	$0.53754 + 3.89977I$	0
$u = 0.723429 - 0.708922I$ $a = -0.068530 + 0.266178I$ $b = 1.030650 + 0.427212I$	$0.53754 - 3.89977I$	0
$u = -0.755871 + 0.677347I$ $a = -0.116138 + 0.330806I$ $b = 1.146220 + 0.435160I$	$-5.05109 - 7.87160I$	0
$u = -0.755871 - 0.677347I$ $a = -0.116138 - 0.330806I$ $b = 1.146220 - 0.435160I$	$-5.05109 + 7.87160I$	0
$u = 0.917926 + 0.462287I$ $a = 0.472649 - 0.649934I$ $b = 1.170350 + 0.255984I$	$-9.61838 - 3.26653I$	0
$u = 0.917926 - 0.462287I$ $a = 0.472649 + 0.649934I$ $b = 1.170350 - 0.255984I$	$-9.61838 + 3.26653I$	0
$u = -0.818704 + 0.470594I$ $a = 0.620242 + 0.998337I$ $b = 1.287710 - 0.562306I$	$-5.6448 + 13.1488I$	0
$u = -0.818704 - 0.470594I$ $a = 0.620242 - 0.998337I$ $b = 1.287710 + 0.562306I$	$-5.6448 - 13.1488I$	0
$u = -0.837149 + 0.425208I$ $a = 0.708549 + 0.797862I$ $b = 1.112130 - 0.479118I$	$-1.89958 + 4.64735I$	0
$u = -0.837149 - 0.425208I$ $a = 0.708549 - 0.797862I$ $b = 1.112130 + 0.479118I$	$-1.89958 - 4.64735I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.679164+0.816347I$ $a=\ 0.058176+0.239150I$ $b=\ 0.885022+0.292304I$	$-0.801850+0.602505I$	0
$u=-0.679164-0.816347I$ $a=\ 0.058176-0.239150I$ $b=\ 0.885022-0.292304I$	$-0.801850-0.602505I$	0
$u=\ 0.820373+0.454211I$ $a=\ 0.675976-0.935007I$ $b=\ 1.211960+0.552100I$	$-0.20311-9.12601I$	0
$u=\ 0.820373-0.454211I$ $a=\ 0.675976+0.935007I$ $b=\ 1.211960-0.552100I$	$-0.20311+9.12601I$	0
$u=-0.780319+0.298193I$ $a=\ 1.014290+0.508885I$ $b=\ 0.759730-0.433721I$	$-0.79364+3.83441I$	0
$u=-0.780319-0.298193I$ $a=\ 1.014290-0.508885I$ $b=\ 0.759730+0.433721I$	$-0.79364-3.83441I$	0
$u=-0.508684+0.554434I$ $a=\ 0.009437-0.236074I$ $b=\ 0.378877+0.709246I$	$0.333433+0.235331I$	$2.44269-1.33984I$
$u=-0.508684-0.554434I$ $a=\ 0.009437+0.236074I$ $b=\ 0.378877-0.709246I$	$0.333433-0.235331I$	$2.44269+1.33984I$
$u=-0.036100+1.251740I$ $a=\ 1.326040-0.471491I$ $b=-1.73590+0.19170I$	$-4.09748+3.83030I$	0
$u=-0.036100-1.251740I$ $a=\ 1.326040+0.471491I$ $b=-1.73590-0.19170I$	$-4.09748-3.83030I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.027948 + 1.287430I$ $a = 0.807838 + 0.454026I$ $b = -1.53431 - 0.15728I$	$1.06309 - 1.30891I$	0
$u = 0.027948 - 1.287430I$ $a = 0.807838 - 0.454026I$ $b = -1.53431 + 0.15728I$	$1.06309 + 1.30891I$	0
$u = 0.531244 + 0.471938I$ $a = -0.084246 + 0.425593I$ $b = 0.177103 - 0.931948I$	$2.92557 - 3.81766I$	$4.57168 + 6.93434I$
$u = 0.531244 - 0.471938I$ $a = -0.084246 - 0.425593I$ $b = 0.177103 + 0.931948I$	$2.92557 + 3.81766I$	$4.57168 - 6.93434I$
$u = -0.549556 + 0.440216I$ $a = -0.146223 - 0.506320I$ $b = 0.080541 + 1.063430I$	$-1.93813 + 7.45601I$	$-1.14672 - 8.36768I$
$u = -0.549556 - 0.440216I$ $a = -0.146223 + 0.506320I$ $b = 0.080541 - 1.063430I$	$-1.93813 - 7.45601I$	$-1.14672 + 8.36768I$
$u = -0.112173 + 1.307740I$ $a = 0.99969 - 1.56602I$ $b = -1.43510 + 0.71195I$	$-3.18580 + 0.28744I$	0
$u = -0.112173 - 1.307740I$ $a = 0.99969 + 1.56602I$ $b = -1.43510 - 0.71195I$	$-3.18580 - 0.28744I$	0
$u = 0.639929 + 0.234530I$ $a = 1.306120 - 0.290351I$ $b = 0.419159 + 0.406209I$	$2.26085 + 0.24700I$	$4.77847 + 1.60729I$
$u = 0.639929 - 0.234530I$ $a = 1.306120 + 0.290351I$ $b = 0.419159 - 0.406209I$	$2.26085 - 0.24700I$	$4.77847 - 1.60729I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.872325 + 1.004060I$ $a = 0.101148 - 0.324936I$ $b = 0.959957 - 0.089915I$	$-8.36829 - 2.94551I$	0
$u = 0.872325 - 1.004060I$ $a = 0.101148 + 0.324936I$ $b = 0.959957 + 0.089915I$	$-8.36829 + 2.94551I$	0
$u = 0.097873 + 1.350170I$ $a = 0.63263 + 1.66426I$ $b = -1.103100 - 0.603007I$	$2.06203 - 1.91481I$	0
$u = 0.097873 - 1.350170I$ $a = 0.63263 - 1.66426I$ $b = -1.103100 + 0.603007I$	$2.06203 + 1.91481I$	0
$u = 0.151680 + 1.346250I$ $a = 0.76051 + 1.99171I$ $b = -1.13321 - 1.07861I$	$-1.87291 - 7.85148I$	0
$u = 0.151680 - 1.346250I$ $a = 0.76051 - 1.99171I$ $b = -1.13321 + 1.07861I$	$-1.87291 + 7.85148I$	0
$u = -0.138270 + 1.358800I$ $a = 0.66638 - 1.88607I$ $b = -1.009970 + 0.953371I$	$3.22510 + 4.72100I$	0
$u = -0.138270 - 1.358800I$ $a = 0.66638 + 1.88607I$ $b = -1.009970 - 0.953371I$	$3.22510 - 4.72100I$	0
$u = -0.540093 + 0.295440I$ $a = 1.60359 + 0.21389I$ $b = 0.155996 - 0.537063I$	$-2.23514 - 3.97057I$	$-0.795717 + 0.624942I$
$u = -0.540093 - 0.295440I$ $a = 1.60359 - 0.21389I$ $b = 0.155996 + 0.537063I$	$-2.23514 + 3.97057I$	$-0.795717 - 0.624942I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.054258 + 1.403060I$ $a = 1.05324 - 2.71332I$ $b = -0.840395 + 0.129390I$	$4.79962 + 0.34018I$	0
$u = -0.054258 - 1.403060I$ $a = 1.05324 + 2.71332I$ $b = -0.840395 - 0.129390I$	$4.79962 - 0.34018I$	0
$u = 0.034934 + 1.411120I$ $a = 1.55901 + 4.66262I$ $b = -0.922785 - 0.025140I$	$0.43080 + 2.76175I$	0
$u = 0.034934 - 1.411120I$ $a = 1.55901 - 4.66262I$ $b = -0.922785 + 0.025140I$	$0.43080 - 2.76175I$	0
$u = 0.07790 + 1.41886I$ $a = 1.13505 + 1.45161I$ $b = -0.501962 - 0.230422I$	$1.33300 - 3.10007I$	0
$u = 0.07790 - 1.41886I$ $a = 1.13505 - 1.45161I$ $b = -0.501962 + 0.230422I$	$1.33300 + 3.10007I$	0
$u = -0.30977 + 1.39567I$ $a = 0.437079 + 1.045170I$ $b = 0.777453 - 0.469099I$	$2.83351 - 0.71101I$	0
$u = -0.30977 - 1.39567I$ $a = 0.437079 - 1.045170I$ $b = 0.777453 + 0.469099I$	$2.83351 + 0.71101I$	0
$u = 0.475179 + 0.304749I$ $a = -0.034351 + 0.929835I$ $b = -0.578262 - 0.755556I$	$-4.66057 - 0.77078I$	$-5.52980 + 5.29384I$
$u = 0.475179 - 0.304749I$ $a = -0.034351 - 0.929835I$ $b = -0.578262 + 0.755556I$	$-4.66057 + 0.77078I$	$-5.52980 - 5.29384I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.14742 + 1.43063I$ $a = 0.16567 + 1.61582I$ $b = -0.278816 - 0.974072I$	$0.92558 - 2.99536I$	0
$u = 0.14742 - 1.43063I$ $a = 0.16567 - 1.61582I$ $b = -0.278816 + 0.974072I$	$0.92558 + 2.99536I$	0
$u = 0.517746 + 0.164875I$ $a = -0.437178 + 0.861152I$ $b = -1.27172 - 0.67226I$	$-6.59592 - 5.44870I$	$-8.87418 + 7.66099I$
$u = 0.517746 - 0.164875I$ $a = -0.437178 - 0.861152I$ $b = -1.27172 + 0.67226I$	$-6.59592 + 5.44870I$	$-8.87418 - 7.66099I$
$u = 0.31166 + 1.43603I$ $a = 0.288699 - 1.233570I$ $b = 0.897418 + 0.544087I$	$7.56798 - 3.49046I$	0
$u = 0.31166 - 1.43603I$ $a = 0.288699 + 1.233570I$ $b = 0.897418 - 0.544087I$	$7.56798 + 3.49046I$	0
$u = -0.279069 + 0.437448I$ $a = 0.540250 - 0.363433I$ $b = 0.014327 + 0.254945I$	$0.076878 + 0.928772I$	$1.77549 - 6.97869I$
$u = -0.279069 - 0.437448I$ $a = 0.540250 + 0.363433I$ $b = 0.014327 - 0.254945I$	$0.076878 - 0.928772I$	$1.77549 + 6.97869I$
$u = -0.19572 + 1.46899I$ $a = -0.58313 - 1.63411I$ $b = 0.272489 + 1.347670I$	$4.24474 + 10.19690I$	0
$u = -0.19572 - 1.46899I$ $a = -0.58313 + 1.63411I$ $b = 0.272489 - 1.347670I$	$4.24474 - 10.19690I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.506332 + 0.066712I$ $a = -0.747080 - 0.454115I$ $b = -1.49694 + 0.27867I$	$-7.35852 - 1.90033I$	$-10.89986 + 0.67632I$
$u = -0.506332 - 0.066712I$ $a = -0.747080 + 0.454115I$ $b = -1.49694 - 0.27867I$	$-7.35852 + 1.90033I$	$-10.89986 - 0.67632I$
$u = 0.18964 + 1.47755I$ $a = -0.57786 + 1.49123I$ $b = 0.328015 - 1.241050I$	$9.24369 - 6.48174I$	0
$u = 0.18964 - 1.47755I$ $a = -0.57786 - 1.49123I$ $b = 0.328015 + 1.241050I$	$9.24369 + 6.48174I$	0
$u = -0.477519 + 0.178866I$ $a = -0.473581 - 1.039140I$ $b = -1.109380 + 0.564891I$	$-1.60225 + 2.51291I$	$-3.70004 - 8.45487I$
$u = -0.477519 - 0.178866I$ $a = -0.473581 + 1.039140I$ $b = -1.109380 - 0.564891I$	$-1.60225 - 2.51291I$	$-3.70004 + 8.45487I$
$u = -0.31089 + 1.46801I$ $a = 0.098323 + 1.393730I$ $b = 1.033910 - 0.595051I$	$4.94388 + 7.87236I$	0
$u = -0.31089 - 1.46801I$ $a = 0.098323 - 1.393730I$ $b = 1.033910 + 0.595051I$	$4.94388 - 7.87236I$	0
$u = -0.17588 + 1.49414I$ $a = -0.530299 - 1.224910I$ $b = 0.405401 + 1.031980I$	$6.96522 + 2.75896I$	0
$u = -0.17588 - 1.49414I$ $a = -0.530299 + 1.224910I$ $b = 0.405401 - 1.031980I$	$6.96522 - 2.75896I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.15243 + 1.50603I$ $a = -0.366384 - 0.991531I$ $b = 0.389992 + 0.803857I$	$6.75562 + 2.72068I$	0
$u = -0.15243 - 1.50603I$ $a = -0.366384 + 0.991531I$ $b = 0.389992 - 0.803857I$	$6.75562 - 2.72068I$	0
$u = -0.30523 + 1.49802I$ $a = -0.16998 + 1.57415I$ $b = 1.218150 - 0.641250I$	$4.31942 + 8.78400I$	0
$u = -0.30523 - 1.49802I$ $a = -0.16998 - 1.57415I$ $b = 1.218150 + 0.641250I$	$4.31942 - 8.78400I$	0
$u = 0.306365 + 0.351401I$ $a = 2.37372 + 1.25949I$ $b = -0.676812 + 0.283730I$	$-4.21670 - 1.78372I$	$-4.08948 + 6.84585I$
$u = 0.306365 - 0.351401I$ $a = 2.37372 - 1.25949I$ $b = -0.676812 - 0.283730I$	$-4.21670 + 1.78372I$	$-4.08948 - 6.84585I$
$u = 0.29882 + 1.50626I$ $a = -0.25823 - 1.68961I$ $b = 1.29074 + 0.68762I$	$6.1406 - 13.1964I$	0
$u = 0.29882 - 1.50626I$ $a = -0.25823 + 1.68961I$ $b = 1.29074 - 0.68762I$	$6.1406 + 13.1964I$	0
$u = -0.29742 + 1.51179I$ $a = -0.33990 + 1.73044I$ $b = 1.34484 - 0.69377I$	$0.7723 + 17.2144I$	0
$u = -0.29742 - 1.51179I$ $a = -0.33990 - 1.73044I$ $b = 1.34484 + 0.69377I$	$0.7723 - 17.2144I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.32689 + 1.50963I$ $a = -0.325754 - 1.336240I$ $b = 1.255170 + 0.478109I$	$-3.27782 - 7.72836I$	0
$u = 0.32689 - 1.50963I$ $a = -0.325754 + 1.336240I$ $b = 1.255170 - 0.478109I$	$-3.27782 + 7.72836I$	0
$u = 0.14716 + 1.55671I$ $a = -0.496177 + 0.578156I$ $b = 0.643062 - 0.573865I$	$8.30821 + 0.96783I$	0
$u = 0.14716 - 1.55671I$ $a = -0.496177 - 0.578156I$ $b = 0.643062 + 0.573865I$	$8.30821 - 0.96783I$	0
$u = 0.417977 + 0.073002I$ $a = -1.40356 + 0.82916I$ $b = -1.214270 - 0.174607I$	$-2.41043 - 0.16113I$	$-6.41199 - 3.08513I$
$u = 0.417977 - 0.073002I$ $a = -1.40356 - 0.82916I$ $b = -1.214270 + 0.174607I$	$-2.41043 + 0.16113I$	$-6.41199 + 3.08513I$
$u = 0.112135 + 0.407702I$ $a = 4.76075 + 1.11963I$ $b = -1.125990 + 0.161420I$	$-5.17066 + 3.31019I$	$5.13185 + 5.07018I$
$u = 0.112135 - 0.407702I$ $a = 4.76075 - 1.11963I$ $b = -1.125990 - 0.161420I$	$-5.17066 - 3.31019I$	$5.13185 - 5.07018I$
$u = -0.15307 + 1.59919I$ $a = -0.570219 - 0.335579I$ $b = 0.795921 + 0.433246I$	$2.79603 - 4.53346I$	0
$u = -0.15307 - 1.59919I$ $a = -0.570219 + 0.335579I$ $b = 0.795921 - 0.433246I$	$2.79603 + 4.53346I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.172880 + 0.325783I$ $a = 4.14198 - 2.59757I$ $b = -0.973359 - 0.135697I$	$-0.571740 - 0.532703I$	$3.27414 - 13.20976I$
$u = -0.172880 - 0.325783I$ $a = 4.14198 + 2.59757I$ $b = -0.973359 + 0.135697I$	$-0.571740 + 0.532703I$	$3.27414 + 13.20976I$

II. $I_2^u = \langle b+1,\ -u^3-11u^2+17a-9u-5,\ u^4+u^3+u^2+1\rangle$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.0588235u^3 + 0.647059u^2 + 0.529412u + 0.294118 \\ -1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0588235u^3 + 0.647059u^2 + 0.529412u - 0.705882 \\ -1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.0588235u^3 + 0.647059u^2 + 0.529412u + 0.294118 \\ -1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.0103806u^3 + 0.00346021u^2 + 0.318339u + 0.242215 \\ 0.588235u^3 + 0.470588u^2 + 1.29412u - 0.0588235 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^2 + 1 \\ -u^3 + u^2 - 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.0726644u^3 + 0.975779u^2 - 0.228374u + 1.30450 \\ -0.117647u^3 + 1.70588u^2 - 0.0588235u + 0.411765 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.283737u^3 - 0.238754u^2 + 1.03460u + 0.287197 \\ 1.41176u^3 + 0.529412u^2 + 1.70588u + 0.0588235 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1.26298u^3 + 0.245675u^2 + 0.602076u + 0.197232 \\ 1.76471u^3 + 1.41176u^2 - 0.117647u + 0.823529 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{631}{289}u^3 + \frac{2715}{289}u^2 + \frac{84}{289}u - \frac{112}{289}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3	$(y-1)^4$
c_2	y^4
c_4, c_5, c_9	$y^4 + y^3 + 3y^2 + 2y + 1$
c_6	$y^4 + 9y^3 + 31y^2 + 19y + 4$
c_7, c_{11}, c_{12}	$y^4 + 5y^3 + 7y^2 + 2y + 1$
c_8	$289(289y^4 + 365y^3 + 155y^2 + 22y + 1)$
c_{10}	$289(289y^4 - 145y^3 + 78y^2 - 17y + 4)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \ \ 0.351808 + 0.720342I$ $a = \ \ 0.195047 + 0.703062I$ $b = -1.00000$	$-1.43393 - 1.41510I$	$-2.89659 + 5.20302I$
$u = \ \ 0.351808 - 0.720342I$ $a = \ \ 0.195047 - 0.703062I$ $b = -1.00000$	$-1.43393 + 1.41510I$	$-2.89659 - 5.20302I$
$u = -0.851808 + 0.911292I$ $a = -0.136224 - 0.449937I$ $b = -1.00000$	$-8.43568 + 3.16396I$	$-4.9044 - 16.9987I$
$u = -0.851808 - 0.911292I$ $a = -0.136224 + 0.449937I$ $b = -1.00000$	$-8.43568 - 3.16396I$	$-4.9044 + 16.9987I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^4)(u^{92}-5u^{91}+\cdots-2416u+289)$
c_2	$u^4(u^{92}-7u^{91}+\cdots-48824u+4624)$
c_3	$((u+1)^4)(u^{92}-5u^{91}+\cdots-2416u+289)$
c_4, c_5	$(u^4+u^3+u^2+1)(u^{92}+2u^{91}+\cdots+2u+1)$
c_6	$(u^4-u^3+5u^2+u+2)(u^{92}+2u^{91}+\cdots-1508u+740)$
c_7	$(u^4+u^3+3u^2+2u+1)(u^{92}-2u^{91}+\cdots-4u+1)$
c_8	$289(17u^4-3u^3+11u^2+1)$ $\cdot(17u^{92}-174u^{91}+\cdots+130298u+44509)$
c_9	$(u^4-u^3+u^2+1)(u^{92}+2u^{91}+\cdots+2u+1)$
c_{10}	$289(17u^4+3u^3-4u^2+u+2)$ $\cdot(17u^{92}+140u^{91}+\cdots+7874u+24302)$
c_{11}, c_{12}	$(u^4-u^3+3u^2-2u+1)(u^{92}-2u^{91}+\cdots-4u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3	$((y-1)^4)(y^{92} - 51y^{91} + \cdots + 749832y + 83521)$
c_2	$y^4(y^{92} - 27y^{91} + \cdots - 4.18195 \times 10^7 y + 2.13814 \times 10^7)$
c_4, c_5, c_9	$(y^4 + y^3 + 3y^2 + 2y + 1)(y^{92} + 86y^{91} + \cdots - 2y + 1)$
c_6	$(y^4 + 9y^3 + 31y^2 + 19y + 4)(y^{92} - 6y^{91} + \cdots + 4263096y + 547600)$
c_7, c_{11}, c_{12}	$(y^4 + 5y^3 + 7y^2 + 2y + 1)(y^{92} + 82y^{91} + \cdots - 2y + 1)$
c_8	$83521(289y^4 + 365y^3 + 155y^2 + 22y + 1)$ $\cdot (289y^{92} - 25210y^{91} + \cdots + 28237789026y + 1981051081)$
c_{10}	$83521(289y^4 - 145y^3 + 78y^2 - 17y + 4)$ $\cdot (289y^{92} - 13548y^{91} + \cdots + 5920326256y + 590587204)$