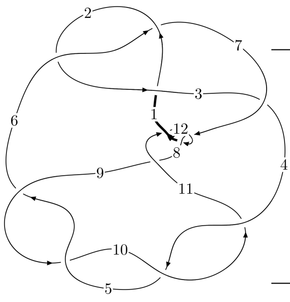
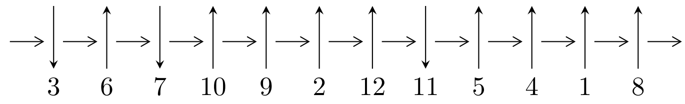
$12a_{0249}$ $(K12a_{0249})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & -4.50926\times 10^{56}u^{80} + 1.29640\times 10^{57}u^{79} + \cdots + 4.18236\times 10^{56}b - 1.29334\times 10^{57}, \\ & 2.21087\times 10^{57}u^{80} - 5.78355\times 10^{57}u^{79} + \cdots + 1.25471\times 10^{57}a + 6.67332\times 10^{57},\ u^{81} - 3u^{80} + \cdots + 10u - \end{aligned}$$

$$I_2^u = \langle -2a^3 - 3a^2 + 5b - 10a - 7,\ a^4 + 2a^3 + 7a^2 + 6a + 3,\ u - 1\rangle$$

$$I_3^u = \langle b + a,\ a^2 - a + 1,\ u + 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 87 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. $\boldsymbol{I^u_1 = \langle -4.51 \times 10^{56} u^{80} + 1.30 \times 10^{57} u^{79} + \cdots + 4.18 \times 10^{56} b - 1.29 \times 10^{57},\ 2.21 \times 10^{57} u^{80} - 5.78 \times 10^{57} u^{79} + \cdots + 1.25 \times 10^{57} a + 6.67 \times 10^{57},\ u^{81} - 3u^{80} + \cdots + 10u - 3\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -1.76206u^{80} + 4.60948u^{79} + \cdots + 13.6480u - 5.31862 \\ 1.07816u^{80} - 3.09968u^{79} + \cdots - 4.73997u + 3.09235 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -0.683900u^{80} + 1.50979u^{79} + \cdots + 8.90805u - 2.22626 \\ 1.07816u^{80} - 3.09968u^{79} + \cdots - 4.73997u + 3.09235 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.759894u^{80} + 1.19450u^{79} + \cdots + 5.14103u + 1.04489 \\ 1.33087u^{80} - 3.53951u^{79} + \cdots - 12.1484u + 4.61361 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.488879u^{80} - 0.786987u^{79} + \cdots - 10.5299u + 3.51618 \\ -0.777576u^{80} + 1.87963u^{79} + \cdots + 9.94260u - 4.09065 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^6 - u^4 + 1 \\ -u^8 + 2u^6 - 2u^4 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1.44849u^{80} - 3.72044u^{79} + \cdots - 22.9034u + 8.56114 \\ -0.149725u^{80} + 0.318455u^{79} + \cdots + 5.31675u - 2.26332 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.460801u^{80} + 1.25988u^{79} + \cdots + 4.96189u + 2.03652 \\ 0.269554u^{80} - 0.789293u^{79} + \cdots - 6.79647u + 1.41492 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 3.70974u^{80} - 8.50300u^{79} + \cdots - 53.6156u + 22.8801$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{81} + 38u^{80} + \cdots + 43u - 9$
c_2, c_6	$u^{81} - 2u^{80} + \cdots + 11u - 3$
c_3	$u^{81} + 2u^{80} + \cdots - 1897u - 1443$
c_4, c_5, c_9 c_{10}	$u^{81} - u^{80} + \cdots + 16u - 4$
c_7, c_{12}	$u^{81} - 3u^{80} + \cdots + 10u - 3$
c_8	$u^{81} - 15u^{80} + \cdots - 2304u - 2304$
c_{11}	$u^{81} - 43u^{80} + \cdots + 64u - 9$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{81} + 14y^{80} + \cdots + 6115y - 81$
c_2, c_6	$y^{81} + 38y^{80} + \cdots + 43y - 9$
c_3	$y^{81} - 10y^{80} + \cdots + 88698091y - 2082249$
c_4, c_5, c_9 c_{10}	$y^{81} + 91y^{80} + \cdots - 320y - 16$
c_7, c_{12}	$y^{81} - 43y^{80} + \cdots + 64y - 9$
c_8	$y^{81} + 31y^{80} + \cdots + 129466368y - 5308416$
c_{11}	$y^{81} - 3y^{80} + \cdots - 116y - 81$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.796748 + 0.593974I$ $a = 0.799663 - 0.367206I$ $b = 1.062700 + 0.399781I$	$-4.32097 - 5.87990I$	0
$u = -0.796748 - 0.593974I$ $a = 0.799663 + 0.367206I$ $b = 1.062700 - 0.399781I$	$-4.32097 + 5.87990I$	0
$u = 0.261959 + 0.916099I$ $a = -0.120408 + 0.255723I$ $b = -1.43910 - 0.79999I$	$-8.91041 - 10.05080I$	$0. + 6.04265I$
$u = 0.261959 - 0.916099I$ $a = -0.120408 - 0.255723I$ $b = -1.43910 + 0.79999I$	$-8.91041 + 10.05080I$	$0. - 6.04265I$
$u = 0.792399 + 0.687957I$ $a = -0.157829 + 0.788105I$ $b = 1.186470 - 0.176451I$	$-9.58949 + 2.60972I$	0
$u = 0.792399 - 0.687957I$ $a = -0.157829 - 0.788105I$ $b = 1.186470 + 0.176451I$	$-9.58949 - 2.60972I$	0
$u = 0.384053 + 0.849389I$ $a = -0.023158 + 0.734226I$ $b = -0.649914 - 0.207937I$	$-11.25000 - 2.13855I$	$-3.51015 + 0.I$
$u = 0.384053 - 0.849389I$ $a = -0.023158 - 0.734226I$ $b = -0.649914 + 0.207937I$	$-11.25000 + 2.13855I$	$-3.51015 + 0.I$
$u = 0.730334 + 0.780884I$ $a = -0.029790 - 1.009360I$ $b = -1.145080 - 0.109225I$	$-13.24960 - 1.33495I$	0
$u = 0.730334 - 0.780884I$ $a = -0.029790 + 1.009360I$ $b = -1.145080 + 0.109225I$	$-13.24960 + 1.33495I$	0

Solutions to I^u_1	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.985866 + 0.454997I$ $a = 0.07224 - 1.47855I$ $b = -0.448117 - 0.062543I$	$-0.285086 + 1.117670I$	0
$u = 0.985866 - 0.454997I$ $a = 0.07224 + 1.47855I$ $b = -0.448117 + 0.062543I$	$-0.285086 - 1.117670I$	0
$u = -0.750762 + 0.487613I$ $a = -0.279558 + 0.636943I$ $b = -0.800710 - 0.170169I$	$-1.53897 - 2.00741I$	$2.59388 + 4.68854I$
$u = -0.750762 - 0.487613I$ $a = -0.279558 - 0.636943I$ $b = -0.800710 + 0.170169I$	$-1.53897 + 2.00741I$	$2.59388 - 4.68854I$
$u = 0.261751 + 0.852629I$ $a = -0.114458 - 0.339479I$ $b = 0.999355 + 0.899928I$	$-6.55376 - 4.97042I$	$2.32921 + 2.21243I$
$u = 0.261751 - 0.852629I$ $a = -0.114458 + 0.339479I$ $b = 0.999355 - 0.899928I$	$-6.55376 + 4.97042I$	$2.32921 - 2.21243I$
$u = -0.663280 + 0.559000I$ $a = 0.512229 - 1.231590I$ $b = 0.886253 - 0.330986I$	$-4.60582 + 1.34073I$	$-2.15223 - 0.59245I$
$u = -0.663280 - 0.559000I$ $a = 0.512229 + 1.231590I$ $b = 0.886253 + 0.330986I$	$-4.60582 - 1.34073I$	$-2.15223 + 0.59245I$
$u = -1.042180 + 0.456498I$ $a = 1.14852 - 1.99118I$ $b = 1.143010 + 0.808091I$	$-3.31629 - 4.95466I$	0
$u = -1.042180 - 0.456498I$ $a = 1.14852 + 1.99118I$ $b = 1.143010 - 0.808091I$	$-3.31629 + 4.95466I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.137170 + 0.079899I$ $a = -0.377449 + 0.256412I$ $b = 0.459209 - 0.546813I$	$1.12101 + 1.57171I$	0
$u = 1.137170 - 0.079899I$ $a = -0.377449 - 0.256412I$ $b = 0.459209 + 0.546813I$	$1.12101 - 1.57171I$	0
$u = 0.871717 + 0.741478I$ $a = -0.136021 - 0.555032I$ $b = -1.299770 + 0.292571I$	$-12.8356 + 6.9731I$	0
$u = 0.871717 - 0.741478I$ $a = -0.136021 + 0.555032I$ $b = -1.299770 - 0.292571I$	$-12.8356 - 6.9731I$	0
$u = -0.241031 + 0.814811I$ $a = 0.427694 + 0.255486I$ $b = 1.28959 - 0.81268I$	$-1.44578 + 7.46970I$	$2.13977 - 7.53803I$
$u = -0.241031 - 0.814811I$ $a = 0.427694 - 0.255486I$ $b = 1.28959 + 0.81268I$	$-1.44578 - 7.46970I$	$2.13977 + 7.53803I$
$u = -1.092690 + 0.367970I$ $a = -1.18215 + 1.63995I$ $b = -0.502377 - 0.884483I$	$-1.50092 - 0.32300I$	0
$u = -1.092690 - 0.367970I$ $a = -1.18215 - 1.63995I$ $b = -0.502377 + 0.884483I$	$-1.50092 + 0.32300I$	0
$u = 1.059850 + 0.475151I$ $a = -1.46127 - 1.19278I$ $b = 0.98355 + 1.34616I$	$-3.49725 + 1.66506I$	0
$u = 1.059850 - 0.475151I$ $a = -1.46127 + 1.19278I$ $b = 0.98355 - 1.34616I$	$-3.49725 - 1.66506I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.114570+0.367085I$ $a=\ \ 1.40300-0.98902I$ $b=-1.00338+1.14710I$	$3.18584+0.47349I$	0
$u=-1.114570-0.367085I$ $a=\ \ 1.40300+0.98902I$ $b=-1.00338-1.14710I$	$3.18584-0.47349I$	0
$u=-1.079580+0.538100I$ $a=\ \ 0.014477-1.406800I$ $b=\ \ 0.435679+0.187011I$	$-1.49474-4.97988I$	0
$u=-1.079580-0.538100I$ $a=\ \ 0.014477+1.406800I$ $b=\ \ 0.435679-0.187011I$	$-1.49474+4.97988I$	0
$u=-1.133020+0.423394I$ $a=-1.08928+1.38321I$ $b=\ \ 0.372683-1.290890I$	$4.43540-4.64713I$	0
$u=-1.133020-0.423394I$ $a=-1.08928-1.38321I$ $b=\ \ 0.372683+1.290890I$	$4.43540+4.64713I$	0
$u=\ \ 1.107350+0.503133I$ $a=\ \ 1.06694+1.60238I$ $b=-0.31789-1.48156I$	$-2.42474+7.07010I$	0
$u=\ \ 1.107350-0.503133I$ $a=\ \ 1.06694-1.60238I$ $b=-0.31789+1.48156I$	$-2.42474-7.07010I$	0
$u=-0.709019+0.330627I$ $a=\ \ 0.73488-2.03338I$ $b=\ \ 0.655129-0.447564I$	$-4.74805+1.41615I$	$-1.51325-0.38964I$
$u=-0.709019-0.330627I$ $a=\ \ 0.73488+2.03338I$ $b=\ \ 0.655129+0.447564I$	$-4.74805-1.41615I$	$-1.51325+0.38964I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.776899 + 0.083863I$ $a = 0.30115 + 1.53475I$ $b = -0.401413 - 1.092700I$	$1.04110 - 2.31172I$	$-0.35449 + 6.19378I$
$u = -0.776899 - 0.083863I$ $a = 0.30115 - 1.53475I$ $b = -0.401413 + 1.092700I$	$1.04110 + 2.31172I$	$-0.35449 - 6.19378I$
$u = 1.127760 + 0.463136I$ $a = 0.67789 + 1.86574I$ $b = 0.750120 - 0.981832I$	$4.15856 + 3.15800I$	0
$u = 1.127760 - 0.463136I$ $a = 0.67789 - 1.86574I$ $b = 0.750120 + 0.981832I$	$4.15856 - 3.15800I$	0
$u = -0.376784 + 0.677084I$ $a = 0.261702 + 0.830485I$ $b = 0.580518 + 0.054748I$	$-3.52922 + 0.29348I$	$-1.95785 - 1.10416I$
$u = -0.376784 - 0.677084I$ $a = 0.261702 - 0.830485I$ $b = 0.580518 - 0.054748I$	$-3.52922 - 0.29348I$	$-1.95785 + 1.10416I$
$u = 1.176320 + 0.345482I$ $a = 1.17168 + 1.12394I$ $b = -0.466240 - 1.078130I$	$4.66964 + 0.93016I$	0
$u = 1.176320 - 0.345482I$ $a = 1.17168 - 1.12394I$ $b = -0.466240 + 1.078130I$	$4.66964 - 0.93016I$	0
$u = -0.195107 + 0.743309I$ $a = -0.146046 - 0.301093I$ $b = -0.751437 + 0.868185I$	$0.66207 + 2.61772I$	$5.49326 - 3.70817I$
$u = -0.195107 - 0.743309I$ $a = -0.146046 + 0.301093I$ $b = -0.751437 - 0.868185I$	$0.66207 - 2.61772I$	$5.49326 + 3.70817I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \ \ 1.124630 + 0.513495I$ $a = -0.51301 - 2.18559I$ $b = -1.29848 + 0.87661I$	$2.13927 + 8.13542I$	0
$u = \ \ 1.124630 - 0.513495I$ $a = -0.51301 + 2.18559I$ $b = -1.29848 - 0.87661I$	$2.13927 - 8.13542I$	0
$u = \ \ 0.582369 + 0.482564I$ $a = -1.052810 + 0.647545I$ $b = -0.762247 + 0.368757I$	$-1.47024 + 2.80916I$	$3.39752 - 5.23952I$
$u = \ \ 0.582369 - 0.482564I$ $a = -1.052810 - 0.647545I$ $b = -0.762247 - 0.368757I$	$-1.47024 - 2.80916I$	$3.39752 + 5.23952I$
$u = \ \ 1.215240 + 0.294028I$ $a = -1.44116 - 0.72897I$ $b = \ \ 1.09779 + 0.94810I$	$3.09913 - 3.92873I$	0
$u = \ \ 1.215240 - 0.294028I$ $a = -1.44116 + 0.72897I$ $b = \ \ 1.09779 - 0.94810I$	$3.09913 + 3.92873I$	0
$u = -1.156380 + 0.521926I$ $a = -0.40564 + 1.98031I$ $b = -0.904152 - 1.051560I$	$3.43804 - 7.35840I$	0
$u = -1.156380 - 0.521926I$ $a = -0.40564 - 1.98031I$ $b = -0.904152 + 1.051560I$	$3.43804 + 7.35840I$	0
$u = -1.242610 + 0.276600I$ $a = -1.37285 + 0.87169I$ $b = \ \ 0.643240 - 0.863021I$	$-1.73489 + 1.37096I$	0
$u = -1.242610 - 0.276600I$ $a = -1.37285 - 0.87169I$ $b = \ \ 0.643240 + 0.863021I$	$-1.73489 - 1.37096I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.126650+0.608937I$ $a = -0.03883-1.45490I$ $b = -0.487522+0.360347I$	$-9.02484+7.52654I$	0
$u = 1.126650-0.608937I$ $a = -0.03883+1.45490I$ $b = -0.487522-0.360347I$	$-9.02484-7.52654I$	0
$u = -1.281430+0.120938I$ $a = 0.689563-0.297958I$ $b = -0.608778-0.197622I$	$-5.57684-0.74021I$	0
$u = -1.281430-0.120938I$ $a = 0.689563+0.297958I$ $b = -0.608778+0.197622I$	$-5.57684+0.74021I$	0
$u = -1.168810+0.553591I$ $a = 0.17533-2.20631I$ $b = 1.40463+0.90541I$	$1.29584-12.53390I$	0
$u = -1.168810-0.553591I$ $a = 0.17533+2.20631I$ $b = 1.40463-0.90541I$	$1.29584+12.53390I$	0
$u = 0.241156+0.647722I$ $a = -0.982772+0.134931I$ $b = -1.079730-0.790170I$	$-0.36569-3.61820I$	$4.43428+1.83605I$
$u = 0.241156-0.647722I$ $a = -0.982772-0.134931I$ $b = -1.079730+0.790170I$	$-0.36569+3.61820I$	$4.43428-1.83605I$
$u = 1.177720+0.571789I$ $a = 0.19023+2.04474I$ $b = 1.03678-1.09944I$	$-3.81938+10.21360I$	0
$u = 1.177720-0.571789I$ $a = 0.19023-2.04474I$ $b = 1.03678+1.09944I$	$-3.81938-10.21360I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.672703$ $a = 0.594910$ $b = 0.364438$	0.897326	11.7850
$u = -1.308700 + 0.269045I$ $a = 1.56537 - 0.53093I$ $b = -1.22861 + 0.80896I$	$-3.73127 + 6.12115I$	0
$u = -1.308700 - 0.269045I$ $a = 1.56537 + 0.53093I$ $b = -1.22861 - 0.80896I$	$-3.73127 - 6.12115I$	0
$u = 1.200190 + 0.591386I$ $a = 0.07576 - 2.17871I$ $b = -1.49919 + 0.91542I$	$-6.0747 + 15.5375I$	0
$u = 1.200190 - 0.591386I$ $a = 0.07576 + 2.17871I$ $b = -1.49919 - 0.91542I$	$-6.0747 - 15.5375I$	0
$u = 0.239015 + 0.578600I$ $a = -1.11598 - 0.91670I$ $b = -0.030929 + 1.252910I$	$-4.82432 - 2.73548I$	$2.51992 + 2.65110I$
$u = 0.239015 - 0.578600I$ $a = -1.11598 + 0.91670I$ $b = -0.030929 - 1.252910I$	$-4.82432 + 2.73548I$	$2.51992 - 2.65110I$
$u = 0.050548 + 0.602586I$ $a = 0.600496 - 0.272362I$ $b = 0.372734 + 0.903682I$	$1.29638 + 0.88850I$	$7.35607 - 3.92879I$
$u = 0.050548 - 0.602586I$ $a = 0.600496 + 0.272362I$ $b = 0.372734 - 0.903682I$	$1.29638 - 0.88850I$	$7.35607 + 3.92879I$
$u = 0.439192 + 0.410436I$ $a = 0.52086 + 2.20161I$ $b = 0.583399 - 1.272770I$	$-5.37037 + 2.23689I$	$0.95673 - 4.12499I$

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$0.439192 - 0.410436I$		
$a =$	$0.52086 - 2.20161I$	$-5.37037 - 2.23689I$	$0.95673 + 4.12499I$
$b =$	$0.583399 + 1.272770I$		

II. $\boldsymbol{I_2^u = \langle -2a^3 - 3a^2 + 5b - 10a - 7,\ a^4 + 2a^3 + 7a^2 + 6a + 3,\ u - 1\rangle}$

(i) Arc colorings

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

$$a_{12} = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

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

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

$$a_4 = \begin{pmatrix} a \\ \frac{2}{5}a^3 + \frac{3}{5}a^2 + 2a + \frac{7}{5} \end{pmatrix}$$

$$a_3 = \begin{pmatrix} \frac{2}{5}a^3 + \frac{3}{5}a^2 + 3a + \frac{7}{5} \\ \frac{2}{5}a^3 + \frac{3}{5}a^2 + 2a + \frac{7}{5} \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{1}{5}a^3 - \frac{1}{5}a^2 + a + \frac{1}{5} \\ \frac{2}{5}a^3 + \frac{3}{5}a^2 + 2a + \frac{2}{5} \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -a \\ -\frac{2}{5}a^3 - \frac{3}{5}a^2 - 2a - \frac{7}{5} \end{pmatrix}$$

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

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

$$a_5 = \begin{pmatrix} \frac{2}{5}a^3 + \frac{3}{5}a^2 + 2a + \frac{7}{5} \\ -\frac{4}{5}a^3 - \frac{6}{5}a^2 - 5a - \frac{14}{5} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} \frac{1}{5}a^3 - \frac{1}{5}a^2 + a + \frac{1}{5} \\ -\frac{1}{5}a^3 + \frac{1}{5}a^2 - a + \frac{9}{5} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{8}{5}a^3 + \frac{12}{5}a^2 + 8a + \frac{48}{5}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -0.500000 + 0.548188I$ $b = 0.500000 + 0.866025I$	$-3.28987 - 2.02988I$	$6.00000 + 3.46410I$
$u = 1.00000$ $a = -0.500000 - 0.548188I$ $b = 0.500000 - 0.866025I$	$-3.28987 + 2.02988I$	$6.00000 - 3.46410I$
$u = 1.00000$ $a = -0.50000 + 2.28024I$ $b = 0.500000 - 0.866025I$	$-3.28987 + 2.02988I$	$6.00000 - 3.46410I$
$u = 1.00000$ $a = -0.50000 - 2.28024I$ $b = 0.500000 + 0.866025I$	$-3.28987 - 2.02988I$	$6.00000 + 3.46410I$

III. $\boldsymbol{I^u_3 = \langle b + a,\ a^2 - a + 1,\ u + 1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} a \\ -a \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0 \\ -a \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -1 \\ -a + 1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} a \\ -a \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} a \\ -a \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4a + 10$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = 0.500000 + 0.866025I$ $b = -0.500000 - 0.866025I$	$1.64493 - 2.02988I$	$12.00000 + 3.46410I$
$u = -1.00000$ $a = 0.500000 - 0.866025I$ $b = -0.500000 + 0.866025I$	$1.64493 + 2.02988I$	$12.00000 - 3.46410I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2-u+1)^3)(u^{81}+38u^{80}+\cdots+43u-9)$
c_2	$((u^2-u+1)^2)(u^2+u+1)(u^{81}-2u^{80}+\cdots+11u-3)$
c_3	$(u^2-u+1)(u^2+u+1)^2(u^{81}+2u^{80}+\cdots-1897u-1443)$
c_4, c_5, c_9 c_{10}	$u^2(u^2+2)^2(u^{81}-u^{80}+\cdots+16u-4)$
c_6	$(u^2-u+1)(u^2+u+1)^2(u^{81}-2u^{80}+\cdots+11u-3)$
c_7	$((u-1)^4)(u+1)^2(u^{81}-3u^{80}+\cdots+10u-3)$
c_8	$u^6(u^{81}-15u^{80}+\cdots-2304u-2304)$
c_{11}	$((u+1)^6)(u^{81}-43u^{80}+\cdots+64u-9)$
c_{12}	$((u-1)^2)(u+1)^4(u^{81}-3u^{80}+\cdots+10u-3)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^2+y+1)^3)(y^{81}+14y^{80}+\cdots+6115y-81)$
c_2, c_6	$((y^2+y+1)^3)(y^{81}+38y^{80}+\cdots+43y-9)$
c_3	$((y^2+y+1)^3)(y^{81}-10y^{80}+\cdots+8.86981\times 10^7 y-2082249)$
c_4, c_5, c_9 c_{10}	$y^2(y+2)^4(y^{81}+91y^{80}+\cdots-320y-16)$
c_7, c_{12}	$((y-1)^6)(y^{81}-43y^{80}+\cdots+64y-9)$
c_8	$y^6(y^{81}+31y^{80}+\cdots+1.29466\times 10^8 y-5308416)$
c_{11}	$((y-1)^6)(y^{81}-3y^{80}+\cdots-116y-81)$