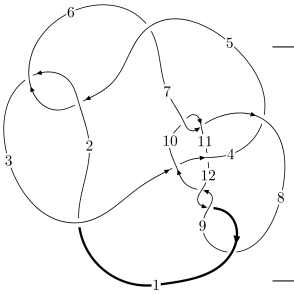
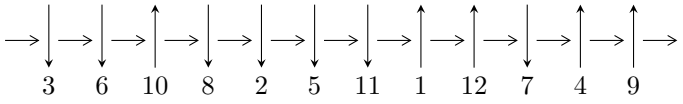
$12a_{0429}$ $(K12a_{0429})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & -2.05234 \times 10^{155} u^{99} + 7.99874 \times 10^{155} u^{98} + \cdots + 1.26559 \times 10^{156} b - 4.31298 \times 10^{155}, \\ & - 6.46036 \times 10^{154} u^{99} + 2.42368 \times 10^{155} u^{98} + \cdots + 4.21862 \times 10^{155} a - 2.87887 \times 10^{155}, \\ & u^{100} - 4u^{99} + \cdots - 2u + 2 \rangle \\ I_2^u = \langle & 9b^3 + 6b^2 u + 3b^2 - 6b - 2u - 1,\ a,\ u^2 + u + 1 \rangle \\ I_3^u = \langle & b + 1,\ 2a + u,\ u^2 + 2 \rangle \end{aligned}$$

$$I_1^v = \langle a,\ b - 1,\ v - 1 \rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 109 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. $\boldsymbol{I_1^u = \langle -2.05 \times 10^{155} u^{99} + 8.00 \times 10^{155} u^{98} + \cdots + 1.27 \times 10^{156} b - 4.31 \times 10^{155},\ -6.46 \times 10^{154} u^{99} + 2.42 \times 10^{155} u^{98} + \cdots + 4.22 \times 10^{155} a - 2.88 \times 10^{155},\ u^{100} - 4u^{99} + \cdots - 2u + 2 \rangle}$

(i) Arc colorings

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_1 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.153139u^{99} - 0.574519u^{98} + \cdots - 8.03232u + 0.682420 \\ 0.162165u^{99} - 0.632019u^{98} + \cdots - 5.73442u + 0.340789 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.0302022u^{99} + 0.163017u^{98} + \cdots - 2.06770u + 0.417704 \\ 0.179404u^{99} - 0.709755u^{98} + \cdots - 6.10945u + 0.349133 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.173099u^{99} + 0.676163u^{98} + \cdots + 4.89191u + 0.906950 \\ 0.0182730u^{99} - 0.0469571u^{98} + \cdots + 4.00425u - 1.14662 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} 0.0703189u^{99} - 0.177839u^{98} + \cdots - 1.91494u + 0.223572 \\ 0.202770u^{99} - 0.766671u^{98} + \cdots - 5.41230u + 0.265518 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.0494285u^{99} - 0.0313702u^{98} + \cdots + 1.20145u + 0.366829 \\ 0.00688276u^{99} + 0.0220776u^{98} + \cdots - 2.07197u + 0.512273 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.0425457u^{99} - 0.0534478u^{98} + \cdots + 3.27342u - 0.145444 \\ -0.00688276u^{99} - 0.0220776u^{98} + \cdots + 2.07197u - 0.512273 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.138863u^{99} - 0.465578u^{98} + \cdots - 1.24267u - 0.857682 \\ -0.0184998u^{99} + 0.0344608u^{98} + \cdots - 0.833055u + 0.461735 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 1.15224u^{99} - 4.78283u^{98} + \cdots - 86.7199u + 10.7919$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{100} + 34u^{99} + \cdots + 925u + 81$
c_2, c_5	$u^{100} + 6u^{99} + \cdots + 59u + 9$
c_3	$27(27u^{100} - 234u^{99} + \cdots - 3357967u - 461099)$
c_4	$27(27u^{100} + 45u^{99} + \cdots - 4549965u + 518603)$
c_7, c_{10}	$u^{100} + 5u^{99} + \cdots - 38u - 3$
c_8, c_9, c_{12}	$u^{100} + 4u^{99} + \cdots + 2u + 2$
c_{11}	$u^{100} - 4u^{99} + \cdots - 12960u - 5184$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{100} + 70y^{99} + \cdots - 377077y + 6561$
c_2, c_5	$y^{100} - 34y^{99} + \cdots - 925y + 81$
c_3	729 $\cdot (729y^{100} + 11502y^{99} + \cdots - 1559280610721y + 212612287801)$
c_4	729 $\cdot (729y^{100} - 27135y^{99} + \cdots - 3345262023807y + 268949071609)$
c_7, c_{10}	$y^{100} - 53y^{99} + \cdots - 658y + 9$
c_8, c_9, c_{12}	$y^{100} + 94y^{99} + \cdots - 60y + 4$
c_{11}	$y^{100} + 32y^{99} + \cdots + 414305280y + 26873856$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.679869 + 0.748107I$ $a = -0.295432 - 1.043560I$ $b = -0.528057 - 0.396540I$	$0.57702 - 2.41824I$	0
$u = 0.679869 - 0.748107I$ $a = -0.295432 + 1.043560I$ $b = -0.528057 + 0.396540I$	$0.57702 + 2.41824I$	0
$u = -0.936181 + 0.398524I$ $a = -0.806021 + 0.540723I$ $b = -0.497698 - 0.087674I$	$3.87531 - 7.09723I$	0
$u = -0.936181 - 0.398524I$ $a = -0.806021 - 0.540723I$ $b = -0.497698 + 0.087674I$	$3.87531 + 7.09723I$	0
$u = -0.344981 + 0.919122I$ $a = -0.224263 - 0.488787I$ $b = -0.173178 - 0.412785I$	$-0.77026 - 2.23336I$	0
$u = -0.344981 - 0.919122I$ $a = -0.224263 + 0.488787I$ $b = -0.173178 + 0.412785I$	$-0.77026 + 2.23336I$	0
$u = 0.849871 + 0.454924I$ $a = 1.30719 + 0.64935I$ $b = 0.877707 - 0.222614I$	$0.55952 + 13.49860I$	0
$u = 0.849871 - 0.454924I$ $a = 1.30719 - 0.64935I$ $b = 0.877707 + 0.222614I$	$0.55952 - 13.49860I$	0
$u = -0.898112 + 0.334651I$ $a = 0.868301 - 0.554620I$ $b = 0.482624 + 0.101398I$	$4.50393 - 1.41421I$	0
$u = -0.898112 - 0.334651I$ $a = 0.868301 + 0.554620I$ $b = 0.482624 - 0.101398I$	$4.50393 + 1.41421I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.732409+0.617249I$ $a=-0.681387+0.294463I$ $b=-0.437220-0.022316I$	$-1.18132-2.64358I$	0
$u=-0.732409-0.617249I$ $a=-0.681387-0.294463I$ $b=-0.437220+0.022316I$	$-1.18132+2.64358I$	0
$u=0.758120+0.731071I$ $a=0.266524+1.044920I$ $b=0.488342+0.372478I$	$-0.23831-8.08349I$	0
$u=0.758120-0.731071I$ $a=0.266524-1.044920I$ $b=0.488342-0.372478I$	$-0.23831+8.08349I$	0
$u=0.820796+0.415357I$ $a=-1.33445-0.70691I$ $b=-0.838028+0.244297I$	$1.56962+7.53478I$	0
$u=0.820796-0.415357I$ $a=-1.33445+0.70691I$ $b=-0.838028-0.244297I$	$1.56962-7.53478I$	0
$u=0.739811+0.488405I$ $a=0.236103+1.139040I$ $b=0.383295+0.485386I$	$-5.36950-2.86567I$	0
$u=0.739811-0.488405I$ $a=0.236103-1.139040I$ $b=0.383295-0.485386I$	$-5.36950+2.86567I$	0
$u=0.685574+0.521881I$ $a=1.54529+0.54023I$ $b=0.773480-0.091899I$	$-5.53789+7.57635I$	0
$u=0.685574-0.521881I$ $a=1.54529-0.54023I$ $b=0.773480+0.091899I$	$-5.53789-7.57635I$	0

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.773853+0.126658I$		
$a=$	$0.073723+1.239840I$	$-2.85478+2.28442I$	0
$b=$	$0.112212+0.588993I$		
$u=$	$0.773853-0.126658I$		
$a=$	$0.073723-1.239840I$	$-2.85478-2.28442I$	0
$b=$	$0.112212-0.588993I$		
$u=$	$-0.742950+0.971442I$		
$a=$	$-0.379885+0.450207I$	$2.25943+1.26483I$	0
$b=$	$-0.443297+0.208112I$		
$u=$	$-0.742950-0.971442I$		
$a=$	$-0.379885-0.450207I$	$2.25943-1.26483I$	0
$b=$	$-0.443297-0.208112I$		
$u=$	$0.021499+1.227650I$		
$a=$	$-0.999611-0.389930I$	$0.82547-1.32524I$	0
$b=$	$-2.86921-0.22184I$		
$u=$	$0.021499-1.227650I$		
$a=$	$-0.999611+0.389930I$	$0.82547+1.32524I$	0
$b=$	$-2.86921+0.22184I$		
$u=$	$-0.682650+1.028010I$		
$a=$	$0.314081-0.478465I$	$2.53530-4.11578I$	0
$b=$	$0.411579-0.285935I$		
$u=$	$-0.682650-1.028010I$		
$a=$	$0.314081+0.478465I$	$2.53530+4.11578I$	0
$b=$	$0.411579+0.285935I$		
$u=$	$0.089185+1.254450I$		
$a=$	$1.090420+0.281507I$	$0.54484+5.05920I$	0
$b=$	$3.13638+0.17745I$		
$u=$	$0.089185-1.254450I$		
$a=$	$1.090420-0.281507I$	$0.54484-5.05920I$	0
$b=$	$3.13638-0.17745I$		

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ 0.129409 + 1.287930I$ $a = -0.441936 - 0.858037I$ $b = -1.209260 - 0.582559I$	$0.097636 - 0.577860I$	0
$u = \ 0.129409 - 1.287930I$ $a = -0.441936 + 0.858037I$ $b = -1.209260 + 0.582559I$	$0.097636 + 0.577860I$	0
$u = \ 0.591401 + 0.372296I$ $a = -1.78322 - 0.87172I$ $b = -0.608394 + 0.173490I$	$-1.51260 + 4.59124I$	$-1.18190 - 7.08838I$
$u = \ 0.591401 - 0.372296I$ $a = -1.78322 + 0.87172I$ $b = -0.608394 - 0.173490I$	$-1.51260 - 4.59124I$	$-1.18190 + 7.08838I$
$u = -0.188206 + 1.312440I$ $a = -0.000149 - 1.118010I$ $b = \ 0.03449 - 1.53600I$	$-1.31735 - 3.54814I$	0
$u = -0.188206 - 1.312440I$ $a = -0.000149 + 1.118010I$ $b = \ 0.03449 + 1.53600I$	$-1.31735 + 3.54814I$	0
$u = -0.049713 + 1.345270I$ $a = \ 0.51133 + 1.49541I$ $b = \ 1.17296 + 2.41695I$	$-7.10395 - 1.14182I$	0
$u = -0.049713 - 1.345270I$ $a = \ 0.51133 - 1.49541I$ $b = \ 1.17296 - 2.41695I$	$-7.10395 + 1.14182I$	0
$u = \ 0.136745 + 1.361250I$ $a = \ 0.439945 + 0.800424I$ $b = \ 1.351600 + 0.407360I$	$-0.81482 + 5.24891I$	0
$u = \ 0.136745 - 1.361250I$ $a = \ 0.439945 - 0.800424I$ $b = \ 1.351600 - 0.407360I$	$-0.81482 - 5.24891I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.277514 + 1.363830I$ $a = 0.760070 - 0.073241I$ $b = 1.46420 + 0.87101I$	$-6.81470 + 1.22350I$	0
$u = 0.277514 - 1.363830I$ $a = 0.760070 + 0.073241I$ $b = 1.46420 - 0.87101I$	$-6.81470 - 1.22350I$	0
$u = -0.089485 + 1.389530I$ $a = 0.090696 - 0.485921I$ $b = -0.94839 + 2.04503I$	$-4.19619 + 2.34737I$	0
$u = -0.089485 - 1.389530I$ $a = 0.090696 + 0.485921I$ $b = -0.94839 - 2.04503I$	$-4.19619 - 2.34737I$	0
$u = -0.548947 + 0.259031I$ $a = -1.30165 - 1.81150I$ $b = -0.262516 + 0.230241I$	$2.18117 - 6.47618I$	$-0.36986 + 8.71363I$
$u = -0.548947 - 0.259031I$ $a = -1.30165 + 1.81150I$ $b = -0.262516 - 0.230241I$	$2.18117 + 6.47618I$	$-0.36986 - 8.71363I$
$u = -0.583366 + 0.156368I$ $a = 1.51729 + 1.42250I$ $b = 0.302065 - 0.186011I$	$3.23926 - 0.72911I$	$2.75290 + 2.73531I$
$u = -0.583366 - 0.156368I$ $a = 1.51729 - 1.42250I$ $b = 0.302065 + 0.186011I$	$3.23926 + 0.72911I$	$2.75290 - 2.73531I$
$u = -0.188664 + 1.389350I$ $a = -0.177107 + 1.219500I$ $b = -0.42888 + 1.77705I$	$-3.06032 - 9.15441I$	0
$u = -0.188664 - 1.389350I$ $a = -0.177107 - 1.219500I$ $b = -0.42888 - 1.77705I$	$-3.06032 + 9.15441I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.526193+0.244659I$ $a=1.331340-0.219705I$ $b=0.414062+0.073402I$	$1.090210-0.801985I$	$5.31856+2.50411I$
$u=-0.526193-0.244659I$ $a=1.331340+0.219705I$ $b=0.414062-0.073402I$	$1.090210+0.801985I$	$5.31856-2.50411I$
$u=0.406757+0.405711I$ $a=-0.429280-1.280950I$ $b=-0.568191-0.723482I$	$-1.89883-1.20494I$	$-2.45244-0.57004I$
$u=0.406757-0.405711I$ $a=-0.429280+1.280950I$ $b=-0.568191+0.723482I$	$-1.89883+1.20494I$	$-2.45244+0.57004I$
$u=-0.17361+1.42113I$ $a=-0.773205-0.392754I$ $b=-2.26968-0.26907I$	$-4.31361-3.27424I$	0
$u=-0.17361-1.42113I$ $a=-0.773205+0.392754I$ $b=-2.26968+0.26907I$	$-4.31361+3.27424I$	0
$u=-0.08217+1.43290I$ $a=0.012161+0.479575I$ $b=1.47788-1.81226I$	$-4.33040-2.95362I$	0
$u=-0.08217-1.43290I$ $a=0.012161-0.479575I$ $b=1.47788+1.81226I$	$-4.33040+2.95362I$	0
$u=0.369359+0.423465I$ $a=2.63371+0.41174I$ $b=0.439230+0.012251I$	$-4.52529+0.64236I$	$-8.88416-5.33505I$
$u=0.369359-0.423465I$ $a=2.63371-0.41174I$ $b=0.439230-0.012251I$	$-4.52529-0.64236I$	$-8.88416+5.33505I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.04013 + 1.43787I$ $a = 0.368603 + 0.074688I$ $b = 3.17675 + 1.32808I$	$-7.42832 + 0.17125I$	0
$u = 0.04013 - 1.43787I$ $a = 0.368603 - 0.074688I$ $b = 3.17675 - 1.32808I$	$-7.42832 - 0.17125I$	0
$u = 0.34785 + 1.41208I$ $a = -0.798393 + 0.009874I$ $b = -1.51058 - 0.70211I$	$-7.81342 + 6.46103I$	0
$u = 0.34785 - 1.41208I$ $a = -0.798393 - 0.009874I$ $b = -1.51058 + 0.70211I$	$-7.81342 - 6.46103I$	0
$u = 0.15166 + 1.45394I$ $a = -1.341240 + 0.389661I$ $b = -3.44448 + 0.51105I$	$-10.59050 + 2.67643I$	0
$u = 0.15166 - 1.45394I$ $a = -1.341240 - 0.389661I$ $b = -3.44448 - 0.51105I$	$-10.59050 - 2.67643I$	0
$u = 0.21401 + 1.44731I$ $a = 1.165350 - 0.332979I$ $b = 3.24423 - 0.33629I$	$-7.38327 + 7.53531I$	0
$u = 0.21401 - 1.44731I$ $a = 1.165350 + 0.332979I$ $b = 3.24423 + 0.33629I$	$-7.38327 - 7.53531I$	0
$u = -0.04327 + 1.46569I$ $a = 0.612952 + 0.425075I$ $b = 2.22983 + 0.27823I$	$-7.08799 + 0.13600I$	0
$u = -0.04327 - 1.46569I$ $a = 0.612952 - 0.425075I$ $b = 2.22983 - 0.27823I$	$-7.08799 - 0.13600I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.514435 + 0.029790I$ $a = -0.62541 + 1.82321I$ $b = -0.248771 - 0.638119I$	$4.13023 - 2.87256I$	$2.80596 + 5.41221I$
$u = 0.514435 - 0.029790I$ $a = -0.62541 - 1.82321I$ $b = -0.248771 + 0.638119I$	$4.13023 + 2.87256I$	$2.80596 - 5.41221I$
$u = -0.189126 + 0.472524I$ $a = -1.170830 - 0.682908I$ $b = -1.90042 - 0.09678I$	$1.62783 - 1.86935I$	$-4.71859 + 9.09029I$
$u = -0.189126 - 0.472524I$ $a = -1.170830 + 0.682908I$ $b = -1.90042 + 0.09678I$	$1.62783 + 1.86935I$	$-4.71859 - 9.09029I$
$u = -0.33202 + 1.46447I$ $a = -0.812027 - 0.326676I$ $b = -2.22023 - 0.19560I$	$-1.27736 - 5.80994I$	0
$u = -0.33202 - 1.46447I$ $a = -0.812027 + 0.326676I$ $b = -2.22023 + 0.19560I$	$-1.27736 + 5.80994I$	0
$u = -0.282682 + 0.397129I$ $a = 1.30656 + 0.57839I$ $b = 2.05135 + 0.16180I$	$1.30774 + 3.73013I$	$-2.74021 + 5.37610I$
$u = -0.282682 - 0.397129I$ $a = 1.30656 - 0.57839I$ $b = 2.05135 - 0.16180I$	$1.30774 - 3.73013I$	$-2.74021 - 5.37610I$
$u = 0.30445 + 1.48923I$ $a = 0.995764 - 0.381668I$ $b = 3.00560 - 0.23025I$	$-4.57444 + 11.61720I$	0
$u = 0.30445 - 1.48923I$ $a = 0.995764 + 0.381668I$ $b = 3.00560 + 0.23025I$	$-4.57444 - 11.61720I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.464839 + 0.113252I$ $a = 0.27220 - 1.70926I$ $b = 0.123712 + 0.765459I$	$3.88141 + 3.13960I$	$1.64371 - 0.37863I$
$u = 0.464839 - 0.113252I$ $a = 0.27220 + 1.70926I$ $b = 0.123712 - 0.765459I$	$3.88141 - 3.13960I$	$1.64371 + 0.37863I$
$u = 0.23746 + 1.50791I$ $a = -1.085810 + 0.439549I$ $b = -3.05401 + 0.40388I$	$-12.1325 + 10.9448I$	0
$u = 0.23746 - 1.50791I$ $a = -1.085810 - 0.439549I$ $b = -3.05401 - 0.40388I$	$-12.1325 - 10.9448I$	0
$u = 0.08480 + 1.53234I$ $a = 0.596803 + 0.147459I$ $b = 2.21447 + 0.68075I$	$-7.40992 - 0.00114I$	0
$u = 0.08480 - 1.53234I$ $a = 0.596803 - 0.147459I$ $b = 2.21447 - 0.68075I$	$-7.40992 + 0.00114I$	0
$u = -0.22585 + 1.52169I$ $a = 0.765917 + 0.329597I$ $b = 2.21047 + 0.25037I$	$-8.11266 - 6.00339I$	0
$u = -0.22585 - 1.52169I$ $a = 0.765917 - 0.329597I$ $b = 2.21047 - 0.25037I$	$-8.11266 + 6.00339I$	0
$u = -0.34530 + 1.50016I$ $a = 0.808150 + 0.315217I$ $b = 2.20445 + 0.19663I$	$-2.24324 - 11.70050I$	0
$u = -0.34530 - 1.50016I$ $a = 0.808150 - 0.315217I$ $b = 2.20445 - 0.19663I$	$-2.24324 + 11.70050I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.31293 + 1.51066I$ $a = -0.979232 + 0.406327I$ $b = -2.95400 + 0.23722I$	$-5.7917 + 17.7278I$	0
$u = \quad 0.31293 - 1.51066I$ $a = -0.979232 - 0.406327I$ $b = -2.95400 - 0.23722I$	$-5.7917 - 17.7278I$	0
$u = \quad 0.24997 + 1.52779I$ $a = -0.716417 - 0.060866I$ $b = -1.78953 - 0.69898I$	$-11.99200 + 0.79354I$	0
$u = \quad 0.24997 - 1.52779I$ $a = -0.716417 + 0.060866I$ $b = -1.78953 + 0.69898I$	$-11.99200 - 0.79354I$	0
$u = \quad 0.13806 + 1.60905I$ $a = -0.679385 - 0.144169I$ $b = -2.01284 - 0.57418I$	$-8.37514 - 4.86967I$	0
$u = \quad 0.13806 - 1.60905I$ $a = -0.679385 + 0.144169I$ $b = -2.01284 + 0.57418I$	$-8.37514 + 4.86967I$	0
$u = -0.313657$ $a = -5.14324$ $b = -0.161887$	-2.86791	11.2900
$u = \quad 0.054224 + 0.273579I$ $a = -1.10118 - 1.39810I$ $b = -0.515038 + 0.369932I$	$-1.295400 + 0.319885I$	$-8.06448 + 0.00737I$
$u = \quad 0.054224 - 0.273579I$ $a = -1.10118 + 1.39810I$ $b = -0.515038 - 0.369932I$	$-1.295400 - 0.319885I$	$-8.06448 - 0.00737I$
$u = -0.203756$ $a = \quad 2.23736$ $b = \quad 2.72642$	-3.01291	42.4150

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

(i) Arc colorings

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} 1 \\ u+1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u \\ u \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -b \\ -bu \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -2b^2u - b^2 + u \\ b^2u + 2b^2 + u \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} bu + b \\ 2b \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 17b^2u + 30b^2 + 11bu + b - 5u - 15$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^3-u^2+2u-1)^2$
c_2	$(u^3+u^2-1)^2$
c_3	$27(27u^6-27u^4+6u^2+1)$
c_4	$27(27u^6-27u^5+27u^4-18u^3+15u^2-6u+1)$
c_5	$(u^3-u^2+1)^2$
c_6	$(u^3+u^2+2u+1)^2$
c_7, c_{12}	$(u^2-u+1)^3$
c_8, c_9, c_{10}	$(u^2+u+1)^3$
c_{11}	u^6

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$(y^3+3y^2+2y-1)^2$
c_2, c_5	$(y^3-y^2+2y-1)^2$
c_3	$729(27y^3-27y^2+6y+1)^2$
c_4	$729(729y^6+729y^5+567y^4+216y^3+63y^2-6y+1)$
c_7, c_8, c_9 c_{10}, c_{12}	$(y^2+y+1)^3$
c_{11}	y^6

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = 0$ $b = 0.754678 - 0.124176I$	$3.02413 - 4.85801I$	$-0.04017 + 7.54626I$
$u = -0.500000 + 0.866025I$ $a = 0$ $b = -0.754678 - 0.124176I$	$3.02413 + 0.79824I$	$1.23319 + 1.22705I$
$u = -0.500000 + 0.866025I$ $a = 0$ $b = -0.328997I$	$-1.11345 - 2.02988I$	$-11.69302 - 4.44318I$
$u = -0.500000 - 0.866025I$ $a = 0$ $b = 0.754678 + 0.124176I$	$3.02413 + 4.85801I$	$-0.04017 - 7.54626I$
$u = -0.500000 - 0.866025I$ $a = 0$ $b = -0.754678 + 0.124176I$	$3.02413 - 0.79824I$	$1.23319 - 1.22705I$
$u = -0.500000 - 0.866025I$ $a = 0$ $b = 0.328997I$	$-1.11345 + 2.02988I$	$-11.69302 + 4.44318I$

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

(i) Arc colorings

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -\frac{1}{2}u \\ -1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -\frac{3}{2}u+1 \\ -2u+1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -\frac{1}{2}u+1 \\ -u+1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -1 \\ -2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -\frac{3}{2}u+1 \\ -2u+1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} \frac{1}{2}u \\ u+1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} \frac{1}{2}u-1 \\ u-1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u \\ -u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5 c_6, c_7, c_{10} c_{11}	$(y-1)^2$
c_3, c_4	y^2+2y+9
c_8, c_9, c_{12}	$(y+2)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.414210I$ $a = -0.707107I$ $b = -1.00000$	-8.22467	-12.0000
$u = -1.414210I$ $a = 0.707107I$ $b = -1.00000$	-8.22467	-12.0000

IV. $I_1^v = \langle a,\ b-1,\ v-1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v =$ 1.00000		
$a =$ 0	-3.28987	-12.0000
$b =$ 1.00000		

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^3)(u^3-u^2+2u-1)^2(u^{100}+34u^{99}+\cdots+925u+81)$
c_2	$((u-1)^3)(u^3+u^2-1)^2(u^{100}+6u^{99}+\cdots+59u+9)$
c_3	$729(u+1)(u^2-2u+3)(27u^6-27u^4+6u^2+1)$ $\cdot(27u^{100}-234u^{99}+\cdots-3357967u-461099)$
c_4	$729(u+1)(u^2+2u+3)(27u^6-27u^5+\cdots-6u+1)$ $\cdot(27u^{100}+45u^{99}+\cdots-4549965u+518603)$
c_5	$((u+1)^3)(u^3-u^2+1)^2(u^{100}+6u^{99}+\cdots+59u+9)$
c_6	$((u+1)^3)(u^3+u^2+2u+1)^2(u^{100}+34u^{99}+\cdots+925u+81)$
c_7	$(u-1)(u+1)^2(u^2-u+1)^3(u^{100}+5u^{99}+\cdots-38u-3)$
c_8, c_9	$u(u^2+2)(u^2+u+1)^3(u^{100}+4u^{99}+\cdots+2u+2)$
c_{10}	$((u-1)^2)(u+1)(u^2+u+1)^3(u^{100}+5u^{99}+\cdots-38u-3)$
c_{11}	$u^6(u-1)(u+1)^2(u^{100}-4u^{99}+\cdots-12960u-5184)$
c_{12}	$u(u^2+2)(u^2-u+1)^3(u^{100}+4u^{99}+\cdots+2u+2)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_6	$((y-1)^3)(y^3+3y^2+2y-1)^2(y^{100}+70y^{99}+\cdots-377077y+6561)$
c_2, c_5	$((y-1)^3)(y^3-y^2+2y-1)^2(y^{100}-34y^{99}+\cdots-925y+81)$
c_3	$531441(y-1)(y^2+2y+9)(27y^3-27y^2+6y+1)^2$ $\cdot(729y^{100}+11502y^{99}+\cdots-1559280610721y+212612287801)$
c_4	$531441(y-1)(y^2+2y+9)$ $\cdot(729y^6+729y^5+567y^4+216y^3+63y^2-6y+1)$ $\cdot(729y^{100}-27135y^{99}+\cdots-3345262023807y+268949071609)$
c_7, c_{10}	$((y-1)^3)(y^2+y+1)^3(y^{100}-53y^{99}+\cdots-658y+9)$
c_8, c_9, c_{12}	$y(y+2)^2(y^2+y+1)^3(y^{100}+94y^{99}+\cdots-60y+4)$
c_{11}	$y^6(y-1)^3(y^{100}+32y^{99}+\cdots+4.14305\times10^8y+2.68739\times10^7)$