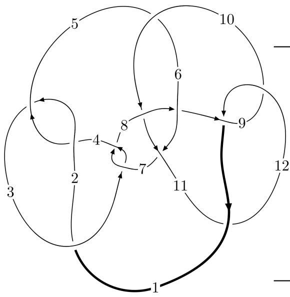
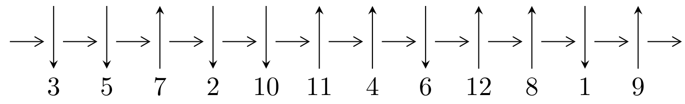
$12a_{0060}$ ($K12a_{0060}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 2.82224 \times 10^{566} u^{139} + 1.76219 \times 10^{566} u^{138} + \cdots + 1.62257 \times 10^{567} b + 7.22892 \times 10^{569}, \\ & 1.07751 \times 10^{567} u^{139} + 6.57014 \times 10^{566} u^{138} + \cdots + 1.62257 \times 10^{567} a + 2.82386 \times 10^{570}, \\ & u^{140} + u^{139} + \cdots + 8192u + 1024 \rangle \end{aligned}$$

$$\begin{aligned} I_1^v &= \langle a,\ 4v^3 - 6v^2 + b + 25v - 8,\ v^4 - 2v^3 + 7v^2 - 5v + 1 \rangle \\ I_2^v &= \langle a,\ 50v^5 + 61v^4 + 196v^3 + 119v^2 + 67b + 390v + 59,\ v^6 + v^5 + 4v^4 + 2v^3 + 8v^2 + 1 \rangle \end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 150 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. $\boldsymbol{I^u_1 = \langle 2.82 \times 10^{566} u^{139} + 1.76 \times 10^{566} u^{138} + \cdots + 1.62 \times 10^{567} b + 7.23 \times 10^{569},\ 1.08 \times 10^{567} u^{139} + 6.57 \times 10^{566} u^{138} + \cdots + 1.62 \times 10^{567} a + 2.82 \times 10^{570},\ u^{140} + u^{139} + \cdots + 8192u + 1024 \rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.664076u^{139} - 0.404921u^{138} + \cdots - 9478.56u - 1740.36 \\ -0.173936u^{139} - 0.108605u^{138} + \cdots - 2458.67u - 445.522 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.599073u^{139} - 0.372142u^{138} + \cdots - 8619.84u - 1591.58 \\ -0.0565797u^{139} - 0.0188547u^{138} + \cdots - 546.416u - 86.8817 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.235557u^{139} + 0.145522u^{138} + \cdots + 3360.46u + 608.447 \\ 0.204961u^{139} + 0.119227u^{138} + \cdots + 2804.73u + 505.380 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.729961u^{139} - 0.437305u^{138} + \cdots - 10338.5u - 1897.61 \\ -0.219084u^{139} - 0.134689u^{138} + \cdots - 3111.68u - 568.463 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.00229243u^{139} - 0.00688234u^{138} + \cdots - 119.334u - 22.0563 \\ 0.0224336u^{139} + 0.00780471u^{138} + \cdots + 256.104u + 43.2884 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.00229243u^{139} - 0.00688234u^{138} + \cdots - 119.334u - 22.0563 \\ -0.0265260u^{139} - 0.0110130u^{138} + \cdots - 296.052u - 47.9885 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.0288184u^{139} - 0.0178953u^{138} + \cdots - 415.385u - 70.0448 \\ -0.0265260u^{139} - 0.0110130u^{138} + \cdots - 296.052u - 47.9885 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.459995u^{139} - 0.286124u^{138} + \cdots - 6634.61u - 1213.55 \\ -0.193301u^{139} - 0.112910u^{138} + \cdots - 2650.68u - 476.747 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 1.69069u^{139} + 1.00549u^{138} + \cdots + 23555.4u + 4256.25$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{140} + 69u^{139} + \cdots + 221u + 1$
c_2, c_4	$u^{140} - 11u^{139} + \cdots - 5u + 1$
c_3, c_7	$u^{140} - u^{139} + \cdots - 8192u + 1024$
c_5	$u^{140} + 2u^{139} + \cdots - 10624u + 1216$
c_6	$u^{140} - 2u^{139} + \cdots - 24012u + 5887$
c_8	$u^{140} - 10u^{139} + \cdots - 2u + 1$
c_9, c_{12}	$u^{140} + 2u^{139} + \cdots + 14u + 1$
c_{10}	$u^{140} + 14u^{139} + \cdots + 2u + 1$
c_{11}	$u^{140} + 58u^{139} + \cdots + 14u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{140} + 15y^{139} + \cdots - 2817y + 1$
c_2, c_4	$y^{140} - 69y^{139} + \cdots - 221y + 1$
c_3, c_7	$y^{140} - 63y^{139} + \cdots - 25690112y + 1048576$
c_5	$y^{140} + 150y^{139} + \cdots + 35716096y + 1478656$
c_6	$y^{140} + 142y^{139} + \cdots + 261556046y + 34656769$
c_8	$y^{140} + 14y^{139} + \cdots + 10y + 1$
c_9, c_{12}	$y^{140} + 58y^{139} + \cdots + 14y + 1$
c_{10}	$y^{140} + 10y^{139} + \cdots + 14y + 1$
c_{11}	$y^{140} + 50y^{139} + \cdots - 2010y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.000760 + 0.012534I$ $a = -0.306225 + 0.320226I$ $b = -1.40232 + 0.29598I$	$0.24476 - 4.35802I$	0
$u = 1.000760 - 0.012534I$ $a = -0.306225 - 0.320226I$ $b = -1.40232 - 0.29598I$	$0.24476 + 4.35802I$	0
$u = -0.836596 + 0.555007I$ $a = 1.006110 - 0.475231I$ $b = 2.42428 + 0.23434I$	$-6.69476 - 2.77249I$	0
$u = -0.836596 - 0.555007I$ $a = 1.006110 + 0.475231I$ $b = 2.42428 - 0.23434I$	$-6.69476 + 2.77249I$	0
$u = -0.421062 + 0.872083I$ $a = 0.206555 - 0.622102I$ $b = 2.25386 - 0.11399I$	$-1.36351 + 5.67921I$	0
$u = -0.421062 - 0.872083I$ $a = 0.206555 + 0.622102I$ $b = 2.25386 + 0.11399I$	$-1.36351 - 5.67921I$	0
$u = 0.189163 + 1.024150I$ $a = 0.531321 + 1.025970I$ $b = 0.786265 + 0.856529I$	$1.66936 - 3.03245I$	0
$u = 0.189163 - 1.024150I$ $a = 0.531321 - 1.025970I$ $b = 0.786265 - 0.856529I$	$1.66936 + 3.03245I$	0
$u = -0.797095 + 0.513895I$ $a = 0.215390 - 1.374710I$ $b = 0.997714 + 0.916821I$	$-6.83212 - 1.55059I$	0
$u = -0.797095 - 0.513895I$ $a = 0.215390 + 1.374710I$ $b = 0.997714 - 0.916821I$	$-6.83212 + 1.55059I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.682457 + 0.821355I$ $a = 0.276201 - 0.036517I$ $b = -0.249515 + 0.258948I$	$0.47320 - 1.54565I$	0
$u = -0.682457 - 0.821355I$ $a = 0.276201 + 0.036517I$ $b = -0.249515 - 0.258948I$	$0.47320 + 1.54565I$	0
$u = -0.992021 + 0.397301I$ $a = -1.195460 + 0.435861I$ $b = -1.70698 - 0.28925I$	$-0.77366 - 5.05718I$	0
$u = -0.992021 - 0.397301I$ $a = -1.195460 - 0.435861I$ $b = -1.70698 + 0.28925I$	$-0.77366 + 5.05718I$	0
$u = 0.357797 + 0.844946I$ $a = -0.364638 - 0.836942I$ $b = -0.852570 - 0.691242I$	$-1.82288 - 1.42035I$	0
$u = 0.357797 - 0.844946I$ $a = -0.364638 + 0.836942I$ $b = -0.852570 + 0.691242I$	$-1.82288 + 1.42035I$	0
$u = -1.002640 + 0.433199I$ $a = 0.191557 - 0.047478I$ $b = 1.55074 + 0.59070I$	$-0.811795 + 0.033701I$	0
$u = -1.002640 - 0.433199I$ $a = 0.191557 + 0.047478I$ $b = 1.55074 - 0.59070I$	$-0.811795 - 0.033701I$	0
$u = -0.575665 + 0.936495I$ $a = 0.395098 - 0.932422I$ $b = 1.249570 + 0.340721I$	$-6.19030 + 5.36695I$	0
$u = -0.575665 - 0.936495I$ $a = 0.395098 + 0.932422I$ $b = 1.249570 - 0.340721I$	$-6.19030 - 5.36695I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.068570 + 0.259692I$ $a = 0.56267 - 2.76229I$ $b = 1.49656 + 0.99735I$	$2.38264 + 1.08657I$	0
$u = -1.068570 - 0.259692I$ $a = 0.56267 + 2.76229I$ $b = 1.49656 - 0.99735I$	$2.38264 - 1.08657I$	0
$u = 0.798347 + 0.415330I$ $a = -0.679635 - 1.152670I$ $b = -0.486148 + 0.821596I$	$-2.17880 + 4.32767I$	0
$u = 0.798347 - 0.415330I$ $a = -0.679635 + 1.152670I$ $b = -0.486148 - 0.821596I$	$-2.17880 - 4.32767I$	0
$u = -0.299839 + 0.848133I$ $a = 0.150645 + 0.978113I$ $b = 0.744768 + 0.363732I$	$0.79500 + 3.33230I$	0
$u = -0.299839 - 0.848133I$ $a = 0.150645 - 0.978113I$ $b = 0.744768 - 0.363732I$	$0.79500 - 3.33230I$	0
$u = -1.047890 + 0.343169I$ $a = -0.88012 + 3.01481I$ $b = -2.29815 - 1.00177I$	$2.07851 - 3.32587I$	0
$u = -1.047890 - 0.343169I$ $a = -0.88012 - 3.01481I$ $b = -2.29815 + 1.00177I$	$2.07851 + 3.32587I$	0
$u = -0.866740 + 0.208182I$ $a = -0.58859 + 1.77401I$ $b = -1.389370 - 0.112852I$	$1.10254 + 1.14634I$	0
$u = -0.866740 - 0.208182I$ $a = -0.58859 - 1.77401I$ $b = -1.389370 + 0.112852I$	$1.10254 - 1.14634I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.650609 + 0.588985I$ $a = 0.354024 - 0.405783I$ $b = -0.1023010 + 0.0046218I$	$0.44265 - 1.56279I$	0
$u = -0.650609 - 0.588985I$ $a = 0.354024 + 0.405783I$ $b = -0.1023010 - 0.0046218I$	$0.44265 + 1.56279I$	0
$u = 0.661212 + 0.572663I$ $a = 0.921225 + 0.672046I$ $b = 0.279894 - 0.814023I$	$-4.97493 + 8.44093I$	0
$u = 0.661212 - 0.572663I$ $a = 0.921225 - 0.672046I$ $b = 0.279894 + 0.814023I$	$-4.97493 - 8.44093I$	0
$u = 1.114470 + 0.173765I$ $a = -0.712327 + 0.632019I$ $b = -0.397554 - 1.170360I$	$3.91294 - 3.33139I$	0
$u = 1.114470 - 0.173765I$ $a = -0.712327 - 0.632019I$ $b = -0.397554 + 1.170360I$	$3.91294 + 3.33139I$	0
$u = 0.286617 + 1.097040I$ $a = -0.578658 - 1.101670I$ $b = -1.32911 - 0.99991I$	$-0.05649 - 8.46319I$	0
$u = 0.286617 - 1.097040I$ $a = -0.578658 + 1.101670I$ $b = -1.32911 + 0.99991I$	$-0.05649 + 8.46319I$	0
$u = 0.427712 + 0.750160I$ $a = -0.704498 - 1.018660I$ $b = -1.081150 + 0.346220I$	$-3.82479 - 1.32683I$	0
$u = 0.427712 - 0.750160I$ $a = -0.704498 + 1.018660I$ $b = -1.081150 - 0.346220I$	$-3.82479 + 1.32683I$	0

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.435388+0.743385I$		
$a=$	$3.24340+2.10472I$	$-1.93443-3.19824I$	0
$b=$	$6.13829+0.59251I$		
$u=$	$0.435388-0.743385I$		
$a=$	$3.24340-2.10472I$	$-1.93443+3.19824I$	0
$b=$	$6.13829-0.59251I$		
$u=$	$1.018440+0.525386I$		
$a=$	$1.32268+1.57773I$	$-0.66742+3.20117I$	0
$b=$	$2.52977-1.33691I$		
$u=$	$1.018440-0.525386I$		
$a=$	$1.32268-1.57773I$	$-0.66742-3.20117I$	0
$b=$	$2.52977+1.33691I$		
$u=$	$-0.213477+0.816553I$		
$a=$	$0.173255+0.561079I$	$1.043390+0.077155I$	0
$b=$	$-1.064580-0.152324I$		
$u=$	$-0.213477-0.816553I$		
$a=$	$0.173255-0.561079I$	$1.043390-0.077155I$	0
$b=$	$-1.064580+0.152324I$		
$u=$	$-1.062380+0.456587I$		
$a=$	$1.228930-0.504376I$	$-2.70777-10.63070I$	0
$b=$	$1.68579+0.64955I$		
$u=$	$-1.062380-0.456587I$		
$a=$	$1.228930+0.504376I$	$-2.70777+10.63070I$	0
$b=$	$1.68579-0.64955I$		
$u=$	$-1.121250+0.296975I$		
$a=$	$1.149810-0.253365I$	$2.53463-1.34948I$	0
$b=$	$0.471235+0.734948I$		
$u=$	$-1.121250-0.296975I$		
$a=$	$1.149810+0.253365I$	$2.53463+1.34948I$	0
$b=$	$0.471235-0.734948I$		

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.150790 + 0.258089I$ $a = 0.554520 + 0.096579I$ $b = 1.03502 - 1.39865I$	$5.51111 - 0.29685I$	0
$u = 1.150790 - 0.258089I$ $a = 0.554520 - 0.096579I$ $b = 1.03502 + 1.39865I$	$5.51111 + 0.29685I$	0
$u = 1.112440 + 0.403471I$ $a = -0.580315 - 0.363099I$ $b = -0.98833 + 1.94189I$	$2.99181 + 5.97516I$	0
$u = 1.112440 - 0.403471I$ $a = -0.580315 + 0.363099I$ $b = -0.98833 - 1.94189I$	$2.99181 - 5.97516I$	0
$u = 1.145340 + 0.322180I$ $a = 0.799528 - 0.226577I$ $b = 0.887250 + 0.424942I$	$5.25058 + 3.26329I$	0
$u = 1.145340 - 0.322180I$ $a = 0.799528 + 0.226577I$ $b = 0.887250 - 0.424942I$	$5.25058 - 3.26329I$	0
$u = -0.502968 + 1.083090I$ $a = -0.332049 + 1.189060I$ $b = -1.45374 + 0.78148I$	$0.11630 + 7.78284I$	0
$u = -0.502968 - 1.083090I$ $a = -0.332049 - 1.189060I$ $b = -1.45374 - 0.78148I$	$0.11630 - 7.78284I$	0
$u = 0.651482 + 0.461118I$ $a = -0.659951 - 0.466565I$ $b = -1.082100 - 0.435986I$	$-2.43454 - 0.65211I$	0
$u = 0.651482 - 0.461118I$ $a = -0.659951 + 0.466565I$ $b = -1.082100 + 0.435986I$	$-2.43454 + 0.65211I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.073680 + 0.545137I$ $a = -0.835240 - 0.325325I$ $b = -1.83968 + 0.59135I$	$-1.88588 + 6.17613I$	0
$u = 1.073680 - 0.545137I$ $a = -0.835240 + 0.325325I$ $b = -1.83968 - 0.59135I$	$-1.88588 - 6.17613I$	0
$u = 0.329298 + 0.722391I$ $a = -2.66753 - 1.82474I$ $b = -5.11037 - 1.17767I$	$-1.66193 + 0.85450I$	0
$u = 0.329298 - 0.722391I$ $a = -2.66753 + 1.82474I$ $b = -5.11037 + 1.17767I$	$-1.66193 - 0.85450I$	0
$u = -1.116010 + 0.465367I$ $a = 0.632935 + 0.748697I$ $b = 0.011210 - 0.645952I$	$2.54912 - 1.64137I$	0
$u = -1.116010 - 0.465367I$ $a = 0.632935 - 0.748697I$ $b = 0.011210 + 0.645952I$	$2.54912 + 1.64137I$	0
$u = 0.182675 + 1.199720I$ $a = -0.515031 - 0.404484I$ $b = -1.067950 - 0.429971I$	$-1.95759 - 0.96618I$	0
$u = 0.182675 - 1.199720I$ $a = -0.515031 + 0.404484I$ $b = -1.067950 + 0.429971I$	$-1.95759 + 0.96618I$	0
$u = -0.704978 + 0.343098I$ $a = 0.02805 + 1.80042I$ $b = -0.796426 - 0.591122I$	$-1.78233 + 1.83282I$	0
$u = -0.704978 - 0.343098I$ $a = 0.02805 - 1.80042I$ $b = -0.796426 + 0.591122I$	$-1.78233 - 1.83282I$	0

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.505815+0.581629I$		
$a=$	$3.01807+1.77462I$	$-2.16722+1.22909I$	0
$b=$	$4.63447-0.19221I$		
$u=$	$0.505815-0.581629I$		
$a=$	$3.01807-1.77462I$	$-2.16722-1.22909I$	0
$b=$	$4.63447+0.19221I$		
$u=$	$1.112810+0.525316I$		
$a=$	$-0.61949-2.26822I$	$0.69005+3.86115I$	0
$b=$	$-2.68143+1.16589I$		
$u=$	$1.112810-0.525316I$		
$a=$	$-0.61949+2.26822I$	$0.69005-3.86115I$	0
$b=$	$-2.68143-1.16589I$		
$u=$	$1.228410+0.219366I$		
$a=$	$0.019605+0.557187I$	$-3.90155+1.70271I$	0
$b=$	$0.345202+0.145747I$		
$u=$	$1.228410-0.219366I$		
$a=$	$0.019605-0.557187I$	$-3.90155-1.70271I$	0
$b=$	$0.345202-0.145747I$		
$u=$	$1.104490+0.586240I$		
$a=$	$1.07594+2.50607I$	$0.07853+8.28625I$	0
$b=$	$3.53051-1.54348I$		
$u=$	$1.104490-0.586240I$		
$a=$	$1.07594-2.50607I$	$0.07853-8.28625I$	0
$b=$	$3.53051+1.54348I$		
$u=$	$-0.554796+1.126340I$		
$a=$	$0.421885-1.233660I$	$-1.85183+13.51530I$	0
$b=$	$1.95442-0.79674I$		
$u=$	$-0.554796-1.126340I$		
$a=$	$0.421885+1.233660I$	$-1.85183-13.51530I$	0
$b=$	$1.95442+0.79674I$		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.459461 + 1.173470I$ $a = -0.438511 - 0.287298I$ $b = -0.134749 - 0.946354I$	$-0.51232 - 5.68304I$	0
$u = -0.459461 - 1.173470I$ $a = -0.438511 + 0.287298I$ $b = -0.134749 + 0.946354I$	$-0.51232 + 5.68304I$	0
$u = -0.643765 + 0.361947I$ $a = 0.734544 + 0.051006I$ $b = 1.28036 + 1.97188I$	$-2.03338 - 3.54410I$	0
$u = -0.643765 - 0.361947I$ $a = 0.734544 - 0.051006I$ $b = 1.28036 - 1.97188I$	$-2.03338 + 3.54410I$	0
$u = 1.143750 + 0.534995I$ $a = -1.323960 - 0.415383I$ $b = -1.03519 + 1.56419I$	$0.79510 + 6.48971I$	0
$u = 1.143750 - 0.534995I$ $a = -1.323960 + 0.415383I$ $b = -1.03519 - 1.56419I$	$0.79510 - 6.48971I$	0
$u = 1.028740 + 0.737591I$ $a = 0.298060 - 0.180542I$ $b = 0.489256 - 0.256264I$	$-2.64106 + 6.15310I$	0
$u = 1.028740 - 0.737591I$ $a = 0.298060 + 0.180542I$ $b = 0.489256 + 0.256264I$	$-2.64106 - 6.15310I$	0
$u = -1.157490 + 0.513108I$ $a = -0.439738 + 0.144931I$ $b = -1.21838 - 1.57254I$	$3.90851 - 4.89501I$	0
$u = -1.157490 - 0.513108I$ $a = -0.439738 - 0.144931I$ $b = -1.21838 + 1.57254I$	$3.90851 + 4.89501I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.160600 + 0.558977I$ $a = -0.813277 - 0.320613I$ $b = -0.783174 - 0.123363I$	$3.42764 - 8.49889I$	0
$u = -1.160600 - 0.558977I$ $a = -0.813277 + 0.320613I$ $b = -0.783174 + 0.123363I$	$3.42764 + 8.49889I$	0
$u = -1.145230 + 0.613504I$ $a = 0.481101 - 0.353014I$ $b = 1.18208 + 2.04523I$	$0.88219 - 11.18370I$	0
$u = -1.145230 - 0.613504I$ $a = 0.481101 + 0.353014I$ $b = 1.18208 - 2.04523I$	$0.88219 + 11.18370I$	0
$u = -0.586133 + 0.375681I$ $a = 0.21752 - 2.06189I$ $b = 0.909065 + 0.437397I$	$-4.37037 + 6.99484I$	0
$u = -0.586133 - 0.375681I$ $a = 0.21752 + 2.06189I$ $b = 0.909065 - 0.437397I$	$-4.37037 - 6.99484I$	0
$u = -0.101004 + 0.684568I$ $a = -0.653162 - 1.215450I$ $b = -2.07348 - 0.96157I$	$-0.28743 - 2.46726I$	$0. + 4.44531I$
$u = -0.101004 - 0.684568I$ $a = -0.653162 + 1.215450I$ $b = -2.07348 + 0.96157I$	$-0.28743 + 2.46726I$	$0. - 4.44531I$
$u = 0.628929 + 0.266306I$ $a = 0.96771 + 1.53296I$ $b = 0.299913 - 0.898642I$	$-5.78935 + 0.68606I$	$-2.49507 - 6.39155I$
$u = 0.628929 - 0.266306I$ $a = 0.96771 - 1.53296I$ $b = 0.299913 + 0.898642I$	$-5.78935 - 0.68606I$	$-2.49507 + 6.39155I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.121170 + 0.694244I$ $a = 0.890693 - 0.238226I$ $b = 1.91995 + 1.01176I$	$-4.44426 - 11.38070I$	0
$u = -1.121170 - 0.694244I$ $a = 0.890693 + 0.238226I$ $b = 1.91995 - 1.01176I$	$-4.44426 + 11.38070I$	0
$u = 0.881465 + 1.004630I$ $a = 0.142382 + 0.010281I$ $b = -0.007897 - 0.568997I$	$-3.36270 + 0.14216I$	0
$u = 0.881465 - 1.004630I$ $a = 0.142382 - 0.010281I$ $b = -0.007897 + 0.568997I$	$-3.36270 - 0.14216I$	0
$u = 1.117470 + 0.736926I$ $a = -0.038687 + 0.285469I$ $b = 0.610468 + 0.504985I$	$-3.69249 - 3.37191I$	0
$u = 1.117470 - 0.736926I$ $a = -0.038687 - 0.285469I$ $b = 0.610468 - 0.504985I$	$-3.69249 + 3.37191I$	0
$u = 1.231700 + 0.570330I$ $a = 1.145330 + 0.252408I$ $b = 1.22493 - 1.24831I$	$4.92055 + 8.62646I$	0
$u = 1.231700 - 0.570330I$ $a = 1.145330 - 0.252408I$ $b = 1.22493 + 1.24831I$	$4.92055 - 8.62646I$	0
$u = 0.507192 + 1.285270I$ $a = 0.416315 + 0.282811I$ $b = 1.097480 - 0.164729I$	$-2.63922 - 4.76673I$	0
$u = 0.507192 - 1.285270I$ $a = 0.416315 - 0.282811I$ $b = 1.097480 + 0.164729I$	$-2.63922 + 4.76673I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.387160 + 0.023645I$ $a = 0.849880 + 0.283511I$ $b = 0.056347 + 0.145052I$	$7.67778 + 4.50262I$	0
$u = 1.387160 - 0.023645I$ $a = 0.849880 - 0.283511I$ $b = 0.056347 - 0.145052I$	$7.67778 - 4.50262I$	0
$u = -0.606172 + 0.075201I$ $a = -1.134450 + 0.312248I$ $b = -2.16618 + 1.31816I$	$-0.21515 - 1.52425I$	$12.12024 + 5.88982I$
$u = -0.606172 - 0.075201I$ $a = -1.134450 - 0.312248I$ $b = -2.16618 - 1.31816I$	$-0.21515 + 1.52425I$	$12.12024 - 5.88982I$
$u = 1.244780 + 0.629258I$ $a = -1.204340 - 0.351088I$ $b = -1.41993 + 1.59802I$	$2.9856 + 14.5493I$	0
$u = 1.244780 - 0.629258I$ $a = -1.204340 + 0.351088I$ $b = -1.41993 - 1.59802I$	$2.9856 - 14.5493I$	0
$u = -1.207310 + 0.725372I$ $a = -1.191030 + 0.199433I$ $b = -1.55697 - 1.71863I$	$2.3775 - 14.3079I$	0
$u = -1.207310 - 0.725372I$ $a = -1.191030 - 0.199433I$ $b = -1.55697 + 1.71863I$	$2.3775 + 14.3079I$	0
$u = -1.396050 + 0.219696I$ $a = -0.705777 - 0.231654I$ $b = 0.091109 - 0.644702I$	$7.30949 - 1.49107I$	0
$u = -1.396050 - 0.219696I$ $a = -0.705777 + 0.231654I$ $b = 0.091109 + 0.644702I$	$7.30949 + 1.49107I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.24470 + 0.67938I$ $a = -0.781513 - 0.301806I$ $b = -1.03733 + 1.16608I$	$1.14688 + 7.28909I$	0
$u = 1.24470 - 0.67938I$ $a = -0.781513 + 0.301806I$ $b = -1.03733 - 1.16608I$	$1.14688 - 7.28909I$	0
$u = -1.33510 + 0.49815I$ $a = 0.647713 - 0.264716I$ $b = 0.496765 + 0.861477I$	$3.40573 - 1.43298I$	0
$u = -1.33510 - 0.49815I$ $a = 0.647713 + 0.264716I$ $b = 0.496765 - 0.861477I$	$3.40573 + 1.43298I$	0
$u = -1.20974 + 0.76422I$ $a = 1.248120 - 0.306679I$ $b = 1.81363 + 1.98292I$	$0.2730 - 20.3086I$	0
$u = -1.20974 - 0.76422I$ $a = 1.248120 + 0.306679I$ $b = 1.81363 - 1.98292I$	$0.2730 + 20.3086I$	0
$u = 1.44553 + 0.11425I$ $a = -0.910720 - 0.361032I$ $b = 0.101745 + 0.296358I$	$6.51257 + 10.16590I$	0
$u = 1.44553 - 0.11425I$ $a = -0.910720 + 0.361032I$ $b = 0.101745 - 0.296358I$	$6.51257 - 10.16590I$	0
$u = 0.397125 + 0.354132I$ $a = -2.83441 - 0.55123I$ $b = -3.49550 + 0.86823I$	$-2.14003 - 2.45951I$	$10.75971 - 5.86740I$
$u = 0.397125 - 0.354132I$ $a = -2.83441 + 0.55123I$ $b = -3.49550 - 0.86823I$	$-2.14003 + 2.45951I$	$10.75971 + 5.86740I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.46973 + 0.11223I$ $a = 0.764122 + 0.301520I$ $b = -0.362334 + 0.255883I$	$6.51509 + 3.93547I$	0
$u = -1.46973 - 0.11223I$ $a = 0.764122 - 0.301520I$ $b = -0.362334 - 0.255883I$	$6.51509 - 3.93547I$	0
$u = 1.24991 + 0.78752I$ $a = 0.585591 + 0.363161I$ $b = 1.35565 - 0.94383I$	$-0.24586 + 11.98110I$	0
$u = 1.24991 - 0.78752I$ $a = 0.585591 - 0.363161I$ $b = 1.35565 + 0.94383I$	$-0.24586 - 11.98110I$	0
$u = -1.32719 + 0.68210I$ $a = -0.466877 + 0.289109I$ $b = -0.859626 - 0.809727I$	$2.52813 - 5.97540I$	0
$u = -1.32719 - 0.68210I$ $a = -0.466877 - 0.289109I$ $b = -0.859626 + 0.809727I$	$2.52813 + 5.97540I$	0
$u = -0.388772 + 0.005114I$ $a = 1.25926 - 2.02427I$ $b = -0.193919 - 0.468391I$	$0.82272 - 1.37291I$	$5.33346 + 4.38312I$
$u = -0.388772 - 0.005114I$ $a = 1.25926 + 2.02427I$ $b = -0.193919 + 0.468391I$	$0.82272 + 1.37291I$	$5.33346 - 4.38312I$
$u = -0.063607 + 0.318230I$ $a = 0.02848 - 2.88617I$ $b = -0.711121 - 1.156350I$	$-0.15035 - 2.79872I$	$1.55621 + 1.54033I$
$u = -0.063607 - 0.318230I$ $a = 0.02848 + 2.88617I$ $b = -0.711121 + 1.156350I$	$-0.15035 + 2.79872I$	$1.55621 - 1.54033I$

II. $I_1^v = \langle a,\ 4v^3 - 6v^2 + b + 25v - 8,\ v^4 - 2v^3 + 7v^2 - 5v + 1\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

$$a_{11} = \begin{pmatrix} 0 \\ -4v^3 + 6v^2 - 25v + 8 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} v \\ 5v^3 - 8v^2 + 32v - 12 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} v^3 - v^2 + 6v - 2 \\ -1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} v^3 - 2v^2 + 6v - 2 \\ -4v^3 + 6v^2 - 25v + 8 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} v^3 - 2v^2 + 6v - 2 \\ 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -v^3 + 2v^2 - 6v + 3 \\ -1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -v^3 + 2v^2 - 6v + 2 \\ -1 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 2v - 1 \\ -2v^3 + 3v^2 - 12v + 3 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -7v^3 + 10v^2 - 47v + 12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^4$
c_3, c_7	y^4
c_5	$y^4 - y^3 + 2y^2 + 7y + 4$
c_6, c_9, c_{10} c_{12}	$y^4 + 2y^3 + 3y^2 + y + 1$
c_8, c_{11}	$y^4 + 2y^3 + 7y^2 + 5y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 0.409261 + 0.055548I$ $a = 0$ $b = -1.50411 - 1.22685I$	$-0.66484 + 1.39709I$	$-6.04449 - 2.35025I$
$v = 0.409261 - 0.055548I$ $a = 0$ $b = -1.50411 + 1.22685I$	$-0.66484 - 1.39709I$	$-6.04449 + 2.35025I$
$v = 0.59074 + 2.34806I$ $a = 0$ $b = 0.504108 - 0.106312I$	$-4.26996 + 7.64338I$	$-0.45551 - 9.20433I$
$v = 0.59074 - 2.34806I$ $a = 0$ $b = 0.504108 + 0.106312I$	$-4.26996 - 7.64338I$	$-0.45551 + 9.20433I$

III. $\boldsymbol{I_2^v = \langle a,\ 50v^5 + 61v^4 + \cdots + 67b + 59,\ v^6 + v^5 + 4v^4 + 2v^3 + 8v^2 + 1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

$$a_{11} = \begin{pmatrix} 0 \\ -0.746269v^5 - 0.910448v^4 + \cdots - 5.82090v - 0.880597 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} v \\ -0.447761v^5 - 0.746269v^4 + \cdots - 3.49254v - 1.32836 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.134328v^5 + 0.223881v^4 + \cdots + 1.44776v + 0.298507 \\ -1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.223881v^5 - 0.373134v^4 + \cdots - 0.746269v - 0.164179 \\ -0.746269v^5 - 0.910448v^4 + \cdots - 5.82090v - 0.880597 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.134328v^5 + 0.223881v^4 + \cdots + 1.44776v + 0.298507 \\ 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.134328v^5 - 0.223881v^4 + \cdots - 1.44776v + 0.701493 \\ -1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.134328v^5 - 0.223881v^4 + \cdots - 1.44776v - 0.298507 \\ -1 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.164179v^5 - 0.0597015v^4 + \cdots - 0.119403v - 0.746269 \\ -0.268657v^5 - 0.447761v^4 + \cdots - 2.89552v - 1.59701 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{68}{67}v^5 + \frac{43}{67}v^4 - \frac{221}{67}v^3 + \frac{141}{67}v^2 - \frac{450}{67}v + \frac{370}{67}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 0.42975 + 1.50598I$ $a = 0$ $b = -0.702221 + 0.130845I$	$-1.91067 + 2.82812I$	$-0.06063 - 4.05868I$
$v = 0.42975 - 1.50598I$ $a = 0$ $b = -0.702221 - 0.130845I$	$-1.91067 - 2.82812I$	$-0.06063 + 4.05868I$
$v = 0.017526 + 0.363437I$ $a = 0$ $b = -0.74506 - 2.00027I$	$-1.91067 + 2.82812I$	$5.15973 - 2.26538I$
$v = 0.017526 - 0.363437I$ $a = 0$ $b = -0.74506 + 2.00027I$	$-1.91067 - 2.82812I$	$5.15973 + 2.26538I$
$v = -0.94728 + 1.47725I$ $a = 0$ $b = 0.447279 - 0.479689I$	-6.04826	$-7.59911 + 2.50363I$
$v = -0.94728 - 1.47725I$ $a = 0$ $b = 0.447279 + 0.479689I$	-6.04826	$-7.59911 - 2.50363I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^{10})(u^{140}+69u^{139}+\cdots+221u+1)$
c_2	$((u-1)^{10})(u^{140}-11u^{139}+\cdots-5u+1)$
c_3, c_7	$u^{10}(u^{140}-u^{139}+\cdots-8192u+1024)$
c_4	$((u+1)^{10})(u^{140}-11u^{139}+\cdots-5u+1)$
c_5	$(u^3-u^2+1)^2(u^4+3u^3+4u^2+3u+2)$ $\cdot(u^{140}+2u^{139}+\cdots-10624u+1216)$
c_6	$(u^4+u^2+u+1)(u^6-u^5+2u^4-2u^3+2u^2-2u+1)$ $\cdot(u^{140}-2u^{139}+\cdots-24012u+5887)$
c_8	$(u^4+2u^3+3u^2+u+1)(u^6+3u^5+4u^4+2u^3+1)$ $\cdot(u^{140}-10u^{139}+\cdots-2u+1)$
c_9	$(u^4+u^2+u+1)(u^6-u^5+2u^4-2u^3+2u^2-2u+1)$ $\cdot(u^{140}+2u^{139}+\cdots+14u+1)$
c_{10}	$(u^4+u^2-u+1)(u^6+u^5+2u^4+2u^3+2u^2+2u+1)$ $\cdot(u^{140}+14u^{139}+\cdots+2u+1)$
c_{11}	$(u^4-2u^3+3u^2-u+1)(u^6-3u^5+4u^4-2u^3+1)$ $\cdot(u^{140}+58u^{139}+\cdots+14u+1)$
c_{12}	$(u^4+u^2-u+1)(u^6+u^5+2u^4+2u^3+2u^2+2u+1)$ $\cdot(u^{140}+2u^{139}+\cdots+14u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^{10})(y^{140}+15y^{139}+\cdots-2817y+1)$
c_2, c_4	$((y-1)^{10})(y^{140}-69y^{139}+\cdots-221y+1)$
c_3, c_7	$y^{10}(y^{140}-63y^{139}+\cdots-2.56901\times10^{7}y+1048576)$
c_5	$(y^3-y^2+2y-1)^2(y^4-y^3+2y^2+7y+4)$ $\cdot(y^{140}+150y^{139}+\cdots+35716096y+1478656)$
c_6	$(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^{140}+142y^{139}+\cdots+261556046y+34656769)$
c_8	$(y^4+2y^3+7y^2+5y+1)(y^6-y^5+4y^4-2y^3+8y^2+1)$ $\cdot(y^{140}+14y^{139}+\cdots+10y+1)$
c_9, c_{12}	$(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^{140}+58y^{139}+\cdots+14y+1)$
c_{10}	$(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^{140}+10y^{139}+\cdots+14y+1)$
c_{11}	$(y^4+2y^3+7y^2+5y+1)(y^6-y^5+4y^4-2y^3+8y^2+1)$ $\cdot(y^{140}+50y^{139}+\cdots-2010y+1)$