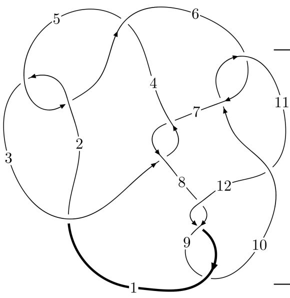
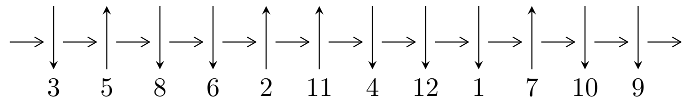
$12a_{0127}$ ($K12a_{0127}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -2.45704 \times 10^{149} u^{92} - 7.46621 \times 10^{149} u^{91} + \cdots + 1.59160 \times 10^{150} b + 5.16311 \times 10^{150}, \\
& 6.45956 \times 10^{149} u^{92} + 4.93708 \times 10^{149} u^{91} + \cdots + 3.18320 \times 10^{150} a + 3.19913 \times 10^{151}, \\
& u^{93} + 3u^{92} + \cdots - 120u - 16 \rangle \\
I_2^u = \langle & u^2 a + u^2 + b,\ u^4 a + 2u^4 + u^2 a - u^3 + a^2 + au + 4u^2 + 2a + 3,\ u^5 - u^4 + 2u^3 - u^2 + u - 1 \rangle
\end{aligned}$$

$$I_1^v = \langle a,\ -3v^3 + 5v^2 + b - 19v + 8,\ v^4 - 2v^3 + 7v^2 - 5v + 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 107 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. $I_1^u = \langle -2.46\times 10^{149}u^{92} - 7.47\times 10^{149}u^{91} + \cdots + 1.59\times 10^{150}b + 5.16\times 10^{150},\ 6.46\times 10^{149}u^{92} + 4.94\times 10^{149}u^{91} + \cdots + 3.18\times 10^{150}a + 3.20\times 10^{151},\ u^{93} + 3u^{92} + \cdots - 120u - 16\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-0.202927u^{92} - 0.155098u^{91} + \cdots - 57.5365u - 10.0500\\ 0.154376u^{92} + 0.469101u^{91} + \cdots - 27.1347u - 3.24397\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-0.211735u^{92} - 0.781695u^{91} + \cdots + 27.7607u + 2.37556\\ -0.0923884u^{92} - 0.0171328u^{91} + \cdots - 23.5232u - 4.33754\end{pmatrix}$$
$$a_3 = \begin{pmatrix}0.0729802u^{92} + 0.383157u^{91} + \cdots - 57.9079u - 10.7686\\ -0.147554u^{92} - 0.509873u^{91} + \cdots + 32.0130u + 5.00554\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-0.0344604u^{92} + 0.130739u^{91} + \cdots - 34.8900u - 5.65271\\ -0.111791u^{92} - 0.240569u^{91} + \cdots + 5.98147u + 0.720096\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-0.304123u^{92} - 0.798828u^{91} + \cdots + 4.23750u - 1.96198\\ -0.0923884u^{92} - 0.0171328u^{91} + \cdots - 23.5232u - 4.33754\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-0.146252u^{92} - 0.109830u^{91} + \cdots - 28.9086u - 4.93261\\ 0.265261u^{92} + 0.829749u^{91} + \cdots - 43.1125u - 5.98290\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-u\\u^3 + u\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-u^3\\u^5 + u^3 + u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-0.366766u^{92} - 0.697201u^{91} + \cdots - 4.07313u - 1.66182\\ 0.390430u^{92} + 1.04707u^{91} + \cdots - 44.5678u - 5.99304\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -1.42999u^{92} - 4.05788u^{91} + \cdots + 297.788u + 41.2511$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{93} + 29u^{92} + \cdots + 33u - 1$
c_2, c_5	$u^{93} + 7u^{92} + \cdots + 11u + 1$
c_3, c_7	$u^{93} - 2u^{92} + \cdots + 2048u - 1024$
c_6, c_{10}	$u^{93} - 3u^{92} + \cdots - 120u + 16$
c_8, c_9, c_{12}	$u^{93} - 7u^{92} + \cdots + 14u + 1$
c_{11}	$u^{93} + 33u^{92} + \cdots - 5056u - 256$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{93} + 77y^{92} + \cdots + 5105y - 1$
c_2, c_5	$y^{93} + 29y^{92} + \cdots + 33y - 1$
c_3, c_7	$y^{93} + 60y^{92} + \cdots - 16777216y - 1048576$
c_6, c_{10}	$y^{93} + 33y^{92} + \cdots - 5056y - 256$
c_8, c_9, c_{12}	$y^{93} - 79y^{92} + \cdots - 38y - 1$
c_{11}	$y^{93} + 49y^{92} + \cdots - 2600960y - 65536$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.665891 + 0.747136I$ $a = 0.021714 - 0.322214I$ $b = 0.348160 - 1.076720I$	$1.13674 - 1.06346I$	0
$u = 0.665891 - 0.747136I$ $a = 0.021714 + 0.322214I$ $b = 0.348160 + 1.076720I$	$1.13674 + 1.06346I$	0
$u = 0.028090 + 0.992187I$ $a = -0.594572 - 0.572329I$ $b = 0.751152 + 0.516508I$	$-4.48491 + 1.53376I$	0
$u = 0.028090 - 0.992187I$ $a = -0.594572 + 0.572329I$ $b = 0.751152 - 0.516508I$	$-4.48491 - 1.53376I$	0
$u = 0.703650 + 0.696275I$ $a = -2.89955 - 0.09078I$ $b = 0.724841 + 0.851661I$	$0.30953 + 1.50694I$	0
$u = 0.703650 - 0.696275I$ $a = -2.89955 + 0.09078I$ $b = 0.724841 - 0.851661I$	$0.30953 - 1.50694I$	0
$u = 0.939231 + 0.294821I$ $a = 0.605886 - 0.156692I$ $b = -0.030920 + 0.823464I$	$-4.04154 - 0.52773I$	0
$u = 0.939231 - 0.294821I$ $a = 0.605886 + 0.156692I$ $b = -0.030920 - 0.823464I$	$-4.04154 + 0.52773I$	0
$u = 0.813358 + 0.645627I$ $a = -1.33911 + 1.56809I$ $b = 0.723387 - 0.895856I$	$0.17268 - 4.02210I$	0
$u = 0.813358 - 0.645627I$ $a = -1.33911 - 1.56809I$ $b = 0.723387 + 0.895856I$	$0.17268 + 4.02210I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.772462 + 0.697912I$ $a = -0.693293 - 0.763022I$ $b = 0.716539 + 0.040558I$	$1.00580 + 1.29005I$	0
$u = -0.772462 - 0.697912I$ $a = -0.693293 + 0.763022I$ $b = 0.716539 - 0.040558I$	$1.00580 - 1.29005I$	0
$u = -0.641295 + 0.709236I$ $a = 1.50510 - 0.41623I$ $b = -0.898015 + 0.834146I$	$6.07300 - 4.04164I$	0
$u = -0.641295 - 0.709236I$ $a = 1.50510 + 0.41623I$ $b = -0.898015 - 0.834146I$	$6.07300 + 4.04164I$	0
$u = -0.902049 + 0.545981I$ $a = 0.232902 + 0.051229I$ $b = 0.236858 + 1.071850I$	$-2.65287 + 4.43575I$	0
$u = -0.902049 - 0.545981I$ $a = 0.232902 - 0.051229I$ $b = 0.236858 - 1.071850I$	$-2.65287 - 4.43575I$	0
$u = -0.457956 + 0.959120I$ $a = 1.59736 + 0.85309I$ $b = -0.104767 + 0.782745I$	$-1.41753 - 2.39208I$	0
$u = -0.457956 - 0.959120I$ $a = 1.59736 - 0.85309I$ $b = -0.104767 - 0.782745I$	$-1.41753 + 2.39208I$	0
$u = -0.092701 + 1.070930I$ $a = -1.44126 - 0.68874I$ $b = 0.607350 - 1.043700I$	$-6.08658 - 3.61353I$	0
$u = -0.092701 - 1.070930I$ $a = -1.44126 + 0.68874I$ $b = 0.607350 + 1.043700I$	$-6.08658 + 3.61353I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.723885+0.827218I$ $a=-1.16046-1.38117I$ $b=\ \ 0.768196+0.844019I$	$3.73031+0.14019I$	0
$u=-0.723885-0.827218I$ $a=-1.16046+1.38117I$ $b=\ \ 0.768196-0.844019I$	$3.73031-0.14019I$	0
$u=\ \ 0.893807+0.644806I$ $a=\ \ 1.32495-0.50673I$ $b=-0.794613+0.999171I$	$8.57279-6.14801I$	0
$u=\ \ 0.893807-0.644806I$ $a=\ \ 1.32495+0.50673I$ $b=-0.794613-0.999171I$	$8.57279+6.14801I$	0
$u=\ \ 0.887790+0.698478I$ $a=\ \ 1.52211+0.36437I$ $b=-0.880968-0.777147I$	$9.26540+0.06367I$	0
$u=\ \ 0.887790-0.698478I$ $a=\ \ 1.52211-0.36437I$ $b=-0.880968+0.777147I$	$9.26540-0.06367I$	0
$u=\ \ 0.734298+0.864283I$ $a=-0.778513+0.466600I$ $b=\ \ 0.784078+0.062250I$	$4.44653+2.78922I$	0
$u=\ \ 0.734298-0.864283I$ $a=-0.778513-0.466600I$ $b=\ \ 0.784078-0.062250I$	$4.44653-2.78922I$	0
$u=-0.563900+0.655196I$ $a=\ \ 1.38303+0.50824I$ $b=-0.841777-0.975061I$	$5.63543+2.37306I$	$-4.00000+2.97537I$
$u=-0.563900-0.655196I$ $a=\ \ 1.38303-0.50824I$ $b=-0.841777+0.975061I$	$5.63543-2.37306I$	$-4.00000-2.97537I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.709989+0.895029I$ $a=-2.47972+0.00567I$ $b=\ \ 0.753350-0.911791I$	$3.52116-5.61309I$	0
$u=-0.709989-0.895029I$ $a=-2.47972-0.00567I$ $b=\ \ 0.753350+0.911791I$	$3.52116+5.61309I$	0
$u=-0.462321+0.718150I$ $a=-1.82763-2.01499I$ $b=\ \ 0.271223-1.003410I$	$-2.13554-2.02980I$	$-7.22138+5.99064I$
$u=-0.462321-0.718150I$ $a=-1.82763+2.01499I$ $b=\ \ 0.271223+1.003410I$	$-2.13554+2.02980I$	$-7.22138-5.99064I$
$u=-0.091279+1.144600I$ $a=\ \ 0.444100+1.156810I$ $b=-0.727814+0.904983I$	$1.61423-5.28181I$	0
$u=-0.091279-1.144600I$ $a=\ \ 0.444100-1.156810I$ $b=-0.727814-0.904983I$	$1.61423+5.28181I$	0
$u=-0.596281+0.984323I$ $a=-0.310483+0.304748I$ $b=\ \ 0.412190+1.128220I$	$-3.14185-2.46938I$	0
$u=-0.596281-0.984323I$ $a=-0.310483-0.304748I$ $b=\ \ 0.412190-1.128220I$	$-3.14185+2.46938I$	0
$u=\ \ 0.100508+0.842737I$ $a=\ \ 1.33505-2.13922I$ $b=\ \ 0.072762-0.853196I$	$-2.84370-1.61247I$	$-12.17526+3.63901I$
$u=\ \ 0.100508-0.842737I$ $a=\ \ 1.33505+2.13922I$ $b=\ \ 0.072762+0.853196I$	$-2.84370+1.61247I$	$-12.17526-3.63901I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.373537 + 1.089370I$ $a = 0.783771 - 0.106400I$ $b = -0.466204 + 0.310229I$	$-5.25369 + 3.52820I$	0
$u = 0.373537 - 1.089370I$ $a = 0.783771 + 0.106400I$ $b = -0.466204 - 0.310229I$	$-5.25369 - 3.52820I$	0
$u = 0.654147 + 0.948564I$ $a = -1.29797 + 0.96685I$ $b = 0.249813 + 1.112570I$	$0.51216 + 6.20139I$	0
$u = 0.654147 - 0.948564I$ $a = -1.29797 - 0.96685I$ $b = 0.249813 - 1.112570I$	$0.51216 - 6.20139I$	0
$u = -0.180203 + 1.141930I$ $a = -0.066782 - 0.541344I$ $b = -0.733362 - 0.843879I$	$1.80341 + 0.28751I$	0
$u = -0.180203 - 1.141930I$ $a = -0.066782 + 0.541344I$ $b = -0.733362 + 0.843879I$	$1.80341 - 0.28751I$	0
$u = 1.178410 + 0.045776I$ $a = 1.332440 + 0.340605I$ $b = -0.721449 - 0.874875I$	$-0.31299 + 2.75548I$	0
$u = 1.178410 - 0.045776I$ $a = 1.332440 - 0.340605I$ $b = -0.721449 + 0.874875I$	$-0.31299 - 2.75548I$	0
$u = -0.657396 + 0.984250I$ $a = 0.057650 + 1.054980I$ $b = -0.858227 - 0.752581I$	$5.21003 - 1.06475I$	0
$u = -0.657396 - 0.984250I$ $a = 0.057650 - 1.054980I$ $b = -0.858227 + 0.752581I$	$5.21003 + 1.06475I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.669257 + 0.979936I$ $a = -1.11762 + 1.21431I$ $b = 0.812545 - 0.808383I$	$-0.54672 + 3.79018I$	0
$u = 0.669257 - 0.979936I$ $a = -1.11762 - 1.21431I$ $b = 0.812545 + 0.808383I$	$-0.54672 - 3.79018I$	0
$u = -0.606403 + 1.021380I$ $a = 2.02312 + 1.14152I$ $b = -0.769467 + 1.002140I$	$4.43609 - 7.12677I$	0
$u = -0.606403 - 1.021380I$ $a = 2.02312 - 1.14152I$ $b = -0.769467 - 1.002140I$	$4.43609 + 7.12677I$	0
$u = -0.698456 + 0.995590I$ $a = -0.859834 - 0.289365I$ $b = 0.839179 - 0.129360I$	$0.09738 - 6.86530I$	0
$u = -0.698456 - 0.995590I$ $a = -0.859834 + 0.289365I$ $b = 0.839179 + 0.129360I$	$0.09738 + 6.86530I$	0
$u = 0.110109 + 1.230620I$ $a = 0.238797 + 1.135160I$ $b = 0.024424 + 1.043260I$	$-9.67176 + 2.69506I$	0
$u = 0.110109 - 1.230620I$ $a = 0.238797 - 1.135160I$ $b = 0.024424 - 1.043260I$	$-9.67176 - 2.69506I$	0
$u = -1.031690 + 0.700693I$ $a = 1.53765 - 0.32483I$ $b = -0.867434 + 0.730543I$	$4.73954 + 4.00870I$	0
$u = -1.031690 - 0.700693I$ $a = 1.53765 + 0.32483I$ $b = -0.867434 - 0.730543I$	$4.73954 - 4.00870I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.703437 + 1.030230I$ $a = -2.26417 - 0.00813I$ $b = 0.767953 + 0.952069I$	$-0.99244 + 9.71949I$	0
$u = 0.703437 - 1.030230I$ $a = -2.26417 + 0.00813I$ $b = 0.767953 - 0.952069I$	$-0.99244 - 9.71949I$	0
$u = -0.332717 + 0.673554I$ $a = 0.702724 - 0.002191I$ $b = -0.098932 - 0.255156I$	$-0.235055 - 1.159930I$	$-3.79400 + 5.65355I$
$u = -0.332717 - 0.673554I$ $a = 0.702724 + 0.002191I$ $b = -0.098932 + 0.255156I$	$-0.235055 + 1.159930I$	$-3.79400 - 5.65355I$
$u = -1.070920 + 0.666799I$ $a = 1.285280 + 0.509328I$ $b = -0.764932 - 1.017430I$	$3.85170 + 10.08040I$	0
$u = -1.070920 - 0.666799I$ $a = 1.285280 - 0.509328I$ $b = -0.764932 + 1.017430I$	$3.85170 - 10.08040I$	0
$u = 0.757426 + 1.037860I$ $a = 0.392734 - 1.088930I$ $b = -0.888505 + 0.723229I$	$8.20993 + 6.03208I$	0
$u = 0.757426 - 1.037860I$ $a = 0.392734 + 1.088930I$ $b = -0.888505 - 0.723229I$	$8.20993 - 6.03208I$	0
$u = -0.699174 + 1.090670I$ $a = -1.040200 - 0.722000I$ $b = 0.223631 - 1.157930I$	$-4.30881 - 10.31650I$	0
$u = -0.699174 - 1.090670I$ $a = -1.040200 + 0.722000I$ $b = 0.223631 + 1.157930I$	$-4.30881 + 10.31650I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.734781 + 1.069170I$ $a = 2.09957 - 0.76870I$ $b = -0.771412 - 1.030210I$	$7.2560 + 12.1847I$	0
$u = 0.734781 - 1.069170I$ $a = 2.09957 + 0.76870I$ $b = -0.771412 + 1.030210I$	$7.2560 - 12.1847I$	0
$u = 0.559108 + 1.183530I$ $a = 1.28446 - 0.60827I$ $b = -0.201625 - 0.849532I$	$-6.85158 + 5.93082I$	0
$u = 0.559108 - 1.183530I$ $a = 1.28446 + 0.60827I$ $b = -0.201625 + 0.849532I$	$-6.85158 - 5.93082I$	0
$u = 0.104371 + 0.637225I$ $a = -1.78509 + 2.38765I$ $b = 0.550116 + 0.929746I$	$-0.65265 + 2.81004I$	$-7.41547 + 0.47034I$
$u = 0.104371 - 0.637225I$ $a = -1.78509 - 2.38765I$ $b = 0.550116 - 0.929746I$	$-0.65265 - 2.81004I$	$-7.41547 - 0.47034I$
$u = -0.804628 + 1.104560I$ $a = 0.575641 + 1.015300I$ $b = -0.905266 - 0.694338I$	$3.41954 - 10.67570I$	0
$u = -0.804628 - 1.104560I$ $a = 0.575641 - 1.015300I$ $b = -0.905266 + 0.694338I$	$3.41954 + 10.67570I$	0
$u = 0.625980$ $a = 1.39606$ $b = -0.118436$	-2.21094	-3.96060
$u = -0.623742 + 0.005581I$ $a = 1.40205 - 0.42581I$ $b = -0.817120 + 0.899544I$	$5.79457 - 3.05660I$	$5.70755 + 2.23879I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.623742 - 0.005581I$ $a = 1.40205 + 0.42581I$ $b = -0.817120 - 0.899544I$	$5.79457 + 3.05660I$	$5.70755 - 2.23879I$
$u = -0.802626 + 1.138200I$ $a = 2.02368 + 0.56314I$ $b = -0.765073 + 1.050410I$	$2.3123 - 16.8507I$	0
$u = -0.802626 - 1.138200I$ $a = 2.02368 - 0.56314I$ $b = -0.765073 - 1.050410I$	$2.3123 + 16.8507I$	0
$u = 0.393753 + 1.338270I$ $a = 0.360318 + 0.076774I$ $b = -0.673290 + 0.777836I$	$-4.96828 + 2.80408I$	0
$u = 0.393753 - 1.338270I$ $a = 0.360318 - 0.076774I$ $b = -0.673290 - 0.777836I$	$-4.96828 - 2.80408I$	0
$u = 0.304631 + 1.373780I$ $a = 1.017700 - 0.772413I$ $b = -0.679839 - 0.954465I$	$-5.53600 + 8.05814I$	0
$u = 0.304631 - 1.373780I$ $a = 1.017700 + 0.772413I$ $b = -0.679839 + 0.954465I$	$-5.53600 - 8.05814I$	0
$u = -0.342841 + 0.373977I$ $a = 0.538435 + 0.205024I$ $b = 0.253462 - 0.569255I$	$-0.064937 - 1.209350I$	$-0.44197 + 4.81444I$
$u = -0.342841 - 0.373977I$ $a = 0.538435 - 0.205024I$ $b = 0.253462 + 0.569255I$	$-0.064937 + 1.209350I$	$-0.44197 - 4.81444I$
$u = -0.427681 + 0.212695I$ $a = -7.06270 + 0.05989I$ $b = 0.446144 - 0.898095I$	$-1.97161 - 1.83092I$	$13.2051 + 13.6976I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.427681-0.212695I$ $a=-7.06270-0.05989I$ $b=\ \ 0.446144+0.898095I$	$-1.97161+1.83092I$	$13.2051-13.6976I$
$u=\ \ 0.170011+0.377963I$ $a=\ \ 0.94269+1.18580I$ $b=\ \ 0.482876-0.744659I$	$0.00175-1.44857I$	$-2.22081+5.39809I$
$u=\ \ 0.170011-0.377963I$ $a=\ \ 0.94269-1.18580I$ $b=\ \ 0.482876+0.744659I$	$0.00175+1.44857I$	$-2.22081-5.39809I$

II. $I^u_2 = \langle u^2a + u^2 + b,\ u^4a + 2u^4 + u^2a - u^3 + a^2 + au + 4u^2 + 2a + 3,\ u^5 - u^4 + 2u^3 - u^2 + u - 1\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} a \\ -u^2a - u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^4 + u^2a + 2u^2 + a + u + 2 \\ -u^2a - u^2 - 1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^4 + u^2 + a + u + 1 \\ -u^2a - u^2 - 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^4 + u^2 + a + u + 1 \\ -u^2a - u^2 - 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^3 \\ u^4 - u^3 + u^2 + 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^3 \\ u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 2u^4a + u^3a + u^4 + 5u^2a + 5u^3 + au + u^2 - a + 5u - 7$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5	$(u^2 - u + 1)^5$
c_2	$(u^2 + u + 1)^5$
c_3, 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_4 c_5	$(y^2 + y + 1)^5$
c_3, 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_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.339110+0.822375I$ $a=\ \ 0.219642+0.330957I$ $b=\ \ 0.500000+0.866025I$	$-0.329100+0.499304I$	$-6.44749+1.44665I$
$u=-0.339110+0.822375I$ $a=-1.32320-1.22172I$ $b=\ \ 0.500000-0.866025I$	$-0.32910-3.56046I$	$-2.59686+8.38554I$
$u=-0.339110-0.822375I$ $a=\ \ 0.219642-0.330957I$ $b=\ \ 0.500000-0.866025I$	$-0.329100-0.499304I$	$-6.44749-1.44665I$
$u=-0.339110-0.822375I$ $a=-1.32320+1.22172I$ $b=\ \ 0.500000+0.866025I$	$-0.32910+3.56046I$	$-2.59686-8.38554I$
$u=\ \ 0.766826$ $a=-1.85031+1.47278I$ $b=\ \ 0.500000-0.866025I$	$-2.40108-2.02988I$	$-7.10008+5.66929I$
$u=\ \ 0.766826$ $a=-1.85031-1.47278I$ $b=\ \ 0.500000+0.866025I$	$-2.40108+2.02988I$	$-7.10008-5.66929I$
$u=\ \ 0.455697+1.200150I$ $a=-1.121840+0.594429I$ $b=\ \ 0.500000+0.866025I$	$-5.87256+6.43072I$	$-6.27578-5.55522I$
$u=\ \ 0.455697+1.200150I$ $a=-0.424290-0.191698I$ $b=\ \ 0.500000-0.866025I$	$-5.87256+2.37095I$	$-11.57979+0.88917I$
$u=\ \ 0.455697-1.200150I$ $a=-1.121840-0.594429I$ $b=\ \ 0.500000-0.866025I$	$-5.87256-6.43072I$	$-6.27578+5.55522I$
$u=\ \ 0.455697-1.200150I$ $a=-0.424290+0.191698I$ $b=\ \ 0.500000+0.866025I$	$-5.87256-2.37095I$	$-11.57979-0.88917I$

III. $I_1^v = \langle a,\ -3v^3 + 5v^2 + b - 19v + 8,\ v^4 - 2v^3 + 7v^2 - 5v + 1\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0 \\ 3v^3 - 5v^2 + 19v - 8 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ -5v^3 + 8v^2 - 32v + 12 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 3v^3 - 5v^2 + 19v - 8 \\ 7v^3 - 11v^2 + 44v - 16 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 4v^3 - 6v^2 + 25v - 8 \\ -v^3 + 2v^2 - 7v + 5 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -5v^3 + 8v^2 - 32v + 13 \\ -5v^3 + 8v^2 - 32v + 12 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -4v^3 + 6v^2 - 25v + 8 \\ v^3 - 2v^2 + 7v - 5 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -4v^3 + 6v^2 - 24v + 8 \\ v^3 - 2v^2 + 7v - 5 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 13v^3 - 22v^2 + 85v - 40$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 0.409261 + 0.055548I$ $a = 0$ $b = -0.851808 + 0.911292I$	$5.14581 - 3.16396I$	$-7.98794 + 4.08190I$
$v = 0.409261 - 0.055548I$ $a = 0$ $b = -0.851808 - 0.911292I$	$5.14581 + 3.16396I$	$-7.98794 - 4.08190I$
$v = 0.59074 + 2.34806I$ $a = 0$ $b = 0.351808 - 0.720342I$	$-1.85594 - 1.41510I$	$-0.51206 + 2.21528I$
$v = 0.59074 - 2.34806I$ $a = 0$ $b = 0.351808 + 0.720342I$	$-1.85594 + 1.41510I$	$-0.51206 - 2.21528I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_4	$((u^2-u+1)^5)(u^4-u^3+3u^2-2u+1)(u^{93}+29u^{92}+\cdots+33u-1)$
c_2	$((u^2+u+1)^5)(u^4-u^3+u^2+1)(u^{93}+7u^{92}+\cdots+11u+1)$
c_3	$u^{10}(u^4-u^3+3u^2-2u+1)(u^{93}-2u^{92}+\cdots+2048u-1024)$
c_5	$((u^2-u+1)^5)(u^4+u^3+u^2+1)(u^{93}+7u^{92}+\cdots+11u+1)$
c_6	$u^4(u^5-u^4+\cdots+u-1)^2(u^{93}-3u^{92}+\cdots-120u+16)$
c_7	$u^{10}(u^4+u^3+3u^2+2u+1)(u^{93}-2u^{92}+\cdots+2048u-1024)$
c_8, c_9	$((u-1)^4)(u^5+u^4+\cdots+u-1)^2(u^{93}-7u^{92}+\cdots+14u+1)$
c_{10}	$u^4(u^5+u^4+\cdots+u+1)^2(u^{93}-3u^{92}+\cdots-120u+16)$
c_{11}	$u^4(u^5+3u^4+\cdots-u-1)^2(u^{93}+33u^{92}+\cdots-5056u-256)$
c_{12}	$((u+1)^4)(u^5-u^4+\cdots+u+1)^2(u^{93}-7u^{92}+\cdots+14u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y^2+y+1)^5)(y^4+5y^3+\cdots+2y+1)(y^{93}+77y^{92}+\cdots+5105y-1)$
c_2, c_5	$((y^2+y+1)^5)(y^4+y^3+3y^2+2y+1)(y^{93}+29y^{92}+\cdots+33y-1)$
c_3, c_7	$y^{10}(y^4+5y^3+7y^2+2y+1)$ $\cdot\,(y^{93}+60y^{92}+\cdots-16777216y-1048576)$
c_6, c_{10}	$y^4(y^5+3y^4+\cdots-y-1)^2(y^{93}+33y^{92}+\cdots-5056y-256)$
c_8, c_9, c_{12}	$((y-1)^4)(y^5-5y^4+\cdots-y-1)^2(y^{93}-79y^{92}+\cdots-38y-1)$
c_{11}	$y^4(y^5-y^4+8y^3-3y^2+3y-1)^2$ $\cdot\,(y^{93}+49y^{92}+\cdots-2600960y-65536)$