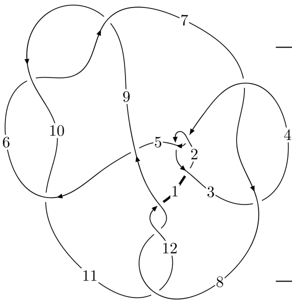
$12n_{0197}$ $(K12n_{0197})$



A knot diagram[1]

Linearized knot diagam

$$\rightarrow \downarrow \rightarrow \downarrow \rightarrow \downarrow \rightarrow \downarrow \rightarrow \downarrow \rightarrow \downarrow \rightarrow \downarrow \rightarrow \uparrow \rightarrow \downarrow \rightarrow \downarrow \rightarrow \uparrow \rightarrow \uparrow \rightarrow$$

$$3 \quad 5 \quad 8 \quad 2 \quad 9 \quad 10 \quad 4 \quad 12 \quad 7 \quad 6 \quad 8 \quad 9$$

Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -8.18355 \times 10^{119} u^{63} - 1.02834 \times 10^{120} u^{62} + \cdots + 6.77073 \times 10^{121} b - 4.36658 \times 10^{121}, \\
& 1.74383 \times 10^{121} u^{63} + 1.62828 \times 10^{121} u^{62} + \cdots + 6.09366 \times 10^{122} a - 5.03534 \times 10^{122}, \\
& u^{64} + 2u^{63} + \cdots - 36u - 36 \rangle \\
I_2^u = \langle & -3u^2 a + au + 3u^2 + 5b - 2a - u + 7,\ -4u^2 a + a^2 + 2au + 7u^2 - 6a - 2u + 17,\ u^3 - u^2 + 2u - 1 \rangle \\
I_3^u = \langle & b,\ -2u^2 + a - u - 3,\ u^3 + u^2 + 2u + 1 \rangle
\end{aligned}$$

$$I_1^v = \langle a,\ b - 3v + 1,\ 3v^2 - 3v + 1 \rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 75 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. $\boldsymbol{I_1^u = \langle -8.18 \times 10^{119} u^{63} - 1.03 \times 10^{120} u^{62} + \cdots + 6.77 \times 10^{121} b - 4.37 \times 10^{121},\ 1.74 \times 10^{121} u^{63} + 1.63 \times 10^{121} u^{62} + \cdots + 6.09 \times 10^{122} a - 5.04 \times 10^{122},\ u^{64} + 2u^{63} + \cdots - 36u - 36 \rangle}$

(i) Arc colorings

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

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

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

$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.0286172u^{63} - 0.0267209u^{62} + \cdots + 6.11396u + 0.826324 \\ 0.0120867u^{63} + 0.0151881u^{62} + \cdots - 2.44925u + 0.644920 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.00662501u^{63} + 0.00268962u^{62} + \cdots + 0.595026u - 0.834195 \\ -0.00664903u^{63} - 0.0289554u^{62} + \cdots + 1.40621u + 1.36782 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.0183635u^{63} - 0.0249695u^{62} + \cdots + 5.48546u - 0.126144 \\ 0.00140169u^{63} + 0.0235025u^{62} + \cdots - 1.73632u - 1.16399 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.0101569u^{63} + 0.00172136u^{62} + \cdots + 3.98696u - 1.71340 \\ -0.00147268u^{63} + 0.0111679u^{62} + \cdots - 1.07088u - 0.793992 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.0165305u^{63} - 0.0115329u^{62} + \cdots + 3.66471u + 1.47124 \\ 0.0120867u^{63} + 0.0151881u^{62} + \cdots - 2.44925u + 0.644920 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.00128622u^{63} - 0.00466939u^{62} + \cdots + 2.09437u - 0.413947 \\ -0.000693282u^{63} - 0.0414084u^{62} + \cdots + 0.539582u + 3.47925 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.00597049u^{63} - 0.0314814u^{62} + \cdots - 1.43299u + 3.96869 \\ 0.0313178u^{63} + 0.0159753u^{62} + \cdots - 0.686893u + 1.99154 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.000592942u^{63} - 0.0367390u^{62} + \cdots - 1.55479u + 3.89320 \\ 0.0243989u^{63} + 0.00752519u^{62} + \cdots - 0.804368u + 2.11396 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.144774u^{63} + 0.289389u^{62} + \cdots - 34.9857u - 14.7964$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{64} + 34u^{63} + \cdots + 295u + 81$
c_2, c_4	$u^{64} - 6u^{63} + \cdots - 41u + 9$
c_3, c_7	$u^{64} + 2u^{63} + \cdots - 36u - 36$
c_5	$u^{64} + 2u^{63} + \cdots + 14008u + 1448$
c_6, c_9, c_{10}	$u^{64} - 2u^{63} + \cdots - 8u + 8$
c_8, c_{11}, c_{12}	$u^{64} - 5u^{63} + \cdots + 77u - 49$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{64} - 2y^{63} + \cdots - 197995y + 6561$
c_2, c_4	$y^{64} - 34y^{63} + \cdots - 295y + 81$
c_3, c_7	$y^{64} + 24y^{63} + \cdots + 8136y + 1296$
c_5	$y^{64} - 28y^{63} + \cdots - 37440y + 2096704$
c_6, c_9, c_{10}	$y^{64} + 56y^{63} + \cdots - 2240y + 64$
c_8, c_{11}, c_{12}	$y^{64} - 25y^{63} + \cdots - 103635y + 2401$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.371724 + 0.987147I$ $a = 0.34956 - 2.12621I$ $b = -0.00833 + 1.56770I$	$7.22646 - 4.24018I$	$-1.56965 + 6.79694I$
$u = 0.371724 - 0.987147I$ $a = 0.34956 + 2.12621I$ $b = -0.00833 - 1.56770I$	$7.22646 + 4.24018I$	$-1.56965 - 6.79694I$
$u = -0.851897 + 0.643385I$ $a = 0.219665 + 0.339736I$ $b = 0.734413 - 0.053249I$	$-1.92756 + 0.31252I$	$-6.62839 - 0.48650I$
$u = -0.851897 - 0.643385I$ $a = 0.219665 - 0.339736I$ $b = 0.734413 + 0.053249I$	$-1.92756 - 0.31252I$	$-6.62839 + 0.48650I$
$u = 0.289154 + 0.883310I$ $a = -1.66383 + 1.15257I$ $b = -0.190882 - 1.354230I$	$7.93884 - 1.04658I$	$3.28663 + 0.78986I$
$u = 0.289154 - 0.883310I$ $a = -1.66383 - 1.15257I$ $b = -0.190882 + 1.354230I$	$7.93884 + 1.04658I$	$3.28663 - 0.78986I$
$u = -0.120473 + 0.912958I$ $a = -0.51004 + 2.46185I$ $b = -0.10152 - 1.51750I$	$8.40492 + 0.01731I$	$2.49939 - 0.84899I$
$u = -0.120473 - 0.912958I$ $a = -0.51004 - 2.46185I$ $b = -0.10152 + 1.51750I$	$8.40492 - 0.01731I$	$2.49939 + 0.84899I$
$u = 0.638572 + 0.640695I$ $a = 0.148291 - 0.920775I$ $b = -0.286756 + 0.783489I$	$1.31901 - 1.54000I$	$-0.73504 + 2.22693I$
$u = 0.638572 - 0.640695I$ $a = 0.148291 + 0.920775I$ $b = -0.286756 - 0.783489I$	$1.31901 + 1.54000I$	$-0.73504 - 2.22693I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.143236 + 0.877205I$ $a = -0.725073 - 0.333935I$ $b = -0.656856 + 0.176920I$	$2.97594 - 1.87605I$	$-2.44251 + 2.63726I$
$u = 0.143236 - 0.877205I$ $a = -0.725073 + 0.333935I$ $b = -0.656856 - 0.176920I$	$2.97594 + 1.87605I$	$-2.44251 - 2.63726I$
$u = 0.756304 + 0.458360I$ $a = 0.306352 - 0.919317I$ $b = -0.060789 + 0.914710I$	$1.28520 - 1.55606I$	$-1.54627 + 3.90847I$
$u = 0.756304 - 0.458360I$ $a = 0.306352 + 0.919317I$ $b = -0.060789 - 0.914710I$	$1.28520 + 1.55606I$	$-1.54627 - 3.90847I$
$u = -0.504418 + 0.998062I$ $a = -1.100990 - 0.549182I$ $b = -0.289271 + 1.203540I$	$6.09312 + 5.38431I$	$0. - 6.40891I$
$u = -0.504418 - 0.998062I$ $a = -1.100990 + 0.549182I$ $b = -0.289271 - 1.203540I$	$6.09312 - 5.38431I$	$0. + 6.40891I$
$u = 0.762958 + 0.831010I$ $a = 0.183769 - 0.405771I$ $b = 0.955269 + 0.141940I$	$-5.62436 - 4.28044I$	$-6.00000 + 4.50614I$
$u = 0.762958 - 0.831010I$ $a = 0.183769 + 0.405771I$ $b = 0.955269 - 0.141940I$	$-5.62436 + 4.28044I$	$-6.00000 - 4.50614I$
$u = -0.729450 + 0.880042I$ $a = 1.24966 + 1.57057I$ $b = 0.348427 - 1.115220I$	$-2.00749 - 0.07198I$	$-6.00000 + 0.I$
$u = -0.729450 - 0.880042I$ $a = 1.24966 - 1.57057I$ $b = 0.348427 + 1.115220I$	$-2.00749 + 0.07198I$	$-6.00000 + 0.I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.582893 + 0.626983I$ $a = 0.109115 - 0.762611I$ $b = 0.575665 + 1.168030I$	$-2.52052 - 1.08813I$	$-6.33441 - 3.27535I$
$u = -0.582893 - 0.626983I$ $a = 0.109115 + 0.762611I$ $b = 0.575665 - 1.168030I$	$-2.52052 + 1.08813I$	$-6.33441 + 3.27535I$
$u = 1.100450 + 0.340054I$ $a = 0.124200 + 0.922793I$ $b = 0.300318 - 1.253550I$	$1.78771 + 3.40756I$	0
$u = 1.100450 - 0.340054I$ $a = 0.124200 - 0.922793I$ $b = 0.300318 + 1.253550I$	$1.78771 - 3.40756I$	0
$u = -0.737565 + 0.903046I$ $a = 0.122843 + 0.600237I$ $b = -0.619828 - 0.958033I$	$-1.91355 + 5.66807I$	0
$u = -0.737565 - 0.903046I$ $a = 0.122843 - 0.600237I$ $b = -0.619828 + 0.958033I$	$-1.91355 - 5.66807I$	0
$u = 0.726823 + 0.936403I$ $a = 0.033280 + 0.795146I$ $b = -0.808810 - 0.058894I$	$-5.29747 - 1.38613I$	0
$u = 0.726823 - 0.936403I$ $a = 0.033280 - 0.795146I$ $b = -0.808810 + 0.058894I$	$-5.29747 + 1.38613I$	0
$u = -0.943462 + 0.748807I$ $a = 0.402673 + 0.687146I$ $b = -0.352033 - 1.214350I$	$-1.75143 - 2.80069I$	0
$u = -0.943462 - 0.748807I$ $a = 0.402673 - 0.687146I$ $b = -0.352033 + 1.214350I$	$-1.75143 + 2.80069I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.530839 + 1.085190I$ $a = -1.18992 - 2.38726I$ $b = -0.357475 + 1.308410I$	$-1.02207 + 5.58763I$	0
$u = -0.530839 - 1.085190I$ $a = -1.18992 + 2.38726I$ $b = -0.357475 - 1.308410I$	$-1.02207 - 5.58763I$	0
$u = -0.638350 + 0.458185I$ $a = -1.42772 + 1.84164I$ $b = 0.058032 + 1.284130I$	$4.43558 - 0.95010I$	$-3.68053 + 0.16501I$
$u = -0.638350 - 0.458185I$ $a = -1.42772 - 1.84164I$ $b = 0.058032 - 1.284130I$	$4.43558 + 0.95010I$	$-3.68053 - 0.16501I$
$u = 0.991904 + 0.750159I$ $a = 0.148320 - 0.337014I$ $b = 0.819310 - 0.137492I$	$-4.97229 + 4.33638I$	0
$u = 0.991904 - 0.750159I$ $a = 0.148320 + 0.337014I$ $b = 0.819310 + 0.137492I$	$-4.97229 - 4.33638I$	0
$u = 0.745865 + 1.004160I$ $a = 0.98676 - 1.53664I$ $b = 0.322497 + 1.317150I$	$2.39311 - 4.14386I$	0
$u = 0.745865 - 1.004160I$ $a = 0.98676 + 1.53664I$ $b = 0.322497 - 1.317150I$	$2.39311 + 4.14386I$	0
$u = -0.760147 + 1.058960I$ $a = -0.086257 - 0.649687I$ $b = -0.798556 + 0.238433I$	$-0.69248 + 5.71971I$	0
$u = -0.760147 - 1.058960I$ $a = -0.086257 + 0.649687I$ $b = -0.798556 - 0.238433I$	$-0.69248 - 5.71971I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.146270 + 0.626192I$ $a = 0.042638 - 0.906852I$ $b = 0.358907 + 1.357570I$	$-0.26204 - 8.58996I$	0
$u = -1.146270 - 0.626192I$ $a = 0.042638 + 0.906852I$ $b = 0.358907 - 1.357570I$	$-0.26204 + 8.58996I$	0
$u = -0.807059 + 1.031940I$ $a = 0.96063 + 1.40654I$ $b = 0.42783 - 1.37511I$	$-0.85936 + 9.21399I$	0
$u = -0.807059 - 1.031940I$ $a = 0.96063 - 1.40654I$ $b = 0.42783 + 1.37511I$	$-0.85936 - 9.21399I$	0
$u = 0.830339 + 1.065580I$ $a = -0.173021 + 0.690884I$ $b = -0.914977 - 0.285555I$	$-3.96299 - 10.98490I$	0
$u = 0.830339 - 1.065580I$ $a = -0.173021 - 0.690884I$ $b = -0.914977 + 0.285555I$	$-3.96299 + 10.98490I$	0
$u = 0.567499 + 0.274781I$ $a = 4.46367 - 0.22909I$ $b = 0.02424 + 1.46247I$	$5.03811 + 0.63967I$	$-9.48403 - 2.81401I$
$u = 0.567499 - 0.274781I$ $a = 4.46367 + 0.22909I$ $b = 0.02424 - 1.46247I$	$5.03811 - 0.63967I$	$-9.48403 + 2.81401I$
$u = -0.620354$ $a = 0.588745$ $b = 0.303129$	-0.902009	-11.9970
$u = -0.384122 + 0.467062I$ $a = 1.95525 + 0.79572I$ $b = -0.104623 - 0.484898I$	$-1.32609 - 0.73040I$	$-4.44163 - 2.02837I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.384122 - 0.467062I$ $a = 1.95525 - 0.79572I$ $b = -0.104623 + 0.484898I$	$-1.32609 + 0.73040I$	$-4.44163 + 2.02837I$
$u = -0.183247 + 1.393890I$ $a = 0.208751 - 0.090637I$ $b = -0.371033 + 0.044917I$	$4.27685 + 3.00285I$	0
$u = -0.183247 - 1.393890I$ $a = 0.208751 + 0.090637I$ $b = -0.371033 - 0.044917I$	$4.27685 - 3.00285I$	0
$u = -0.149689 + 0.573511I$ $a = 0.227207 + 0.623159I$ $b = 0.689304 - 0.758710I$	$-1.26637 + 2.57337I$	$0.88170 - 9.10964I$
$u = -0.149689 - 0.573511I$ $a = 0.227207 - 0.623159I$ $b = 0.689304 + 0.758710I$	$-1.26637 - 2.57337I$	$0.88170 + 9.10964I$
$u = 0.71093 + 1.24560I$ $a = -1.02150 + 1.90643I$ $b = -0.33731 - 1.40946I$	$4.54460 - 9.84680I$	0
$u = 0.71093 - 1.24560I$ $a = -1.02150 - 1.90643I$ $b = -0.33731 + 1.40946I$	$4.54460 + 9.84680I$	0
$u = -0.82496 + 1.19188I$ $a = -1.14346 - 1.72247I$ $b = -0.37895 + 1.44957I$	$1.5598 + 15.6517I$	0
$u = -0.82496 - 1.19188I$ $a = -1.14346 + 1.72247I$ $b = -0.37895 - 1.44957I$	$1.5598 - 15.6517I$	0
$u = 0.27583 + 1.49962I$ $a = 0.22042 - 2.09601I$ $b = -0.085375 + 1.278350I$	$8.14760 - 1.49578I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.27583 - 1.49962I$ $a = 0.22042 + 2.09601I$ $b = -0.085375 - 1.278350I$	$8.14760 + 1.49578I$	0
$u = 0.05777 + 1.52528I$ $a = -0.11056 + 2.18220I$ $b = -0.151020 - 1.302210I$	$8.53543 - 4.95851I$	0
$u = 0.05777 - 1.52528I$ $a = -0.11056 - 2.18220I$ $b = -0.151020 + 1.302210I$	$8.53543 + 4.95851I$	0
$u = 0.471301$ $a = 5.67876$ $b = 0.217221$	0.391402	-51.7770

II. $\boldsymbol{I_2^u = \langle -3u^2a + au + 3u^2 + 5b - 2a - u + 7,\ -4u^2a + a^2 + 2au + 7u^2 - 6a - 2u + 17,\ u^3 - u^2 + 2u - 1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^2 - u + 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} a \\ \frac{3}{5}u^2a - \frac{3}{5}u^2 + \cdots + \frac{2}{5}a - \frac{7}{5} \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -\frac{3}{5}u^2a + \frac{33}{5}u^2 + \cdots - \frac{7}{5}a + \frac{47}{5} \\ 2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -\frac{3}{5}u^2a + \frac{3}{5}u^2 + \cdots - \frac{7}{5}a + \frac{7}{5} \\ -\frac{3}{5}u^2a + \frac{3}{5}u^2 + \cdots - \frac{2}{5}a + \frac{7}{5} \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -\frac{3}{5}u^2a + \frac{3}{5}u^2 + \cdots - \frac{7}{5}a + \frac{12}{5} \\ -\frac{3}{5}u^2a + \frac{8}{5}u^2 + \cdots - \frac{2}{5}a + \frac{7}{5} \end{pmatrix}$$
$$a_9 = \begin{pmatrix} \frac{3}{5}u^2a - \frac{3}{5}u^2 + \cdots + \frac{7}{5}a - \frac{7}{5} \\ \frac{3}{5}u^2a - \frac{3}{5}u^2 + \cdots + \frac{2}{5}a - \frac{7}{5} \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^2 + 1 \\ u^2 - u + 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^2 + 4u - 4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.215080 + 1.307140I$ $a = -0.79801 + 1.99502I$ $b = -1.414210I$	$9.60386 - 2.82812I$	$3.50976 + 2.97945I$
$u = 0.215080 + 1.307140I$ $a = -0.28159 - 2.36019I$ $b = 1.414210I$	$9.60386 - 2.82812I$	$3.50976 + 2.97945I$
$u = 0.215080 - 1.307140I$ $a = -0.79801 - 1.99502I$ $b = 1.414210I$	$9.60386 + 2.82812I$	$3.50976 - 2.97945I$
$u = 0.215080 - 1.307140I$ $a = -0.28159 + 2.36019I$ $b = -1.414210I$	$9.60386 + 2.82812I$	$3.50976 - 2.97945I$
$u = 0.569840$ $a = 3.07960 + 2.94099I$ $b = 1.414210I$	5.46628	-3.01950
$u = 0.569840$ $a = 3.07960 - 2.94099I$ $b = -1.414210I$	5.46628	-3.01950

III. $\boldsymbol{I_3^u = \langle b,\ -2u^2 + a - u - 3,\ u^3 + u^2 + 2u + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u^2 + 2u + 12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.215080 + 1.307140I$ $a = -0.539798 + 0.182582I$ $b = 0$	$4.66906 + 2.82812I$	$4.92040 + 0.36516I$
$u = -0.215080 - 1.307140I$ $a = -0.539798 - 0.182582I$ $b = 0$	$4.66906 - 2.82812I$	$4.92040 - 0.36516I$
$u = -0.569840$ $a = 3.07960$ $b = 0$	0.531480	12.1590

IV. $I_1^v = \langle a,\ b - 3v + 1,\ 3v^2 - 3v + 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4v - \frac{25}{3}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

	Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v=$	$0.500000+0.288675I$		
$a=$	0	$-1.64493-2.02988I$	$-6.33333+1.15470I$
$b=$	$0.500000+0.866025I$		
$v=$	$0.500000-0.288675I$		
$a=$	0	$-1.64493+2.02988I$	$-6.33333-1.15470I$
$b=$	$0.500000-0.866025I$		

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^2)(u^3-u^2+2u-1)^3(u^{64}+34u^{63}+\cdots+295u+81)$
c_2	$((u-1)^2)(u^3+u^2-1)^3(u^{64}-6u^{63}+\cdots-41u+9)$
c_3	$u^2(u^3-u^2+2u-1)(u^3+u^2+2u+1)^2(u^{64}+2u^{63}+\cdots-36u-36)$
c_4	$((u+1)^2)(u^3-u^2+1)^3(u^{64}-6u^{63}+\cdots-41u+9)$
c_5	$u^3(u^2+2)^3(u^2+u+1)(u^{64}+2u^{63}+\cdots+14008u+1448)$
c_6	$u^3(u^2+2)^3(u^2-u+1)(u^{64}-2u^{63}+\cdots-8u+8)$
c_7	$u^2(u^3-u^2+2u-1)^2(u^3+u^2+2u+1)(u^{64}+2u^{63}+\cdots-36u-36)$
c_8	$((u-1)^6)(u+1)^3(u^2+u+1)(u^{64}-5u^{63}+\cdots+77u-49)$
c_9, c_{10}	$u^3(u^2+2)^3(u^2+u+1)(u^{64}-2u^{63}+\cdots-8u+8)$
c_{11}, c_{12}	$((u-1)^3)(u+1)^6(u^2-u+1)(u^{64}-5u^{63}+\cdots+77u-49)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^2)(y^3+3y^2+2y-1)^3(y^{64}-2y^{63}+\cdots-197995y+6561)$
c_2, c_4	$((y-1)^2)(y^3-y^2+2y-1)^3(y^{64}-34y^{63}+\cdots-295y+81)$
c_3, c_7	$y^2(y^3+3y^2+2y-1)^3(y^{64}+24y^{63}+\cdots+8136y+1296)$
c_5	$y^3(y+2)^6(y^2+y+1)(y^{64}-28y^{63}+\cdots-37440y+2096704)$
c_6, c_9, c_{10}	$y^3(y+2)^6(y^2+y+1)(y^{64}+56y^{63}+\cdots-2240y+64)$
c_8, c_{11}, c_{12}	$((y-1)^9)(y^2+y+1)(y^{64}-25y^{63}+\cdots-103635y+2401)$