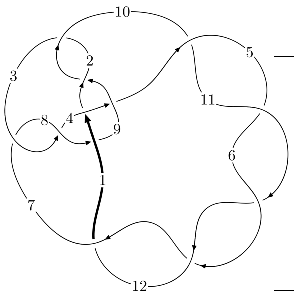
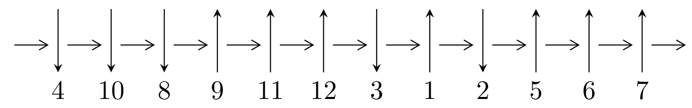
$12a_{1176}$ ($K12a_{1176}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle -49u^{23} + 263u^{22} + \cdots + 4b + 236,\ 273u^{23} - 1433u^{22} + \cdots + 8a - 1244,\ u^{24} - 7u^{23} + \cdots - 32u + 8 \rangle \\
I_2^u &= \langle -1.44275 \times 10^{19} a^5u^7 - 5.68398 \times 10^{19} a^4u^7 + \cdots - 3.60536 \times 10^{20} a + 7.51047 \times 10^{20}, \\
&\quad 6u^7a^4 - 4u^7a^3 + \cdots - 37a - 45,\ u^8 + u^7 - 5u^6 - 4u^5 + 7u^4 + 4u^3 - 2u^2 - 2u - 1 \rangle \\
I_3^u &= \langle -u^8 + 6u^6 - u^5 - 11u^4 + 3u^3 + 6u^2 + b - u, \\
&\quad - u^{12} - u^{11} + 10u^{10} + 9u^9 - 37u^8 - 31u^7 + 61u^6 + 52u^5 - 41u^4 - 42u^3 + 5u^2 + a + 10u + 2, \\
&\quad u^{13} - 10u^{11} + 38u^9 + u^8 - 68u^7 - 6u^6 + 57u^5 + 11u^4 - 18u^3 - 6u^2 + 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 85 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. $I_1^u = \langle -49u^{23} + 263u^{22} + \cdots + 4b + 236,\ 273u^{23} - 1433u^{22} + \cdots + 8a - 1244,\ u^{24} - 7u^{23} + \cdots - 32u + 8 \rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -\frac{273}{8}u^{23} + \frac{1433}{8}u^{22} + \cdots - 532u + \frac{311}{2} \\ \frac{49}{4}u^{23} - \frac{263}{4}u^{22} + \cdots + \frac{403}{2}u - 59 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} \frac{303}{8}u^{23} - \frac{1559}{8}u^{22} + \cdots + 565u - \frac{325}{2} \\ -\frac{239}{4}u^{23} + \frac{1233}{4}u^{22} + \cdots - \frac{1791}{2}u + 259 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 26.2500u^{23} - 135.750u^{22} + \cdots + 395.500u - 113.500 \\ -\frac{79}{2}u^{23} + 205u^{22} + \cdots - \frac{1201}{2}u + 174 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -15.2500u^{23} + 81.7500u^{22} + \cdots - 251.500u + 73.5000 \\ 2u^{23} - \frac{25}{2}u^{22} + \cdots + \frac{93}{2}u - 14 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 51u^{23} - \frac{1075}{4}u^{22} + \cdots + \frac{3227}{4}u - 235 \\ -\frac{129}{4}u^{23} + \frac{685}{4}u^{22} + \cdots - 518u + 152 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^3 + 2u \\ u^5 - 3u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 81u^{23} - 432u^{22} + 8u^{21} + 3419u^{20} - 3447u^{19} - 11374u^{18} + 17236u^{17} + 18946u^{16} - 40556u^{15} - 11583u^{14} + 53859u^{13} - 14035u^{12} - 38970u^{11} + 33571u^{10} + 7682u^9 - 25123u^8 + 11838u^7 + 5007u^6 - 9421u^5 + 3205u^4 + 124u^3 - 1814u^2 + 1300u - 374$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{24} - 18u^{23} + \cdots + 2816u - 256$
c_2, c_3, c_7 c_9	$u^{24} - u^{23} + \cdots + u - 1$
c_4, c_8	$u^{24} - 6u^{22} + \cdots - 2u + 1$
c_5, c_6, c_{10} c_{11}, c_{12}	$u^{24} - 7u^{23} + \cdots - 32u + 8$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{24} - 10y^{23} + \cdots + 262144y + 65536$
c_2, c_3, c_7 c_9	$y^{24} - 13y^{23} + \cdots - 3y + 1$
c_4, c_8	$y^{24} - 12y^{23} + \cdots - 30y + 1$
c_5, c_6, c_{10} c_{11}, c_{12}	$y^{24} - 31y^{23} + \cdots - 160y + 64$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.907236 + 0.435980I$ $a = -1.41635 + 0.54146I$ $b = 0.86042 - 1.37712I$	$1.84093 - 5.17326I$	$6.63681 + 8.84471I$
$u = -0.907236 - 0.435980I$ $a = -1.41635 - 0.54146I$ $b = 0.86042 + 1.37712I$	$1.84093 + 5.17326I$	$6.63681 - 8.84471I$
$u = -1.110420 + 0.108192I$ $a = -0.180104 - 0.437950I$ $b = 0.385921 - 0.238265I$	$5.73283 - 1.83988I$	$11.28356 + 2.30712I$
$u = -1.110420 - 0.108192I$ $a = -0.180104 + 0.437950I$ $b = 0.385921 + 0.238265I$	$5.73283 + 1.83988I$	$11.28356 - 2.30712I$
$u = 0.590338 + 0.652762I$ $a = -1.171600 - 0.599827I$ $b = -0.006346 + 1.289090I$	$-4.24228 - 4.48435I$	$-0.15247 + 3.55403I$
$u = 0.590338 - 0.652762I$ $a = -1.171600 + 0.599827I$ $b = -0.006346 - 1.289090I$	$-4.24228 + 4.48435I$	$-0.15247 - 3.55403I$
$u = -1.048400 + 0.428308I$ $a = 1.79332 - 0.68716I$ $b = -0.92291 + 1.62751I$	$-1.26907 - 12.76890I$	$2.91843 + 8.75350I$
$u = -1.048400 - 0.428308I$ $a = 1.79332 + 0.68716I$ $b = -0.92291 - 1.62751I$	$-1.26907 + 12.76890I$	$2.91843 - 8.75350I$
$u = 0.242387 + 0.711300I$ $a = 0.388011 - 0.226722I$ $b = -0.46013 - 1.55775I$	$-5.25345 + 8.92776I$	$-1.31883 - 7.64206I$
$u = 0.242387 - 0.711300I$ $a = 0.388011 + 0.226722I$ $b = -0.46013 + 1.55775I$	$-5.25345 - 8.92776I$	$-1.31883 + 7.64206I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.33594$ $a = 1.98547$ $b = -1.43379$	2.74446	-2.28800
$u = -0.016484 + 0.578692I$ $a = 0.554305 + 0.154675I$ $b = 0.093232 + 1.039400I$	$-0.87333 + 1.64838I$	$3.09303 - 4.00385I$
$u = -0.016484 - 0.578692I$ $a = 0.554305 - 0.154675I$ $b = 0.093232 - 1.039400I$	$-0.87333 - 1.64838I$	$3.09303 + 4.00385I$
$u = -1.43642 + 0.29668I$ $a = -1.124190 + 0.697341I$ $b = 0.437158 - 0.696629I$	$2.30586 + 0.99863I$	$1.91156 - 3.99663I$
$u = -1.43642 - 0.29668I$ $a = -1.124190 - 0.697341I$ $b = 0.437158 + 0.696629I$	$2.30586 - 0.99863I$	$1.91156 + 3.99663I$
$u = 0.417711 + 0.252673I$ $a = 0.709564 + 0.673149I$ $b = 0.223162 - 0.102887I$	$0.898603 + 0.583790I$	$8.28194 - 3.24260I$
$u = 0.417711 - 0.252673I$ $a = 0.709564 - 0.673149I$ $b = 0.223162 + 0.102887I$	$0.898603 - 0.583790I$	$8.28194 + 3.24260I$
$u = 1.69916 + 0.12248I$ $a = -1.96502 - 1.07970I$ $b = 1.40767 + 1.48523I$	$10.97660 + 7.39354I$	$6.46638 - 6.79577I$
$u = 1.69916 - 0.12248I$ $a = -1.96502 + 1.07970I$ $b = 1.40767 - 1.48523I$	$10.97660 - 7.39354I$	$6.46638 + 6.79577I$
$u = 1.73198 + 0.11712I$ $a = 2.05259 + 1.20136I$ $b = -1.29425 - 1.66429I$	$8.5296 + 15.0189I$	$0. - 7.46096I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.73198 - 0.11712I$ $a = 2.05259 - 1.20136I$ $b = -1.29425 + 1.66429I$	$8.5296 - 15.0189I$	$0. + 7.46096I$
$u = 1.74907 + 0.02053I$ $a = -0.329253 - 0.013460I$ $b = 0.383663 + 0.561786I$	$16.0549 + 2.3419I$	$10.98491 + 0.I$
$u = 1.74907 - 0.02053I$ $a = -0.329253 + 0.013460I$ $b = 0.383663 - 0.561786I$	$16.0549 - 2.3419I$	$10.98491 + 0.I$
$u = 1.84069$ $a = -0.608035$ $b = 0.218649$	15.0349	0

II. $\boldsymbol{I^u_2 = \langle -1.44 \times 10^{19} a^5 u^7 - 5.68 \times 10^{19} a^4 u^7 + \cdots - 3.61 \times 10^{20} a + 7.51 \times 10^{20},\ 6u^7 a^4 - 4u^7 a^3 + \cdots - 37a - 45,\ u^8 + u^7 + \cdots - 2u - 1 \rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} a \\ 0.0404307a^5u^7 + 0.159284a^4u^7 + \cdots + 1.01034a - 2.10469 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -0.148451a^5u^7 + 0.103349a^4u^7 + \cdots + 0.884112a + 0.377445 \\ 0.188881a^5u^7 + 0.0559350a^4u^7 + \cdots + 1.12623a - 2.48213 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.0237472a^5u^7 - 0.301682a^4u^7 + \cdots - 1.09617a + 1.05392 \\ 0.246102a^5u^7 - 0.461154a^4u^7 + \cdots + 0.187318a + 1.13432 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.0788423a^5u^7 + 0.0602619a^4u^7 + \cdots - 0.128977a - 1.90494 \\ 0.0146164a^5u^7 + 0.197157a^4u^7 + \cdots + 1.71940a - 1.98699 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.352334a^5u^7 - 0.681823a^4u^7 + \cdots + 0.871371a + 0.687129 \\ 0.233033a^5u^7 - 0.00868867a^4u^7 + \cdots + 0.931401a - 2.76607 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^3 + 2u \\ u^5 - 3u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{20156225182067388064}{50977871582846282497}u^7a^5 + \frac{29676483013256697332}{50977871582846282497}u^7a^4 + \cdots + \frac{21731100052659838880}{50977871582846282497}a + \frac{18295513183922830261 8}{50977871582846282497}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^3+u^2-1)^{16}$
c_2, c_3, c_7 c_9	$u^{48}+u^{47}+\cdots+628u+199$
c_4, c_8	$u^{48}+3u^{47}+\cdots-34u-1$
c_5, c_6, c_{10} c_{11}, c_{12}	$(u^8+u^7-5u^6-4u^5+7u^4+4u^3-2u^2-2u-1)^6$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^3 - y^2 + 2y - 1)^{16}$
c_2, c_3, c_7 c_9	$y^{48} - 33y^{47} + \cdots - 434980y + 39601$
c_4, c_8	$y^{48} + 11y^{47} + \cdots - 668y + 1$
c_5, c_6, c_{10} c_{11}, c_{12}	$(y^8 - 11y^7 + 47y^6 - 98y^5 + 103y^4 - 50y^3 + 6y^2 + 1)^6$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.008780 + 0.254919I$ $a = -0.166634 - 0.860931I$ $b = -0.251079 - 0.246323I$	$2.43453 + 6.46095I$	$5.93215 - 7.49747I$
$u = 1.008780 + 0.254919I$ $a = 0.980017 + 0.579991I$ $b = -0.240136 - 0.202961I$	$2.43453 + 0.80471I$	$5.93215 - 1.53858I$
$u = 1.008780 + 0.254919I$ $a = 1.271630 + 0.216056I$ $b = -0.266125 - 1.193000I$	$-1.70306 + 3.63283I$	$-0.59711 - 4.51802I$
$u = 1.008780 + 0.254919I$ $a = -0.68837 - 1.35983I$ $b = -0.25696 + 1.69313I$	$-1.70306 + 3.63283I$	$-0.59711 - 4.51802I$
$u = 1.008780 + 0.254919I$ $a = 1.86379 + 0.32622I$ $b = -1.104540 - 0.808153I$	$2.43453 + 0.80471I$	$5.93215 - 1.53858I$
$u = 1.008780 + 0.254919I$ $a = -2.23689 - 0.90869I$ $b = 1.20089 + 1.63498I$	$2.43453 + 6.46095I$	$5.93215 - 7.49747I$
$u = 1.008780 - 0.254919I$ $a = -0.166634 + 0.860931I$ $b = -0.251079 + 0.246323I$	$2.43453 - 6.46095I$	$5.93215 + 7.49747I$
$u = 1.008780 - 0.254919I$ $a = 0.980017 - 0.579991I$ $b = -0.240136 + 0.202961I$	$2.43453 - 0.80471I$	$5.93215 + 1.53858I$
$u = 1.008780 - 0.254919I$ $a = 1.271630 - 0.216056I$ $b = -0.266125 + 1.193000I$	$-1.70306 - 3.63283I$	$-0.59711 + 4.51802I$
$u = 1.008780 - 0.254919I$ $a = -0.68837 + 1.35983I$ $b = -0.25696 - 1.69313I$	$-1.70306 - 3.63283I$	$-0.59711 + 4.51802I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.008780 - 0.254919I$ $a = 1.86379 - 0.32622I$ $b = -1.104540 + 0.808153I$	$2.43453 - 0.80471I$	$5.93215 + 1.53858I$
$u = 1.008780 - 0.254919I$ $a = -2.23689 + 0.90869I$ $b = 1.20089 - 1.63498I$	$2.43453 - 6.46095I$	$5.93215 + 7.49747I$
$u = -0.772257$ $a = -1.364720 + 0.339718I$ $b = 0.223038 - 1.310810I$	$-0.55639 - 2.82812I$	$2.51294 + 2.97945I$
$u = -0.772257$ $a = -1.364720 - 0.339718I$ $b = 0.223038 + 1.310810I$	$-0.55639 + 2.82812I$	$2.51294 - 2.97945I$
$u = -0.772257$ $a = 1.70574 + 1.73282I$ $b = -0.72520 - 1.74104I$	$-0.55639 - 2.82812I$	$2.51294 + 2.97945I$
$u = -0.772257$ $a = 1.70574 - 1.73282I$ $b = -0.72520 + 1.74104I$	$-0.55639 + 2.82812I$	$2.51294 - 2.97945I$
$u = -0.772257$ $a = -2.61907$ $b = 0.283127$	-4.69397	-4.01630
$u = -0.772257$ $a = 3.52258$ $b = -1.61356$	-4.69397	-4.01630
$u = -0.240178 + 0.426557I$ $a = -0.900832 - 0.716113I$ $b = 0.49484 - 1.58079I$	$-1.41940 - 4.10344I$	$0.69028 + 8.06462I$
$u = -0.240178 + 0.426557I$ $a = -0.757692 - 0.900356I$ $b = -0.585477 - 1.229040I$	$-5.55698 - 1.27532I$	$-5.83898 + 5.08518I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.240178+0.426557I$ $a=\ \ 0.540126-0.065165I$ $b=-0.772436+0.638956I$	$-1.41940+1.55280I$	$0.69028+2.10573I$
$u=-0.240178+0.426557I$ $a=\ \ 1.70370+0.18215I$ $b=-0.068775+1.092420I$	$-1.41940+1.55280I$	$0.69028+2.10573I$
$u=-0.240178+0.426557I$ $a=-1.26218+1.32424I$ $b=-0.252731-0.328836I$	$-1.41940-4.10344I$	$0.69028+8.06462I$
$u=-0.240178+0.426557I$ $a=\ \ 0.86475+1.86092I$ $b=-0.208159+0.992906I$	$-5.55698-1.27532I$	$-5.83898+5.08518I$
$u=-0.240178-0.426557I$ $a=-0.900832+0.716113I$ $b=\ \ 0.49484+1.58079I$	$-1.41940+4.10344I$	$0.69028-8.06462I$
$u=-0.240178-0.426557I$ $a=-0.757692+0.900356I$ $b=-0.585477+1.229040I$	$-5.55698+1.27532I$	$-5.83898-5.08518I$
$u=-0.240178-0.426557I$ $a=\ \ 0.540126+0.065165I$ $b=-0.772436-0.638956I$	$-1.41940-1.55280I$	$0.69028-2.10573I$
$u=-0.240178-0.426557I$ $a=\ \ 1.70370-0.18215I$ $b=-0.068775-1.092420I$	$-1.41940-1.55280I$	$0.69028-2.10573I$
$u=-0.240178-0.426557I$ $a=-1.26218-1.32424I$ $b=-0.252731+0.328836I$	$-1.41940+4.10344I$	$0.69028-8.06462I$
$u=-0.240178-0.426557I$ $a=\ \ 0.86475-1.86092I$ $b=-0.208159-0.992906I$	$-5.55698+1.27532I$	$-5.83898-5.08518I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.67992$ $a = -1.22399 + 0.97102I$ $b = 0.58572 - 1.53466I$	$8.26521 - 2.82812I$	$3.33185 + 2.97945I$
$u = 1.67992$ $a = -1.22399 - 0.97102I$ $b = 0.58572 + 1.53466I$	$8.26521 + 2.82812I$	$3.33185 - 2.97945I$
$u = 1.67992$ $a = -2.06031$ $b = 0.835472$	4.12763	-3.19740
$u = 1.67992$ $a = 1.71698 + 2.02515I$ $b = -1.19582 - 2.17322I$	$8.26521 - 2.82812I$	$3.33185 + 2.97945I$
$u = 1.67992$ $a = 1.71698 - 2.02515I$ $b = -1.19582 + 2.17322I$	$8.26521 + 2.82812I$	$3.33185 - 2.97945I$
$u = 1.67992$ $a = 3.36647$ $b = -2.45190$	4.12763	-3.19740
$u = -1.72243 + 0.06628I$ $a = 1.108900 - 0.735799I$ $b = -0.423485 + 1.321650I$	$8.02419 - 4.93524I$	$-0.03508 + 2.99422I$
$u = -1.72243 + 0.06628I$ $a = 0.564850 - 0.069165I$ $b = -0.193774 - 0.376350I$	$12.16180 - 2.10712I$	$6.49419 + 0.01478I$
$u = -1.72243 + 0.06628I$ $a = 0.091340 + 0.181993I$ $b = -0.257409 + 0.636530I$	$12.1618 - 7.7634I$	$6.49419 + 5.97367I$
$u = -1.72243 + 0.06628I$ $a = -0.62469 + 1.84935I$ $b = 0.07951 - 2.00864I$	$8.02419 - 4.93524I$	$-0.03508 + 2.99422I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.72243+0.06628I$ $a=\ \ 2.17225-0.62127I$ $b=-1.51193+0.90608I$	$12.16180-2.10712I$	$6.49419+0.01478I$
$u=-1.72243+0.06628I$ $a=-2.46292+1.34903I$ $b=\ \ 1.70346-1.68486I$	$12.1618-7.7634I$	$6.49419+5.97367I$
$u=-1.72243-0.06628I$ $a=\ \ 1.108900+0.735799I$ $b=-0.423485-1.321650I$	$8.02419+4.93524I$	$-0.03508-2.99422I$
$u=-1.72243-0.06628I$ $a=\ \ 0.564850+0.069165I$ $b=-0.193774+0.376350I$	$12.16180+2.10712I$	$6.49419-0.01478I$
$u=-1.72243-0.06628I$ $a=\ \ 0.091340-0.181993I$ $b=-0.257409-0.636530I$	$12.1618+7.7634I$	$6.49419-5.97367I$
$u=-1.72243-0.06628I$ $a=-0.62469-1.84935I$ $b=\ \ 0.07951+2.00864I$	$8.02419+4.93524I$	$-0.03508-2.99422I$
$u=-1.72243-0.06628I$ $a=\ \ 2.17225+0.62127I$ $b=-1.51193-0.90608I$	$12.16180+2.10712I$	$6.49419-0.01478I$
$u=-1.72243-0.06628I$ $a=-2.46292-1.34903I$ $b=\ \ 1.70346+1.68486I$	$12.1618+7.7634I$	$6.49419-5.97367I$

III. $I_3^u = \langle -u^8+6u^6-u^5-11u^4+3u^3+6u^2+b-u,\ -u^{12}-u^{11}+\cdots+a+2,\ u^{13}-10u^{11}+\cdots-6u^2+1\rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_6 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}u\\-u^3+u\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-u^2+1\\u^4-2u^2\end{pmatrix}$$
$$a_2 = \begin{pmatrix}u^{12}+u^{11}+\cdots-10u-2\\u^8-6u^6+u^5+11u^4-3u^3-6u^2+u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-u\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}u^{12}-10u^{10}+\cdots-9u-1\\u^{11}-8u^9+u^8+23u^7-5u^6-28u^5+7u^4+12u^3-2u^2-1\end{pmatrix}$$
$$a_8 = \begin{pmatrix}u^{10}+u^9-8u^8-7u^7+23u^6+18u^5-27u^4-21u^3+8u^2+10u+3\\-u^{12}+9u^{10}-u^9-30u^8+5u^7+45u^6-6u^5-29u^4-u^3+6u^2+2u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}u^{10}-8u^8-u^7+23u^6+7u^5-28u^4-15u^3+11u^2+10u+2\\-u^{12}+9u^{10}-30u^8-u^7+45u^6+5u^5-29u^4-7u^3+6u^2+2u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-u^{12}-u^{11}+\cdots+7u+5\\-u^3+2u\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u^3+2u\\u^5-3u^3+u\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= 4u^{12}-38u^{10}+131u^8+3u^7-193u^6-21u^5+101u^4+40u^3+8u^2-13u-8$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{13} - 5u^{12} + \cdots + 4u^2 - 1$
c_2, c_7	$u^{13} + u^{12} + \cdots + u + 1$
c_3, c_9	$u^{13} - u^{12} + \cdots + u - 1$
c_4, c_8	$u^{13} + u^{10} - 4u^9 + u^8 - u^7 + 3u^5 - 2u^4 + u^3 - 2u^2 + 1$
c_5, c_6	$u^{13} - 10u^{11} + 38u^9 + u^8 - 68u^7 - 6u^6 + 57u^5 + 11u^4 - 18u^3 - 6u^2 + 1$
c_{10}, c_{11}, c_{12}	$u^{13} - 10u^{11} + 38u^9 - u^8 - 68u^7 + 6u^6 + 57u^5 - 11u^4 - 18u^3 + 6u^2 - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{13} - 9y^{12} + \cdots + 8y - 1$
c_2, c_3, c_7 c_9	$y^{13} - 13y^{12} + \cdots + 13y - 1$
c_4, c_8	$y^{13} - 8y^{11} - 3y^{10} + 20y^9 + 9y^8 - 19y^7 - 6y^6 + 9y^5 - 7y^3 + 4y - 1$
c_5, c_6, c_{10} c_{11}, c_{12}	$y^{13} - 20y^{12} + \cdots + 12y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.900642+0.211290I$ $a=-0.806576+0.876637I$ $b=\ \ 0.07621-1.64069I$	$0.15794-4.22361I$	$4.67376+7.74732I$
$u=-0.900642-0.211290I$ $a=-0.806576-0.876637I$ $b=\ \ 0.07621+1.64069I$	$0.15794+4.22361I$	$4.67376-7.74732I$
$u=\ \ 0.835287$ $a=\ \ 3.11335$ $b=-1.13883$	-4.06419	11.1840
$u=\ \ 1.349780+0.188354I$ $a=\ \ 1.53326+0.73818I$ $b=-1.030280-0.706563I$	$3.33191-0.41146I$	$8.75330+4.03305I$
$u=\ \ 1.349780-0.188354I$ $a=\ \ 1.53326-0.73818I$ $b=-1.030280+0.706563I$	$3.33191+0.41146I$	$8.75330-4.03305I$
$u=-1.48165$ $a=-1.60389$ $b=\ \ 0.723464$	0.435715	-0.725220
$u=-0.246497+0.330591I$ $a=\ \ 2.16431-0.42060I$ $b=-0.44057+1.37835I$	$-2.02748+2.39614I$	$-5.69138-3.50014I$
$u=-0.246497-0.330591I$ $a=\ \ 2.16431+0.42060I$ $b=-0.44057-1.37835I$	$-2.02748-2.39614I$	$-5.69138+3.50014I$
$u=\ \ 0.333287$ $a=-4.10575$ $b=-0.312491$	-5.76311	-9.04720
$u=-1.68760$ $a=\ \ 2.68033$ $b=-1.63543$	4.96623	8.76410

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.70777 + 0.05845I$ $a = -0.84719 - 1.38187I$ $b = 0.35559 + 1.80257I$	$9.50181 + 5.30924I$	$6.33383 - 5.02700I$
$u = 1.70777 - 0.05845I$ $a = -0.84719 + 1.38187I$ $b = 0.35559 - 1.80257I$	$9.50181 - 5.30924I$	$6.33383 + 5.02700I$
$u = -1.82016$ $a = 0.828351$ $b = -0.558619$	15.3957	16.6850

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^3+u^2-1)^{16})(u^{13}-5u^{12}+\cdots+4u^2-1)$ $\cdot(u^{24}-18u^{23}+\cdots+2816u-256)$
c_2, c_7	$(u^{13}+u^{12}+\cdots+u+1)(u^{24}-u^{23}+\cdots+u-1)$ $\cdot(u^{48}+u^{47}+\cdots+628u+199)$
c_3, c_9	$(u^{13}-u^{12}+\cdots+u-1)(u^{24}-u^{23}+\cdots+u-1)$ $\cdot(u^{48}+u^{47}+\cdots+628u+199)$
c_4, c_8	$(u^{13}+u^{10}-4u^9+u^8-u^7+3u^5-2u^4+u^3-2u^2+1)$ $\cdot(u^{24}-6u^{22}+\cdots-2u+1)(u^{48}+3u^{47}+\cdots-34u-1)$
c_5, c_6	$(u^8+u^7-5u^6-4u^5+7u^4+4u^3-2u^2-2u-1)^6$ $\cdot(u^{13}-10u^{11}+38u^9+u^8-68u^7-6u^6+57u^5+11u^4-18u^3-6u^2+1)$ $\cdot(u^{24}-7u^{23}+\cdots-32u+8)$
c_{10}, c_{11}, c_{12}	$(u^8+u^7-5u^6-4u^5+7u^4+4u^3-2u^2-2u-1)^6$ $\cdot(u^{13}-10u^{11}+38u^9-u^8-68u^7+6u^6+57u^5-11u^4-18u^3+6u^2-1)$ $\cdot(u^{24}-7u^{23}+\cdots-32u+8)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^3-y^2+2y-1)^{16})(y^{13}-9y^{12}+\cdots+8y-1)$ $\cdot(y^{24}-10y^{23}+\cdots+262144y+65536)$
c_2, c_3, c_7 c_9	$(y^{13}-13y^{12}+\cdots+13y-1)(y^{24}-13y^{23}+\cdots-3y+1)$ $\cdot(y^{48}-33y^{47}+\cdots-434980y+39601)$
c_4, c_8	$(y^{13}-8y^{11}-3y^{10}+20y^9+9y^8-19y^7-6y^6+9y^5-7y^3+4y-1)$ $\cdot(y^{24}-12y^{23}+\cdots-30y+1)(y^{48}+11y^{47}+\cdots-668y+1)$
c_5, c_6, c_{10} c_{11}, c_{12}	$(y^8-11y^7+47y^6-98y^5+103y^4-50y^3+6y^2+1)^6$ $\cdot(y^{13}-20y^{12}+\cdots+12y-1)(y^{24}-31y^{23}+\cdots-160y+64)$