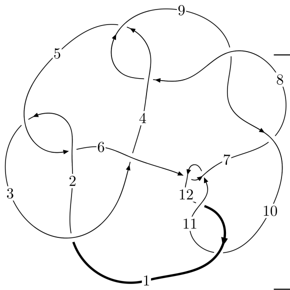
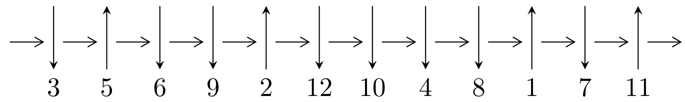
$12a_{0028}$ ($K12a_{0028}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{73} - 2u^{72} + \cdots + b - 1,\ -u^{75} + 3u^{74} + \cdots + 2a - 1,\ u^{76} - 3u^{75} + \cdots - 4u + 1\rangle$$
$$I_2^u = \langle b,\ a + u + 1,\ u^2 + u + 1\rangle$$
$$I_3^u = \langle b,\ a - 1,\ u^{15} + 3u^{13} + 6u^{11} + u^{10} + 7u^9 + 2u^8 + 6u^7 + 3u^6 + 5u^5 + 2u^4 + 3u^3 + u^2 + 2u + 1\rangle$$
$$I_4^u = \langle b,\ a - 1,\ u^2 + u + 1\rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 95 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.

$$I_1^u = \langle u^{73} - 2u^{72} + \cdots + b - 1,\ -u^{75} + 3u^{74} + \cdots + 2a - 1,\ u^{76} - 3u^{75} + \cdots - 4u + 1\rangle$$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} \frac{1}{2}u^{75} - \frac{3}{2}u^{74} + \cdots + 4u + \frac{1}{2} \\ -u^{73} + 2u^{72} + \cdots - 3u + 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -\frac{1}{2}u^{75} + \frac{3}{2}u^{74} + \cdots + 2u + \frac{5}{2} \\ -u^{37} - 7u^{35} + \cdots - 4u^2 - u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^{75} - u^{74} + \cdots + 2u + 1 \\ 3u^{75} - \frac{11}{2}u^{74} + \cdots + \frac{5}{2}u - \frac{1}{2} \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^{75} + 3u^{74} + \cdots - 8u + 1 \\ -\frac{1}{2}u^{74} + u^{73} + \cdots + \frac{5}{2}u - \frac{1}{2} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^4 + u^2 + 1 \\ u^4 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^9 - 2u^7 - 3u^5 - 2u^3 - u \\ -u^9 - u^7 - u^5 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^{14} + 3u^{12} + 6u^{10} + 7u^8 + 6u^6 + 4u^4 + 2u^2 + 1 \\ u^{14} + 2u^{12} + 3u^{10} + 2u^8 - u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{11}{2}u^{75} - 19u^{74} + \cdots + \frac{27}{2}u - 7$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{76} + 35u^{75} + \cdots - 12u^2 + 1$
c_2, c_5	$u^{76} + 3u^{75} + \cdots + 2u + 1$
c_3	$u^{76} - 3u^{75} + \cdots - 2u + 1$
c_4, c_8	$u^{76} + 4u^{75} + \cdots + 16u + 16$
c_6, c_{11}	$u^{76} - 3u^{75} + \cdots - 4u + 1$
c_7, c_9	$u^{76} + 20u^{75} + \cdots + 1152u + 256$
c_{10}, c_{12}	$u^{76} - 27u^{75} + \cdots + 156u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{76} + 15y^{75} + \cdots - 24y + 1$
c_2, c_5	$y^{76} + 35y^{75} + \cdots - 12y^2 + 1$
c_3	$y^{76} - 5y^{75} + \cdots - 96y + 1$
c_4, c_8	$y^{76} - 20y^{75} + \cdots - 1152y + 256$
c_6, c_{11}	$y^{76} + 27y^{75} + \cdots + 156y^2 + 1$
c_7, c_9	$y^{76} + 60y^{75} + \cdots + 712704y + 65536$
c_{10}, c_{12}	$y^{76} + 47y^{75} + \cdots + 312y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.820067 + 0.580500I$ $a = -1.05528 - 2.33587I$ $b = 0.24200 - 2.52038I$	$0.28459 + 11.09290I$	0
$u = 0.820067 - 0.580500I$ $a = -1.05528 + 2.33587I$ $b = 0.24200 + 2.52038I$	$0.28459 - 11.09290I$	0
$u = 0.784162 + 0.610183I$ $a = 0.218261 - 1.162730I$ $b = 1.28826 - 0.84685I$	$-2.88911 + 3.62351I$	0
$u = 0.784162 - 0.610183I$ $a = 0.218261 + 1.162730I$ $b = 1.28826 + 0.84685I$	$-2.88911 - 3.62351I$	0
$u = 0.804404 + 0.574368I$ $a = 1.08811 + 1.63791I$ $b = -0.04056 + 1.69896I$	$2.31596 + 5.81698I$	0
$u = 0.804404 - 0.574368I$ $a = 1.08811 - 1.63791I$ $b = -0.04056 - 1.69896I$	$2.31596 - 5.81698I$	0
$u = -0.266450 + 1.003770I$ $a = -0.051209 - 0.894123I$ $b = 0.382872 + 0.726383I$	$-0.37911 + 6.19852I$	0
$u = -0.266450 - 1.003770I$ $a = -0.051209 + 0.894123I$ $b = 0.382872 - 0.726383I$	$-0.37911 - 6.19852I$	0
$u = -0.758972 + 0.572804I$ $a = -1.15206 + 2.58616I$ $b = 0.38835 + 2.61192I$	$1.30562 - 4.85760I$	$-4.00000 + 2.81637I$
$u = -0.758972 - 0.572804I$ $a = -1.15206 - 2.58616I$ $b = 0.38835 - 2.61192I$	$1.30562 + 4.85760I$	$-4.00000 - 2.81637I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.614417 + 0.865433I$ $a = 0.80686 - 1.36588I$ $b = -0.59195 - 1.44117I$	$-0.59560 + 2.40827I$	0
$u = -0.614417 - 0.865433I$ $a = 0.80686 + 1.36588I$ $b = -0.59195 + 1.44117I$	$-0.59560 - 2.40827I$	0
$u = -0.682974 + 0.815558I$ $a = -2.87082 + 1.38786I$ $b = -0.95465 + 3.40719I$	$-3.11243 - 0.72332I$	0
$u = -0.682974 - 0.815558I$ $a = -2.87082 - 1.38786I$ $b = -0.95465 - 3.40719I$	$-3.11243 + 0.72332I$	0
$u = -0.215813 + 0.910718I$ $a = 0.265261 + 0.121375I$ $b = -0.586596 - 0.385311I$	$1.49867 + 2.13083I$	$0. - 5.38892I$
$u = -0.215813 - 0.910718I$ $a = 0.265261 - 0.121375I$ $b = -0.586596 + 0.385311I$	$1.49867 - 2.13083I$	$0. + 5.38892I$
$u = 0.737672 + 0.767805I$ $a = 1.05157 + 1.41551I$ $b = -0.22256 + 1.66158I$	$-4.16374 + 0.54928I$	0
$u = 0.737672 - 0.767805I$ $a = 1.05157 - 1.41551I$ $b = -0.22256 - 1.66158I$	$-4.16374 - 0.54928I$	0
$u = -0.744701 + 0.542472I$ $a = 1.18253 - 1.67888I$ $b = -0.01927 - 1.66588I$	$3.09050 + 0.22669I$	$-1.99230 - 2.08336I$
$u = -0.744701 - 0.542472I$ $a = 1.18253 + 1.67888I$ $b = -0.01927 + 1.66588I$	$3.09050 - 0.22669I$	$-1.99230 + 2.08336I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.774528 + 0.755664I$ $a = -1.82547 - 1.78464I$ $b = -0.27849 - 2.85903I$	$-6.90483 + 4.88361I$	0
$u = 0.774528 - 0.755664I$ $a = -1.82547 + 1.78464I$ $b = -0.27849 + 2.85903I$	$-6.90483 - 4.88361I$	0
$u = -0.636867 + 0.654546I$ $a = 1.10871 + 1.19060I$ $b = 1.71940 + 0.17017I$	$-1.56601 + 1.58828I$	$-7.89253 - 2.90076I$
$u = -0.636867 - 0.654546I$ $a = 1.10871 - 1.19060I$ $b = 1.71940 - 0.17017I$	$-1.56601 - 1.58828I$	$-7.89253 + 2.90076I$
$u = 0.639841 + 0.879271I$ $a = -0.543599 + 0.737979I$ $b = -0.075619 + 0.338430I$	$-0.96997 - 4.97477I$	0
$u = 0.639841 - 0.879271I$ $a = -0.543599 - 0.737979I$ $b = -0.075619 - 0.338430I$	$-0.96997 + 4.97477I$	0
$u = 0.716966 + 0.538440I$ $a = -0.779361 + 0.668048I$ $b = 0.292228 + 0.497426I$	$1.60658 - 2.39995I$	$-4.54324 + 1.90730I$
$u = 0.716966 - 0.538440I$ $a = -0.779361 - 0.668048I$ $b = 0.292228 - 0.497426I$	$1.60658 + 2.39995I$	$-4.54324 - 1.90730I$
$u = -0.528629 + 0.969740I$ $a = -0.495625 - 0.870919I$ $b = -0.596905 + 0.163211I$	$-0.23592 + 3.03712I$	0
$u = -0.528629 - 0.969740I$ $a = -0.495625 + 0.870919I$ $b = -0.596905 - 0.163211I$	$-0.23592 - 3.03712I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.014582 + 1.106940I$ $a = 0.698613 + 0.845252I$ $b = 0.83233 - 1.27996I$	$6.97493 - 3.72971I$	0
$u = 0.014582 - 1.106940I$ $a = 0.698613 - 0.845252I$ $b = 0.83233 + 1.27996I$	$6.97493 + 3.72971I$	0
$u = 0.759065 + 0.810624I$ $a = -0.21510 - 2.16462I$ $b = 1.83924 - 1.72824I$	$-7.82704 - 2.79074I$	0
$u = 0.759065 - 0.810624I$ $a = -0.21510 + 2.16462I$ $b = 1.83924 + 1.72824I$	$-7.82704 + 2.79074I$	0
$u = -0.003461 + 1.114350I$ $a = -0.484952 - 0.498420I$ $b = -1.039760 + 0.702363I$	$8.62942 + 1.55231I$	0
$u = -0.003461 - 1.114350I$ $a = -0.484952 + 0.498420I$ $b = -1.039760 - 0.702363I$	$8.62942 - 1.55231I$	0
$u = -0.678647 + 0.889200I$ $a = -0.99601 + 3.18933I$ $b = 2.29317 + 2.94183I$	$-2.88720 + 5.97422I$	0
$u = -0.678647 - 0.889200I$ $a = -0.99601 - 3.18933I$ $b = 2.29317 - 2.94183I$	$-2.88720 - 5.97422I$	0
$u = -0.756171 + 0.426179I$ $a = -0.797372 - 0.584543I$ $b = 0.344833 - 0.560635I$	$1.18722 + 7.92961I$	$-5.68516 - 7.58189I$
$u = -0.756171 - 0.426179I$ $a = -0.797372 + 0.584543I$ $b = 0.344833 + 0.560635I$	$1.18722 - 7.92961I$	$-5.68516 + 7.58189I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.040806 + 1.132090I$ $a = -0.446780 + 0.376335I$ $b = -0.941823 - 0.709155I$	$8.37243 + 4.62112I$	0
$u = -0.040806 - 1.132090I$ $a = -0.446780 - 0.376335I$ $b = -0.941823 + 0.709155I$	$8.37243 - 4.62112I$	0
$u = -0.054219 + 1.140020I$ $a = 0.589590 - 0.733142I$ $b = 0.70115 + 1.27546I$	$6.50055 + 9.90761I$	0
$u = -0.054219 - 1.140020I$ $a = 0.589590 + 0.733142I$ $b = 0.70115 - 1.27546I$	$6.50055 - 9.90761I$	0
$u = 0.735374 + 0.908373I$ $a = -1.93507 - 0.56007I$ $b = -1.05640 - 2.40281I$	$-7.52975 - 2.85954I$	0
$u = 0.735374 - 0.908373I$ $a = -1.93507 + 0.56007I$ $b = -1.05640 + 2.40281I$	$-7.52975 + 2.85954I$	0
$u = 0.707706 + 0.935010I$ $a = 1.03539 + 1.48069I$ $b = -0.48512 + 1.88720I$	$-3.65836 - 6.05326I$	0
$u = 0.707706 - 0.935010I$ $a = 1.03539 - 1.48069I$ $b = -0.48512 - 1.88720I$	$-3.65836 + 6.05326I$	0
$u = -0.632430 + 1.003530I$ $a = -1.272460 - 0.506257I$ $b = -1.24027 + 1.30625I$	$-0.49083 + 3.41773I$	0
$u = -0.632430 - 1.003530I$ $a = -1.272460 + 0.506257I$ $b = -1.24027 - 1.30625I$	$-0.49083 - 3.41773I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.727570 + 0.952707I$ $a = -1.41975 - 2.28891I$ $b = 1.28428 - 2.82954I$	$-6.30922 - 10.55470I$	0
$u = 0.727570 - 0.952707I$ $a = -1.41975 + 2.28891I$ $b = 1.28428 + 2.82954I$	$-6.30922 + 10.55470I$	0
$u = -0.014242 + 0.784224I$ $a = 0.639035 - 0.926041I$ $b = -0.869179 - 0.194601I$	$2.08815 + 1.38840I$	$2.95491 - 3.97928I$
$u = -0.014242 - 0.784224I$ $a = 0.639035 + 0.926041I$ $b = -0.869179 + 0.194601I$	$2.08815 - 1.38840I$	$2.95491 + 3.97928I$
$u = -0.619260 + 1.054980I$ $a = -0.429463 - 0.595270I$ $b = -0.312184 - 0.533722I$	$4.72824 + 2.31494I$	0
$u = -0.619260 - 1.054980I$ $a = -0.429463 + 0.595270I$ $b = -0.312184 + 0.533722I$	$4.72824 - 2.31494I$	0
$u = -0.650542 + 1.042030I$ $a = 1.34113 - 1.51578I$ $b = -0.49049 - 2.32412I$	$4.53764 + 5.08932I$	0
$u = -0.650542 - 1.042030I$ $a = 1.34113 + 1.51578I$ $b = -0.49049 + 2.32412I$	$4.53764 - 5.08932I$	0
$u = 0.655264 + 1.042540I$ $a = -0.467205 + 0.606561I$ $b = -0.260958 + 0.532361I$	$4.45459 - 8.18431I$	0
$u = 0.655264 - 1.042540I$ $a = -0.467205 - 0.606561I$ $b = -0.260958 - 0.532361I$	$4.45459 + 8.18431I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.663246+1.039230I$ $a=-2.27057+1.76444I$ $b=\ \ 0.36310+3.31027I$	$2.67522+10.26500I$	0
$u=-0.663246-1.039230I$ $a=-2.27057-1.76444I$ $b=\ \ 0.36310-3.31027I$	$2.67522-10.26500I$	0
$u=\ \ 0.681711+1.035000I$ $a=-1.189270+0.104639I$ $b=-0.94885-1.58563I$	$-1.62052-9.16663I$	0
$u=\ \ 0.681711-1.035000I$ $a=-1.189270-0.104639I$ $b=-0.94885+1.58563I$	$-1.62052+9.16663I$	0
$u=\ \ 0.677356+1.053730I$ $a=\ \ 1.29035+1.43391I$ $b=-0.40380+2.25686I$	$3.74543-11.38940I$	0
$u=\ \ 0.677356-1.053730I$ $a=\ \ 1.29035-1.43391I$ $b=-0.40380-2.25686I$	$3.74543+11.38940I$	0
$u=\ \ 0.684596+1.057450I$ $a=-2.07654-1.62476I$ $b=\ \ 0.33793-3.06189I$	$1.7152-16.7334I$	0
$u=\ \ 0.684596-1.057450I$ $a=-2.07654+1.62476I$ $b=\ \ 0.33793+3.06189I$	$1.7152+16.7334I$	0
$u=-0.607659+0.388530I$ $a=\ \ 0.330601+0.231355I$ $b=\ \ 0.754959+0.436898I$	$-1.72401+1.26068I$	$-9.61689-3.20971I$
$u=-0.607659-0.388530I$ $a=\ \ 0.330601-0.231355I$ $b=\ \ 0.754959-0.436898I$	$-1.72401-1.26068I$	$-9.61689+3.20971I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.141223 + 0.694571I$ $a = -0.45492 + 1.73909I$ $b = 0.930270 - 0.034337I$	$1.00182 - 2.99656I$	$0.34736 + 1.79586I$
$u = 0.141223 - 0.694571I$ $a = -0.45492 - 1.73909I$ $b = 0.930270 + 0.034337I$	$1.00182 + 2.99656I$	$0.34736 - 1.79586I$
$u = -0.606989 + 0.079902I$ $a = -0.801617 - 0.099145I$ $b = 0.509633 - 0.600376I$	$-3.65273 + 3.42052I$	$-12.40083 - 4.88890I$
$u = -0.606989 - 0.079902I$ $a = -0.801617 + 0.099145I$ $b = 0.509633 + 0.600376I$	$-3.65273 - 3.42052I$	$-12.40083 + 4.88890I$
$u = 0.214408 + 0.135150I$ $a = 0.38448 + 2.43399I$ $b = 0.411442 - 0.639233I$	$-0.32678 + 1.73919I$	$-2.49698 - 4.03216I$
$u = 0.214408 - 0.135150I$ $a = 0.38448 - 2.43399I$ $b = 0.411442 + 0.639233I$	$-0.32678 - 1.73919I$	$-2.49698 + 4.03216I$

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

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1 \\ -u-1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u \\ -u-1 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -u-1 \\ -u-1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u \\ u+1 \end{pmatrix}$$

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

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -8u - 7$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = -0.500000 - 0.866025I$ $b = 0$	$4.05977I$	$-3.00000 - 6.92820I$
$u = -0.500000 - 0.866025I$ $a = -0.500000 + 0.866025I$ $b = 0$	$-4.05977I$	$-3.00000 + 6.92820I$

III. $I_3^u = \langle b,\ a-1,\ u^{15}+3u^{13}+\cdots+2u+1\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2+1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^4+u^2+1 \\ u^6+2u^4+u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^4+u^2+1 \\ u^4 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^9-2u^7-3u^5-2u^3-u \\ -u^9-u^7-u^5+u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^{14}+3u^{12}+6u^{10}+7u^8+6u^6+4u^4+2u^2+1 \\ u^{14}+2u^{12}+3u^{10}+2u^8-u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{10}-8u^8-12u^6-4u^5-8u^4-4u^3-4u^2-4u-10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{15}+6u^{14}+\cdots+2u-1$
c_2, c_5, c_6 c_{11}	$u^{15}+3u^{13}+\cdots+2u+1$
c_3	$u^{15}+3u^{13}+\cdots-4u+1$
c_4, c_8	$(u^3-u^2+1)^5$
c_7, c_9	$(u^3+u^2+2u+1)^5$
c_{10}, c_{12}	$u^{15}-6u^{14}+\cdots+2u+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{10}, c_{12}	$y^{15} + 6y^{14} + \cdots + 18y - 1$
c_2, c_5, c_6 c_{11}	$y^{15} + 6y^{14} + \cdots + 2y - 1$
c_3	$y^{15} + 6y^{14} + \cdots - 14y - 1$
c_4, c_8	$(y^3 - y^2 + 2y - 1)^5$
c_7, c_9	$(y^3 + 3y^2 + 2y - 1)^5$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.633840 + 0.835010I$ $a = 1.00000$ $b = 0$	-1.11345	$-9.01951 + 0.I$
$u = 0.633840 - 0.835010I$ $a = 1.00000$ $b = 0$	-1.11345	$-9.01951 + 0.I$
$u = -0.406029 + 0.986492I$ $a = 1.00000$ $b = 0$	-1.11345	$-9.01951 + 0.I$
$u = -0.406029 - 0.986492I$ $a = 1.00000$ $b = 0$	-1.11345	$-9.01951 + 0.I$
$u = 0.752750 + 0.551515I$ $a = 1.00000$ $b = 0$	$3.02413 + 2.82812I$	$-2.49024 - 2.97945I$
$u = 0.752750 - 0.551515I$ $a = 1.00000$ $b = 0$	$3.02413 - 2.82812I$	$-2.49024 + 2.97945I$
$u = -0.048319 + 1.089120I$ $a = 1.00000$ $b = 0$	$3.02413 + 2.82812I$	$-2.49024 - 2.97945I$
$u = -0.048319 - 1.089120I$ $a = 1.00000$ $b = 0$	$3.02413 - 2.82812I$	$-2.49024 + 2.97945I$
$u = -0.742775 + 0.457992I$ $a = 1.00000$ $b = 0$	$3.02413 + 2.82812I$	$-2.49024 - 2.97945I$
$u = -0.742775 - 0.457992I$ $a = 1.00000$ $b = 0$	$3.02413 - 2.82812I$	$-2.49024 + 2.97945I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.644158 + 1.035000I$ $a = 1.00000$ $b = 0$	$3.02413 - 2.82812I$	$-2.49024 + 2.97945I$
$u = 0.644158 - 1.035000I$ $a = 1.00000$ $b = 0$	$3.02413 + 2.82812I$	$-2.49024 - 2.97945I$
$u = -0.605814 + 1.063630I$ $a = 1.00000$ $b = 0$	$3.02413 - 2.82812I$	$-2.49024 + 2.97945I$
$u = -0.605814 - 1.063630I$ $a = 1.00000$ $b = 0$	$3.02413 + 2.82812I$	$-2.49024 - 2.97945I$
$u = -0.455622$ $a = 1.00000$ $b = 0$	-1.11345	-9.01950

IV. $\boldsymbol{I_4^u = \langle b,\ a-1,\ u^2+u+1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = \quad 1.00000$ $b = \qquad 0$	0	0
$u = -0.500000 - 0.866025I$ $a = \quad 1.00000$ $b = \qquad 0$	0	0

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2-u+1)^2)(u^{15}+6u^{14}+\cdots+2u-1)(u^{76}+35u^{75}+\cdots-12u^2+1)$
c_2	$((u^2+u+1)^2)(u^{15}+3u^{13}+\cdots+2u+1)(u^{76}+3u^{75}+\cdots+2u+1)$
c_3	$((u^2-u+1)^2)(u^{15}+3u^{13}+\cdots-4u+1)(u^{76}-3u^{75}+\cdots-2u+1)$
c_4, c_8	$u^4(u^3-u^2+1)^5(u^{76}+4u^{75}+\cdots+16u+16)$
c_5	$((u^2-u+1)^2)(u^{15}+3u^{13}+\cdots+2u+1)(u^{76}+3u^{75}+\cdots+2u+1)$
c_6	$((u^2-u+1)^2)(u^{15}+3u^{13}+\cdots+2u+1)(u^{76}-3u^{75}+\cdots-4u+1)$
c_7, c_9	$u^4(u^3+u^2+2u+1)^5(u^{76}+20u^{75}+\cdots+1152u+256)$
c_{10}	$((u^2+u+1)^2)(u^{15}-6u^{14}+\cdots+2u+1)(u^{76}-27u^{75}+\cdots+156u^2+1)$
c_{11}	$((u^2+u+1)^2)(u^{15}+3u^{13}+\cdots+2u+1)(u^{76}-3u^{75}+\cdots-4u+1)$
c_{12}	$((u^2-u+1)^2)(u^{15}-6u^{14}+\cdots+2u+1)(u^{76}-27u^{75}+\cdots+156u^2+1)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^2+y+1)^2)(y^{15}+6y^{14}+\cdots+18y-1)(y^{76}+15y^{75}+\cdots-24y+1)$
c_2, c_5	$((y^2+y+1)^2)(y^{15}+6y^{14}+\cdots+2y-1)(y^{76}+35y^{75}+\cdots-12y^2+1)$
c_3	$((y^2+y+1)^2)(y^{15}+6y^{14}+\cdots-14y-1)(y^{76}-5y^{75}+\cdots-96y+1)$
c_4, c_8	$y^4(y^3-y^2+2y-1)^5(y^{76}-20y^{75}+\cdots-1152y+256)$
c_6, c_{11}	$((y^2+y+1)^2)(y^{15}+6y^{14}+\cdots+2y-1)(y^{76}+27y^{75}+\cdots+156y^2+1)$
c_7, c_9	$y^4(y^3+3y^2+2y-1)^5(y^{76}+60y^{75}+\cdots+712704y+65536)$
c_{10}, c_{12}	$((y^2+y+1)^2)(y^{15}+6y^{14}+\cdots+18y-1)$ $\cdot(y^{76}+47y^{75}+\cdots+312y+1)$