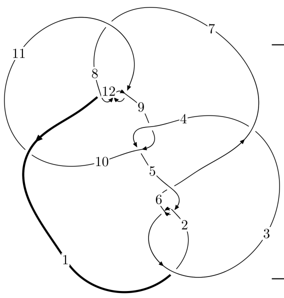
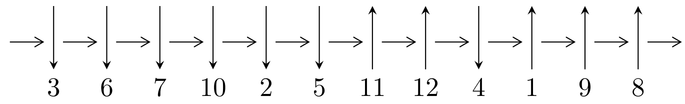
$12a_{0235}$ $(K12a_{0235})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 42u^{95} - 107u^{94} + \cdots + 4b + 15,\ 8u^{95} - 5u^{94} + \cdots + 4a - 3,\ u^{96} - 4u^{95} + \cdots + 2u - 1\rangle$$
$$I_2^u = \langle b - a,\ u^2a + a^2 + au + u^2 + a + u + 1,\ u^3 + u^2 - 1\rangle$$
$$I_3^u = \langle b - 1,\ a - 1,\ u^3 + u^2 - 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 105 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. $I_1^u = \langle 42u^{95}-107u^{94}+\cdots+4b+15,\ 8u^{95}-5u^{94}+\cdots+4a-3,\ u^{96}-4u^{95}+\cdots+2u-1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u^2+1\\-u^4\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-2u^{95}+\frac{5}{4}u^{94}+\cdots+\frac{3}{4}u+\frac{3}{4}\\-10.5000u^{95}+26.7500u^{94}+\cdots+7.75000u-3.75000\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-3.75000u^{95}+14.5000u^{94}+\cdots+7.25000u-4.75000\\-\frac{7}{4}u^{95}+\frac{17}{2}u^{94}+\cdots+\frac{11}{4}u-4\end{pmatrix}$$
$$a_5 = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-u^3\\-u^3+u\end{pmatrix}$$
$$a_8 = \begin{pmatrix}\frac{1}{4}u^{93}-\frac{3}{4}u^{92}+\cdots-\frac{7}{2}u+\frac{3}{4}\\\frac{1}{4}u^{95}-\frac{3}{4}u^{94}+\cdots-\frac{15}{2}u^3+\frac{15}{4}u^2\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-u^8+u^6-u^4+1\\-u^8+2u^6-2u^4+2u^2\end{pmatrix}$$
$$a_9 = \begin{pmatrix}4u^{95}-\frac{57}{4}u^{94}+\cdots-\frac{19}{4}u+\frac{21}{4}\\\frac{1}{2}u^{95}-\frac{19}{4}u^{94}+\cdots-\frac{11}{4}u+\frac{15}{4}\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-\frac{11}{4}u^{95}+\frac{43}{4}u^{94}+\cdots+5u-\frac{11}{4}\\\frac{13}{4}u^{95}-\frac{29}{4}u^{94}+\cdots+\frac{5}{4}u^2-\frac{5}{2}u\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{11}{4}u^{95}+\frac{3}{2}u^{94}+\cdots-\frac{29}{4}u-\frac{13}{2}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{96} + 32u^{95} + \cdots - 6u + 1$
c_2, c_5	$u^{96} + 4u^{95} + \cdots - 2u - 1$
c_3	$u^{96} - 4u^{95} + \cdots + 348300u - 31428$
c_4, c_9	$u^{96} - u^{95} + \cdots + 512u + 512$
c_7	$u^{96} - 4u^{95} + \cdots - 1638u - 193$
c_8, c_{11}, c_{12}	$u^{96} + 4u^{95} + \cdots - 10u - 1$
c_{10}	$u^{96} + 20u^{95} + \cdots - 142864u + 20513$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{96} + 68y^{95} + \cdots + 6y + 1$
c_2, c_5	$y^{96} - 32y^{95} + \cdots + 6y + 1$
c_3	$y^{96} - 16y^{95} + \cdots - 14375034360y + 987719184$
c_4, c_9	$y^{96} - 49y^{95} + \cdots - 5898240y + 262144$
c_7	$y^{96} + 8y^{95} + \cdots - 678546y + 37249$
c_8, c_{11}, c_{12}	$y^{96} + 88y^{95} + \cdots - 50y + 1$
c_{10}	$y^{96} + 36y^{95} + \cdots - 203007043282y + 420783169$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.673892 + 0.747342I$ $a = 0.35572 + 1.82806I$ $b = 1.40911 + 1.47675I$	$-1.96032 - 4.54873I$	0
$u = -0.673892 - 0.747342I$ $a = 0.35572 - 1.82806I$ $b = 1.40911 - 1.47675I$	$-1.96032 + 4.54873I$	0
$u = 0.610514 + 0.800542I$ $a = -1.56996 + 0.96365I$ $b = -1.181540 - 0.299685I$	$-6.80579 + 1.30564I$	0
$u = 0.610514 - 0.800542I$ $a = -1.56996 - 0.96365I$ $b = -1.181540 + 0.299685I$	$-6.80579 - 1.30564I$	0
$u = 0.979747 + 0.046907I$ $a = 0.155311 - 0.922681I$ $b = 0.0381284 + 0.0275714I$	$-1.98868 - 1.54484I$	0
$u = 0.979747 - 0.046907I$ $a = 0.155311 + 0.922681I$ $b = 0.0381284 - 0.0275714I$	$-1.98868 + 1.54484I$	0
$u = -0.709327 + 0.742547I$ $a = -0.28755 - 1.74215I$ $b = -1.25847 - 1.44166I$	$3.38377 - 1.26164I$	0
$u = -0.709327 - 0.742547I$ $a = -0.28755 + 1.74215I$ $b = -1.25847 + 1.44166I$	$3.38377 + 1.26164I$	0
$u = -0.967386 + 0.065292I$ $a = -1.229590 - 0.581737I$ $b = -2.15051 - 0.41869I$	$-4.83200 + 3.64059I$	0
$u = -0.967386 - 0.065292I$ $a = -1.229590 + 0.581737I$ $b = -2.15051 + 0.41869I$	$-4.83200 - 3.64059I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.030310 + 0.051234I$ $a = -0.193028 + 1.096310I$ $b = -0.0651951 + 0.0213549I$	$-7.53067 - 4.37669I$	0
$u = 1.030310 - 0.051234I$ $a = -0.193028 - 1.096310I$ $b = -0.0651951 - 0.0213549I$	$-7.53067 + 4.37669I$	0
$u = 0.733394 + 0.726335I$ $a = -0.95055 + 1.72774I$ $b = -0.647889 + 0.840039I$	$3.78669 - 0.46878I$	0
$u = 0.733394 - 0.726335I$ $a = -0.95055 - 1.72774I$ $b = -0.647889 - 0.840039I$	$3.78669 + 0.46878I$	0
$u = 0.659051 + 0.798621I$ $a = 1.60539 - 1.26651I$ $b = 1.319350 - 0.083707I$	$-0.15569 + 3.01549I$	0
$u = 0.659051 - 0.798621I$ $a = 1.60539 + 1.26651I$ $b = 1.319350 + 0.083707I$	$-0.15569 - 3.01549I$	0
$u = 0.762531 + 0.701280I$ $a = 0.57033 - 1.80163I$ $b = 0.232663 - 1.020810I$	$-0.63753 - 4.16046I$	0
$u = 0.762531 - 0.701280I$ $a = 0.57033 + 1.80163I$ $b = 0.232663 + 1.020810I$	$-0.63753 + 4.16046I$	0
$u = -0.960082$ $a = 1.35659$ $b = 2.25623$	-1.13345	0
$u = 0.707856 + 0.762895I$ $a = 1.32470 - 1.62047I$ $b = 1.068090 - 0.609735I$	$0.77305 + 3.23760I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.707856 - 0.762895I$ $a = 1.32470 + 1.62047I$ $b = 1.068090 + 0.609735I$	$0.77305 - 3.23760I$	0
$u = -0.775850 + 0.699755I$ $a = 0.36075 + 1.44555I$ $b = 1.10144 + 1.11306I$	$2.18338 + 1.93521I$	0
$u = -0.775850 - 0.699755I$ $a = 0.36075 - 1.44555I$ $b = 1.10144 - 1.11306I$	$2.18338 - 1.93521I$	0
$u = 0.665389 + 0.826895I$ $a = -1.81218 + 1.28162I$ $b = -1.59046 + 0.04424I$	$1.13562 + 7.07104I$	0
$u = 0.665389 - 0.826895I$ $a = -1.81218 - 1.28162I$ $b = -1.59046 - 0.04424I$	$1.13562 - 7.07104I$	0
$u = -0.730626 + 0.577652I$ $a = -0.65546 - 1.66699I$ $b = -1.44919 - 1.07027I$	$-3.32770 + 3.63559I$	0
$u = -0.730626 - 0.577652I$ $a = -0.65546 + 1.66699I$ $b = -1.44919 + 1.07027I$	$-3.32770 - 3.63559I$	0
$u = 0.660642 + 0.842059I$ $a = 1.91437 - 1.22201I$ $b = 1.70662 + 0.06127I$	$-4.43080 + 10.74230I$	0
$u = 0.660642 - 0.842059I$ $a = 1.91437 + 1.22201I$ $b = 1.70662 - 0.06127I$	$-4.43080 - 10.74230I$	0
$u = 0.901488 + 0.213540I$ $a = -0.510275 + 0.624002I$ $b = -0.020787 - 0.184467I$	$-4.26322 - 0.28528I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.901488 - 0.213540I$ $a = -0.510275 - 0.624002I$ $b = -0.020787 + 0.184467I$	$-4.26322 + 0.28528I$	0
$u = -1.073080 + 0.099941I$ $a = -0.410079 - 0.769436I$ $b = -1.58578 - 0.51734I$	$-6.36389 + 2.68095I$	0
$u = -1.073080 - 0.099941I$ $a = -0.410079 + 0.769436I$ $b = -1.58578 + 0.51734I$	$-6.36389 - 2.68095I$	0
$u = -1.083550 + 0.131554I$ $a = 0.347074 + 0.994674I$ $b = 1.54158 + 0.66296I$	$-5.41947 + 6.78456I$	0
$u = -1.083550 - 0.131554I$ $a = 0.347074 - 0.994674I$ $b = 1.54158 - 0.66296I$	$-5.41947 - 6.78456I$	0
$u = -0.784865 + 0.781046I$ $a = -0.09778 + 1.55559I$ $b = 0.73470 + 1.51372I$	$1.86446 + 1.37751I$	0
$u = -0.784865 - 0.781046I$ $a = -0.09778 - 1.55559I$ $b = 0.73470 - 1.51372I$	$1.86446 - 1.37751I$	0
$u = -1.105400 + 0.077234I$ $a = 0.162873 + 0.610352I$ $b = 1.42379 + 0.40984I$	$-12.97280 + 0.50568I$	0
$u = -1.105400 - 0.077234I$ $a = 0.162873 - 0.610352I$ $b = 1.42379 - 0.40984I$	$-12.97280 - 0.50568I$	0
$u = 0.988693 + 0.501263I$ $a = 0.452510 + 0.076254I$ $b = -0.413738 + 0.804553I$	$-3.24273 + 0.34411I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.988693 - 0.501263I$ $a = 0.452510 - 0.076254I$ $b = -0.413738 - 0.804553I$	$-3.24273 - 0.34411I$	0
$u = -1.101930 + 0.141181I$ $a = -0.228488 - 1.073210I$ $b = -1.46508 - 0.71255I$	$-11.1619 + 10.3484I$	0
$u = -1.101930 - 0.141181I$ $a = -0.228488 + 1.073210I$ $b = -1.46508 + 0.71255I$	$-11.1619 - 10.3484I$	0
$u = 1.022000 + 0.483742I$ $a = -0.668093 - 0.127010I$ $b = 0.240155 - 0.912102I$	$-9.09474 + 3.58525I$	0
$u = 1.022000 - 0.483742I$ $a = -0.668093 + 0.127010I$ $b = 0.240155 + 0.912102I$	$-9.09474 - 3.58525I$	0
$u = 0.992459 + 0.552581I$ $a = -0.194835 - 0.315236I$ $b = 0.706176 - 0.947524I$	$-3.69107 - 3.59998I$	0
$u = 0.992459 - 0.552581I$ $a = -0.194835 + 0.315236I$ $b = 0.706176 + 0.947524I$	$-3.69107 + 3.59998I$	0
$u = -0.968160 + 0.632527I$ $a = -1.44301 - 1.24978I$ $b = -1.86779 - 0.40200I$	$-4.11887 + 1.23703I$	0
$u = -0.968160 - 0.632527I$ $a = -1.44301 + 1.24978I$ $b = -1.86779 + 0.40200I$	$-4.11887 - 1.23703I$	0
$u = -0.841043 + 0.799563I$ $a = 0.556872 - 1.272450I$ $b = -0.11791 - 1.48091I$	$4.25951 + 3.93964I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.841043 - 0.799563I$ $a = 0.556872 + 1.272450I$ $b = -0.11791 + 1.48091I$	$4.25951 - 3.93964I$	0
$u = -0.944916 + 0.675440I$ $a = 1.34304 + 0.90487I$ $b = 1.63244 + 0.15845I$	$1.65341 + 3.36196I$	0
$u = -0.944916 - 0.675440I$ $a = 1.34304 - 0.90487I$ $b = 1.63244 - 0.15845I$	$1.65341 - 3.36196I$	0
$u = 0.947334 + 0.676570I$ $a = 1.42444 - 0.49363I$ $b = 2.17942 - 0.77675I$	$-1.20862 - 1.14741I$	0
$u = 0.947334 - 0.676570I$ $a = 1.42444 + 0.49363I$ $b = 2.17942 + 0.77675I$	$-1.20862 + 1.14741I$	0
$u = 1.030590 + 0.564562I$ $a = 0.333144 + 0.623335I$ $b = -0.66234 + 1.25095I$	$-9.99197 - 6.19410I$	0
$u = 1.030590 - 0.564562I$ $a = 0.333144 - 0.623335I$ $b = -0.66234 - 1.25095I$	$-9.99197 + 6.19410I$	0
$u = -0.855816 + 0.821883I$ $a = -0.85261 + 1.35962I$ $b = -0.13500 + 1.71492I$	$-0.87177 + 6.94889I$	0
$u = -0.855816 - 0.821883I$ $a = -0.85261 - 1.35962I$ $b = -0.13500 - 1.71492I$	$-0.87177 - 6.94889I$	0
$u = 0.967510 + 0.689054I$ $a = -1.41955 + 0.95893I$ $b = -2.25006 + 1.18191I$	$3.07239 - 4.95468I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.967510 - 0.689054I$ $a = -1.41955 - 0.95893I$ $b = -2.25006 - 1.18191I$	$3.07239 + 4.95468I$	0
$u = -0.914722 + 0.776063I$ $a = -1.207680 + 0.382210I$ $b = -0.933874 + 0.933577I$	$4.03238 + 1.96937I$	0
$u = -0.914722 - 0.776063I$ $a = -1.207680 - 0.382210I$ $b = -0.933874 - 0.933577I$	$4.03238 - 1.96937I$	0
$u = -0.982519 + 0.693996I$ $a = -1.70891 - 0.82601I$ $b = -1.91060 + 0.06642I$	$2.55755 + 6.74718I$	0
$u = -0.982519 - 0.693996I$ $a = -1.70891 + 0.82601I$ $b = -1.91060 - 0.06642I$	$2.55755 - 6.74718I$	0
$u = -0.948900 + 0.743844I$ $a = 1.51810 + 0.20015I$ $b = 1.47656 - 0.53578I$	$1.36634 + 4.37637I$	0
$u = -0.948900 - 0.743844I$ $a = 1.51810 - 0.20015I$ $b = 1.47656 + 0.53578I$	$1.36634 - 4.37637I$	0
$u = 0.361572 + 0.704455I$ $a = -0.843864 + 0.401713I$ $b = 0.071734 - 0.899301I$	$-8.11236 + 1.49674I$	$-7.32882 + 0.I$
$u = 0.361572 - 0.704455I$ $a = -0.843864 - 0.401713I$ $b = 0.071734 + 0.899301I$	$-8.11236 - 1.49674I$	$-7.32882 + 0.I$
$u = 0.987429 + 0.702312I$ $a = 1.34748 - 1.39365I$ $b = 2.26197 - 1.56132I$	$-0.07409 - 8.80368I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.987429 - 0.702312I$ $a = 1.34748 + 1.39365I$ $b = 2.26197 + 1.56132I$	$-0.07409 + 8.80368I$	0
$u = -1.000220 + 0.688530I$ $a = 1.84068 + 0.93653I$ $b = 2.06857 - 0.02614I$	$-2.93811 + 10.02960I$	0
$u = -1.000220 - 0.688530I$ $a = 1.84068 - 0.93653I$ $b = 2.06857 + 0.02614I$	$-2.93811 - 10.02960I$	0
$u = -0.914517 + 0.802398I$ $a = 1.37299 - 0.73011I$ $b = 0.93505 - 1.33698I$	$-1.052600 - 0.890735I$	0
$u = -0.914517 - 0.802398I$ $a = 1.37299 + 0.73011I$ $b = 0.93505 + 1.33698I$	$-1.052600 + 0.890735I$	0
$u = 1.021260 + 0.706015I$ $a = 0.96299 - 1.80167I$ $b = 2.01958 - 1.97104I$	$-1.24695 - 8.68885I$	0
$u = 1.021260 - 0.706015I$ $a = 0.96299 + 1.80167I$ $b = 2.01958 + 1.97104I$	$-1.24695 + 8.68885I$	0
$u = 1.037260 + 0.689346I$ $a = -0.61941 + 1.75820I$ $b = -1.72572 + 2.00532I$	$-8.08056 - 6.91284I$	0
$u = 1.037260 - 0.689346I$ $a = -0.61941 - 1.75820I$ $b = -1.72572 - 2.00532I$	$-8.08056 + 6.91284I$	0
$u = 0.225872 + 0.712033I$ $a = 0.513021 - 0.360124I$ $b = -0.584992 + 0.987864I$	$-6.75618 - 7.81009I$	$-5.15386 + 6.01462I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.225872 - 0.712033I$ $a = 0.513021 + 0.360124I$ $b = -0.584992 - 0.987864I$	$-6.75618 + 7.81009I$	$-5.15386 - 6.01462I$
$u = 1.028450 + 0.718935I$ $a = -0.99531 + 2.02785I$ $b = -2.09188 + 2.15005I$	$0.03178 - 12.86460I$	0
$u = 1.028450 - 0.718935I$ $a = -0.99531 - 2.02785I$ $b = -2.09188 - 2.15005I$	$0.03178 + 12.86460I$	0
$u = 1.036220 + 0.723225I$ $a = 0.93729 - 2.15016I$ $b = 2.07005 - 2.26190I$	$-5.5765 - 16.5912I$	0
$u = 1.036220 - 0.723225I$ $a = 0.93729 + 2.15016I$ $b = 2.07005 + 2.26190I$	$-5.5765 + 16.5912I$	0
$u = 0.229697 + 0.666464I$ $a = -0.546602 + 0.470321I$ $b = 0.553918 - 0.824154I$	$-1.13431 - 4.43613I$	$-0.95866 + 6.40467I$
$u = 0.229697 - 0.666464I$ $a = -0.546602 - 0.470321I$ $b = 0.553918 + 0.824154I$	$-1.13431 + 4.43613I$	$-0.95866 - 6.40467I$
$u = 0.315520 + 0.614484I$ $a = 0.723984 - 0.544838I$ $b = -0.295922 + 0.657422I$	$-1.97243 - 0.73691I$	$-3.75682 + 0.03141I$
$u = 0.315520 - 0.614484I$ $a = 0.723984 + 0.544838I$ $b = -0.295922 - 0.657422I$	$-1.97243 + 0.73691I$	$-3.75682 - 0.03141I$
$u = 0.670863$ $a = 0.469393$ $b = -0.0917950$	-0.909292	-11.8320

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.061427 + 0.478934I$ $a = 0.485445 - 1.043810I$ $b = -0.783729 + 0.192259I$	$-1.78729 - 2.06625I$	$-0.29523 + 4.09574I$
$u = 0.061427 - 0.478934I$ $a = 0.485445 + 1.043810I$ $b = -0.783729 - 0.192259I$	$-1.78729 + 2.06625I$	$-0.29523 - 4.09574I$
$u = -0.331467 + 0.296157I$ $a = -0.06815 - 2.09602I$ $b = -0.861174 - 0.827960I$	$-3.49051 + 3.35120I$	$-0.14805 - 4.26611I$
$u = -0.331467 - 0.296157I$ $a = -0.06815 + 2.09602I$ $b = -0.861174 + 0.827960I$	$-3.49051 - 3.35120I$	$-0.14805 + 4.26611I$
$u = -0.111425 + 0.299353I$ $a = -0.50854 + 1.82130I$ $b = 0.676320 + 0.324196I$	$1.245250 + 0.530627I$	$6.10933 - 1.75100I$
$u = -0.111425 - 0.299353I$ $a = -0.50854 - 1.82130I$ $b = 0.676320 - 0.324196I$	$1.245250 - 0.530627I$	$6.10933 + 1.75100I$

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

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} a \\ a \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^2a + au \\ au \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u \\ u \end{pmatrix}$$

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

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

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

$$a_9 = \begin{pmatrix} a \\ a \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.877439 + 0.744862I$ $a = 0.162359 + 0.986732I$ $b = 0.162359 + 0.986732I$	$5.65624I$	$-2.97732 - 5.45590I$
$u = -0.877439 + 0.744862I$ $a = -0.500000 - 0.424452I$ $b = -0.500000 - 0.424452I$	$4.13758 + 2.82812I$	$1.30443 - 3.86214I$
$u = -0.877439 - 0.744862I$ $a = 0.162359 - 0.986732I$ $b = 0.162359 - 0.986732I$	$-5.65624I$	$-2.97732 + 5.45590I$
$u = -0.877439 - 0.744862I$ $a = -0.500000 + 0.424452I$ $b = -0.500000 + 0.424452I$	$4.13758 - 2.82812I$	$1.30443 + 3.86214I$
$u = 0.754878$ $a = -1.16236 + 0.98673I$ $b = -1.16236 + 0.98673I$	$-4.13758 - 2.82812I$	$-7.82711 - 0.80415I$
$u = 0.754878$ $a = -1.16236 - 0.98673I$ $b = -1.16236 - 0.98673I$	$-4.13758 + 2.82812I$	$-7.82711 + 0.80415I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= u^2+u-1$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.877439 + 0.744862I$ $a = \quad 1.00000$ $b = \quad 1.00000$	0	$-1.66236 - 0.56228I$
$u = -0.877439 - 0.744862I$ $a = \quad 1.00000$ $b = \quad 1.00000$	0	$-1.66236 + 0.56228I$
$u = \quad 0.754878$ $a = \quad 1.00000$ $b = \quad 1.00000$	0	0.324720

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^3 - u^2 + 2u - 1)^3)(u^{96} + 32u^{95} + \cdots - 6u + 1)$
c_2	$((u^3 + u^2 - 1)^3)(u^{96} + 4u^{95} + \cdots - 2u - 1)$
c_3	$((u^3 - u^2 + 2u - 1)^3)(u^{96} - 4u^{95} + \cdots + 348300u - 31428)$
c_4, c_9	$u^9(u^{96} - u^{95} + \cdots + 512u + 512)$
c_5	$((u^3 - u^2 + 1)^3)(u^{96} + 4u^{95} + \cdots - 2u - 1)$
c_6	$((u^3 + u^2 + 2u + 1)^3)(u^{96} + 32u^{95} + \cdots - 6u + 1)$
c_7	$((u^3 - u^2 + 1)^3)(u^{96} - 4u^{95} + \cdots - 1638u - 193)$
c_8	$((u^3 + u^2 + 2u + 1)^3)(u^{96} + 4u^{95} + \cdots - 10u - 1)$
c_{10}	$((u^3 - u^2 + 1)^3)(u^{96} + 20u^{95} + \cdots - 142864u + 20513)$
c_{11}, c_{12}	$((u^3 - u^2 + 2u - 1)^3)(u^{96} + 4u^{95} + \cdots - 10u - 1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_6	$((y^3+3y^2+2y-1)^3)(y^{96}+68y^{95}+\cdots+6y+1)$
c_2, c_5	$((y^3-y^2+2y-1)^3)(y^{96}-32y^{95}+\cdots+6y+1)$
c_3	$(y^3+3y^2+2y-1)^3$ $\cdot\,(y^{96}-16y^{95}+\cdots-14375034360y+987719184)$
c_4, c_9	$y^9(y^{96}-49y^{95}+\cdots-5898240y+262144)$
c_7	$((y^3-y^2+2y-1)^3)(y^{96}+8y^{95}+\cdots-678546y+37249)$
c_8, c_{11}, c_{12}	$((y^3+3y^2+2y-1)^3)(y^{96}+88y^{95}+\cdots-50y+1)$
c_{10}	$(y^3-y^2+2y-1)^3$ $\cdot\,(y^{96}+36y^{95}+\cdots-203007043282y+420783169)$