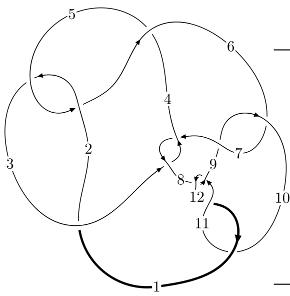
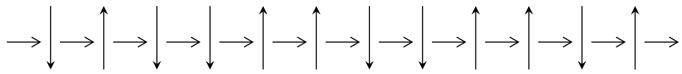
$12a_{0125}$ ($K12a_{0125}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -1.45958\times 10^{63}u^{105} + 1.24016\times 10^{64}u^{104} + \cdots + 1.23680\times 10^{62}b + 3.05806\times 10^{63},$$
$$1.13273\times 10^{63}u^{105} - 4.16667\times 10^{63}u^{104} + \cdots + 1.23680\times 10^{62}a + 4.77555\times 10^{62},\ u^{106} - 7u^{105} + \cdots + 11u$$
$$I_2^u = \langle b - a,\ -u^3a + u^2a + 2u^3 + a^2 - 2u^2 - a + u + 2,\ u^4 - u^3 + u^2 + 1\rangle$$
$$I_3^u = \langle -a^2 - 2au + b - a + u + 1,\ a^4 + 3a^3u - 4a^2u - 4a^2 + 3a + 2u,\ u^2 + u + 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 122 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. $\boldsymbol{I_1^u = \langle -1.46 \times 10^{63} u^{105} + 1.24 \times 10^{64} u^{104} + \cdots + 1.24 \times 10^{62} b + 3.06 \times 10^{63},\ 1.13 \times 10^{63} u^{105} - 4.17 \times 10^{63} u^{104} + \cdots + 1.24 \times 10^{62} a + 4.78 \times 10^{62},\ u^{106} - 7u^{105} + \cdots + 11u + 1 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -9.15857u^{105} + 33.6892u^{104} + \cdots - 78.0000u - 3.86123 \\ 11.8013u^{105} - 100.272u^{104} + \cdots - 296.223u - 24.7257 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 16.6772u^{105} - 80.6901u^{104} + \cdots + 74.7375u + 5.64569 \\ -11.0849u^{105} + 100.425u^{104} + \cdots + 353.574u + 29.7886 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -12.1515u^{105} + 46.3650u^{104} + \cdots - 82.9557u - 3.61751 \\ 15.2241u^{105} - 129.122u^{104} + \cdots - 378.079u - 31.6912 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^3 \\ u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 16.8295u^{105} - 91.5401u^{104} + \cdots + 41.0065u + 2.64419 \\ -10.2180u^{105} + 87.5744u^{104} + \cdots + 321.926u + 27.0475 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -15.3972u^{105} + 68.9700u^{104} + \cdots - 43.5872u - 1.83722 \\ 13.1838u^{105} - 116.844u^{104} + \cdots - 377.008u - 31.4529 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 3.05675u^{105} - 23.6825u^{104} + \cdots + 23.3656u - 0.183695 \\ -0.478044u^{105} + 1.52825u^{104} + \cdots + 34.1625u + 2.46930 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -23.7616u^{105} + 179.119u^{104} + \cdots + 290.283u + 26.9682$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{106} + 35u^{105} + \cdots + 9u + 1$
c_2, c_5	$u^{106} + 7u^{105} + \cdots - 11u + 1$
c_3, c_7	$u^{106} - 3u^{105} + \cdots - 1152u + 256$
c_6, c_9	$u^{106} + 3u^{105} + \cdots + 1152u + 256$
c_8, c_{11}	$u^{106} - 7u^{105} + \cdots + 11u + 1$
c_{10}, c_{12}	$u^{106} - 35u^{105} + \cdots - 9u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_{10} c_{12}	$y^{106} + 79y^{105} + \cdots + 1045y + 1$
c_2, c_5, c_8 c_{11}	$y^{106} + 35y^{105} + \cdots + 9y + 1$
c_3, c_6, c_7 c_9	$y^{106} + 55y^{105} + \cdots + 1654784y + 65536$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.183013 + 0.981284I$ $a = -0.250624 + 1.170010I$ $b = 1.19910 + 1.07703I$	$-8.23499 + 5.48524I$	0
$u = 0.183013 - 0.981284I$ $a = -0.250624 - 1.170010I$ $b = 1.19910 - 1.07703I$	$-8.23499 - 5.48524I$	0
$u = -0.608368 + 0.790031I$ $a = -1.71520 + 2.08278I$ $b = -2.34512 + 1.92007I$	$0.476825 + 0.520416I$	0
$u = -0.608368 - 0.790031I$ $a = -1.71520 - 2.08278I$ $b = -2.34512 - 1.92007I$	$0.476825 - 0.520416I$	0
$u = -0.070703 + 0.979774I$ $a = 0.473670 + 1.255400I$ $b = 0.490461 + 0.187755I$	$-3.20551 + 0.41176I$	0
$u = -0.070703 - 0.979774I$ $a = 0.473670 - 1.255400I$ $b = 0.490461 - 0.187755I$	$-3.20551 - 0.41176I$	0
$u = -0.082433 + 1.016070I$ $a = -0.536516 - 0.233091I$ $b = -1.61438 - 0.31423I$	$-3.79720 - 2.42088I$	0
$u = -0.082433 - 1.016070I$ $a = -0.536516 + 0.233091I$ $b = -1.61438 + 0.31423I$	$-3.79720 + 2.42088I$	0
$u = 0.139173 + 1.012920I$ $a = 0.233853 - 0.977567I$ $b = -1.15979 - 0.93662I$	$-8.71380 - 0.62719I$	0
$u = 0.139173 - 1.012920I$ $a = 0.233853 + 0.977567I$ $b = -1.15979 + 0.93662I$	$-8.71380 + 0.62719I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.121668 + 1.027370I$ $a = -0.262202 - 1.241630I$ $b = -0.392812 - 0.212170I$	$-2.89214 - 5.06693I$	0
$u = -0.121668 - 1.027370I$ $a = -0.262202 + 1.241630I$ $b = -0.392812 + 0.212170I$	$-2.89214 + 5.06693I$	0
$u = 0.767026 + 0.703266I$ $a = 1.02342 + 1.09468I$ $b = 0.650088 - 0.104330I$	$1.97848 - 2.25070I$	0
$u = 0.767026 - 0.703266I$ $a = 1.02342 - 1.09468I$ $b = 0.650088 + 0.104330I$	$1.97848 + 2.25070I$	0
$u = -0.491542 + 0.815968I$ $a = 2.89723 - 2.04811I$ $b = 3.28360 - 1.89164I$	$- 3.72687I$	0
$u = -0.491542 - 0.815968I$ $a = 2.89723 + 2.04811I$ $b = 3.28360 + 1.89164I$	$3.72687I$	0
$u = 0.757210 + 0.725465I$ $a = 0.44531 + 1.47879I$ $b = 1.59591 + 1.06021I$	$2.34132 + 0.87923I$	0
$u = 0.757210 - 0.725465I$ $a = 0.44531 - 1.47879I$ $b = 1.59591 - 1.06021I$	$2.34132 - 0.87923I$	0
$u = 0.606407 + 0.862300I$ $a = 0.849818 - 0.206074I$ $b = -0.382310 - 1.247890I$	$-6.30345 - 0.88841I$	0
$u = 0.606407 - 0.862300I$ $a = 0.849818 + 0.206074I$ $b = -0.382310 + 1.247890I$	$-6.30345 + 0.88841I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.797191 + 0.698686I$ $a = -0.39788 - 1.50231I$ $b = -1.58826 - 1.20743I$	$3.31076 - 4.88109I$	0
$u = 0.797191 - 0.698686I$ $a = -0.39788 + 1.50231I$ $b = -1.58826 + 1.20743I$	$3.31076 + 4.88109I$	0
$u = -0.814211 + 0.692591I$ $a = 1.75987 - 0.39778I$ $b = 1.38167 + 0.58692I$	$-2.34132 - 0.87923I$	0
$u = -0.814211 - 0.692591I$ $a = 1.75987 + 0.39778I$ $b = 1.38167 - 0.58692I$	$-2.34132 + 0.87923I$	0
$u = 0.866786 + 0.634717I$ $a = 1.46524 + 1.07764I$ $b = 1.341270 - 0.241167I$	$-5.87854I$	0
$u = 0.866786 - 0.634717I$ $a = 1.46524 - 1.07764I$ $b = 1.341270 + 0.241167I$	$5.87854I$	0
$u = -0.200048 + 1.057240I$ $a = 0.893176 - 0.486577I$ $b = 1.83864 - 0.23783I$	$-5.27517I$	0
$u = -0.200048 - 1.057240I$ $a = 0.893176 + 0.486577I$ $b = 1.83864 + 0.23783I$	$5.27517I$	0
$u = -0.361209 + 1.017340I$ $a = -0.059410 - 0.516497I$ $b = -0.439695 + 0.151597I$	$0.93508 - 1.21751I$	0
$u = -0.361209 - 1.017340I$ $a = -0.059410 + 0.516497I$ $b = -0.439695 - 0.151597I$	$0.93508 + 1.21751I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.609367 + 0.892037I$ $a = -0.672343 + 0.456946I$ $b = 0.63191 + 1.33120I$	$-6.40447 + 5.65814I$	0
$u = 0.609367 - 0.892037I$ $a = -0.672343 - 0.456946I$ $b = 0.63191 - 1.33120I$	$-6.40447 - 5.65814I$	0
$u = 0.770716 + 0.767655I$ $a = -0.70064 - 1.22855I$ $b = -0.280019 - 0.215340I$	$4.52079 + 2.63581I$	0
$u = 0.770716 - 0.767655I$ $a = -0.70064 + 1.22855I$ $b = -0.280019 + 0.215340I$	$4.52079 - 2.63581I$	0
$u = -0.566270 + 0.934854I$ $a = 1.87881 - 1.90621I$ $b = 2.08787 - 1.30438I$	$-0.476825 - 0.520416I$	0
$u = -0.566270 - 0.934854I$ $a = 1.87881 + 1.90621I$ $b = 2.08787 + 1.30438I$	$-0.476825 + 0.520416I$	0
$u = -0.726604 + 0.816538I$ $a = -1.86538 + 1.02911I$ $b = -1.72394 + 0.15846I$	$3.20551 - 0.41176I$	0
$u = -0.726604 - 0.816538I$ $a = -1.86538 - 1.02911I$ $b = -1.72394 - 0.15846I$	$3.20551 + 0.41176I$	0
$u = 0.842877 + 0.705822I$ $a = -1.26558 - 1.34601I$ $b = -1.085060 - 0.187678I$	$6.94581 - 5.02785I$	0
$u = 0.842877 - 0.705822I$ $a = -1.26558 + 1.34601I$ $b = -1.085060 + 0.187678I$	$6.94581 + 5.02785I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.892716 + 0.645846I$ $a = -1.56857 - 1.13159I$ $b = -1.49793 + 0.16723I$	$1.28626 - 11.79330I$	0
$u = 0.892716 - 0.645846I$ $a = -1.56857 + 1.13159I$ $b = -1.49793 - 0.16723I$	$1.28626 + 11.79330I$	0
$u = -0.831655 + 0.735688I$ $a = -1.94362 + 0.45302I$ $b = -1.62921 - 0.57066I$	$-1.56866 + 4.68963I$	0
$u = -0.831655 - 0.735688I$ $a = -1.94362 - 0.45302I$ $b = -1.62921 + 0.57066I$	$-1.56866 - 4.68963I$	0
$u = -0.846903 + 0.235789I$ $a = -0.406411 + 0.154856I$ $b = 0.522749 - 0.873838I$	$-1.10077 - 7.84499I$	0
$u = -0.846903 - 0.235789I$ $a = -0.406411 - 0.154856I$ $b = 0.522749 + 0.873838I$	$-1.10077 + 7.84499I$	0
$u = -0.499442 + 0.720382I$ $a = 0.695312 - 0.877601I$ $b = 0.396527 - 0.460682I$	$0.00288 - 1.41429I$	0
$u = -0.499442 - 0.720382I$ $a = 0.695312 + 0.877601I$ $b = 0.396527 + 0.460682I$	$0.00288 + 1.41429I$	0
$u = -0.599521 + 0.957553I$ $a = 0.771353 - 1.121240I$ $b = 1.47129 - 1.34418I$	$-0.82280 - 3.12789I$	0
$u = -0.599521 - 0.957553I$ $a = 0.771353 + 1.121240I$ $b = 1.47129 + 1.34418I$	$-0.82280 + 3.12789I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.637724+0.932906I$ $a=-1.94663+1.67788I$ $b=-2.08360+0.92011I$	$-5.43693I$	0
$u=-0.637724-0.932906I$ $a=-1.94663-1.67788I$ $b=-2.08360-0.92011I$	$5.43693I$	0
$u=-0.066695+0.862588I$ $a=\ \ 0.915878+1.066430I$ $b=\ \ 1.90466+0.87933I$	$-0.93508+1.21751I$	0
$u=-0.066695-0.862588I$ $a=\ \ 0.915878-1.066430I$ $b=\ \ 1.90466-0.87933I$	$-0.93508-1.21751I$	0
$u=-0.814464+0.288678I$ $a=\ \ 0.605911-0.175846I$ $b=-0.286730+0.819490I$	$-1.97848-2.25070I$	0
$u=-0.814464-0.288678I$ $a=\ \ 0.605911+0.175846I$ $b=-0.286730-0.819490I$	$-1.97848+2.25070I$	0
$u=-0.706931+0.917155I$ $a=-0.82138+1.95452I$ $b=-1.70509+2.01187I$	$2.89214-5.06693I$	0
$u=-0.706931-0.917155I$ $a=-0.82138-1.95452I$ $b=-1.70509-2.01187I$	$2.89214+5.06693I$	0
$u=-0.135106+1.157920I$ $a=-0.126241+0.601309I$ $b=-1.255940+0.283686I$	$-6.94581-5.02785I$	0
$u=-0.135106-1.157920I$ $a=-0.126241-0.601309I$ $b=-1.255940-0.283686I$	$-6.94581+5.02785I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.846366 + 0.807209I$ $a = -0.210464 - 1.265260I$ $b = -1.04605 - 1.10106I$	$8.71380 + 0.62719I$	0
$u = 0.846366 - 0.807209I$ $a = -0.210464 + 1.265260I$ $b = -1.04605 + 1.10106I$	$8.71380 - 0.62719I$	0
$u = 0.774318 + 0.876579I$ $a = 0.680033 + 1.008620I$ $b = 1.253860 + 0.454713I$	$5.27854 + 2.91371I$	0
$u = 0.774318 - 0.876579I$ $a = 0.680033 - 1.008620I$ $b = 1.253860 - 0.454713I$	$5.27854 - 2.91371I$	0
$u = -0.162545 + 1.173480I$ $a = 0.162036 - 0.799571I$ $b = 1.273330 - 0.436696I$	$-5.99254 - 10.94690I$	0
$u = -0.162545 - 1.173480I$ $a = 0.162036 + 0.799571I$ $b = 1.273330 + 0.436696I$	$-5.99254 + 10.94690I$	0
$u = 0.724326 + 0.957520I$ $a = -0.808980 - 0.583019I$ $b = -1.76285 - 0.94912I$	$3.93836 + 3.02552I$	0
$u = 0.724326 - 0.957520I$ $a = -0.808980 + 0.583019I$ $b = -1.76285 + 0.94912I$	$3.93836 - 3.02552I$	0
$u = 0.706595 + 0.979712I$ $a = 1.44150 + 1.08675I$ $b = 1.77226 + 0.02524I$	$1.56866 + 4.68963I$	0
$u = 0.706595 - 0.979712I$ $a = 1.44150 - 1.08675I$ $b = 1.77226 - 0.02524I$	$1.56866 - 4.68963I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.706082 + 0.993444I$ $a = 0.639854 + 1.066610I$ $b = 1.73031 + 1.35560I$	$1.10077 + 7.84499I$	0
$u = 0.706082 - 0.993444I$ $a = 0.639854 - 1.066610I$ $b = 1.73031 - 1.35560I$	$1.10077 - 7.84499I$	0
$u = -0.522661 + 1.114150I$ $a = -0.434161 - 0.452234I$ $b = 0.309499 - 1.044400I$	$-4.52079 - 2.63581I$	0
$u = -0.522661 - 1.114150I$ $a = -0.434161 + 0.452234I$ $b = 0.309499 + 1.044400I$	$-4.52079 + 2.63581I$	0
$u = -0.489939 + 1.132640I$ $a = 0.549700 + 0.221371I$ $b = -0.166076 + 0.880128I$	$-3.93836 + 3.02552I$	0
$u = -0.489939 - 1.132640I$ $a = 0.549700 - 0.221371I$ $b = -0.166076 - 0.880128I$	$-3.93836 - 3.02552I$	0
$u = 0.718362 + 1.003840I$ $a = -1.57081 - 0.99200I$ $b = -1.80456 + 0.08368I$	$2.38453 + 10.59630I$	0
$u = 0.718362 - 1.003840I$ $a = -1.57081 + 0.99200I$ $b = -1.80456 - 0.08368I$	$2.38453 - 10.59630I$	0
$u = -0.719884 + 1.009600I$ $a = 0.23810 - 1.93491I$ $b = 1.21212 - 2.15144I$	$-3.31076 - 4.88109I$	0
$u = -0.719884 - 1.009600I$ $a = 0.23810 + 1.93491I$ $b = 1.21212 + 2.15144I$	$-3.31076 + 4.88109I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.745910 + 0.999607I$ $a = -0.29151 + 2.10838I$ $b = -1.30317 + 2.28754I$	$-2.38453 - 10.59630I$	0
$u = -0.745910 - 0.999607I$ $a = -0.29151 - 2.10838I$ $b = -1.30317 - 2.28754I$	$-2.38453 + 10.59630I$	0
$u = 0.795949 + 0.963492I$ $a = -1.170740 - 0.503153I$ $b = -1.303770 + 0.227267I$	$8.23499 + 5.48524I$	0
$u = 0.795949 - 0.963492I$ $a = -1.170740 + 0.503153I$ $b = -1.303770 - 0.227267I$	$8.23499 - 5.48524I$	0
$u = 0.741766 + 1.016420I$ $a = -1.04728 - 1.36665I$ $b = -2.08849 - 1.51459I$	$5.99254 + 10.94690I$	0
$u = 0.741766 - 1.016420I$ $a = -1.04728 + 1.36665I$ $b = -2.08849 + 1.51459I$	$5.99254 - 10.94690I$	0
$u = 0.895602 + 0.902122I$ $a = 0.499281 - 0.827980I$ $b = 0.009136 - 1.083200I$	$6.40447 + 5.65814I$	0
$u = 0.895602 - 0.902122I$ $a = 0.499281 + 0.827980I$ $b = 0.009136 + 1.083200I$	$6.40447 - 5.65814I$	0
$u = 0.724032 + 1.055990I$ $a = 0.75868 + 1.74992I$ $b = 1.92533 + 1.84464I$	$-1.28626 + 11.79330I$	0
$u = 0.724032 - 1.055990I$ $a = 0.75868 - 1.74992I$ $b = 1.92533 - 1.84464I$	$-1.28626 - 11.79330I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.882666 + 0.934937I$ $a = -0.782200 + 0.495054I$ $b = -0.461431 + 0.900066I$	$6.30345 + 0.88841I$	0
$u = 0.882666 - 0.934937I$ $a = -0.782200 - 0.495054I$ $b = -0.461431 - 0.900066I$	$6.30345 - 0.88841I$	0
$u = -0.700805 + 0.103106I$ $a = -0.347599 + 0.803226I$ $b = 0.685519 - 0.192768I$	$3.79720 - 2.42088I$	$8.03384 + 3.86046I$
$u = -0.700805 - 0.103106I$ $a = -0.347599 - 0.803226I$ $b = 0.685519 + 0.192768I$	$3.79720 + 2.42088I$	$8.03384 - 3.86046I$
$u = 0.737717 + 1.063090I$ $a = -0.86972 - 1.85842I$ $b = -2.02279 - 1.91157I$	$17.8296I$	0
$u = 0.737717 - 1.063090I$ $a = -0.86972 + 1.85842I$ $b = -2.02279 + 1.91157I$	$-17.8296I$	0
$u = 0.591011 + 0.052091I$ $a = 0.165247 + 0.998865I$ $b = 0.092280 - 1.103860I$	$-5.27854 - 2.91371I$	$-3.69090 + 3.04834I$
$u = 0.591011 - 0.052091I$ $a = 0.165247 - 0.998865I$ $b = 0.092280 + 1.103860I$	$-5.27854 + 2.91371I$	$-3.69090 - 3.04834I$
$u = -0.250141 + 0.475165I$ $a = 1.300680 + 0.007167I$ $b = 0.226506 - 0.170022I$	$0.004559 - 1.231310I$	$0.29315 + 4.68261I$
$u = -0.250141 - 0.475165I$ $a = 1.300680 - 0.007167I$ $b = 0.226506 + 0.170022I$	$0.004559 + 1.231310I$	$0.29315 - 4.68261I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.510636 + 0.163559I$ $a = -0.20894 - 2.01670I$ $b = 0.693169 - 0.805948I$	$0.82280 - 3.12789I$	$4.96221 + 2.35512I$
$u = -0.510636 - 0.163559I$ $a = -0.20894 + 2.01670I$ $b = 0.693169 + 0.805948I$	$0.82280 + 3.12789I$	$4.96221 - 2.35512I$
$u = -0.133565 + 0.357143I$ $a = 1.88642 + 0.19782I$ $b = 0.212749 - 0.289221I$	$-0.004559 - 1.231310I$	$-0.29315 + 4.68261I$
$u = -0.133565 - 0.357143I$ $a = 1.88642 - 0.19782I$ $b = 0.212749 + 0.289221I$	$-0.004559 + 1.231310I$	$-0.29315 - 4.68261I$
$u = -0.159696 + 0.120542I$ $a = 1.05065 + 3.71317I$ $b = 0.237220 + 0.726682I$	$-0.00288 + 1.41429I$	$2.00405 - 4.68227I$
$u = -0.159696 - 0.120542I$ $a = 1.05065 - 3.71317I$ $b = 0.237220 - 0.726682I$	$-0.00288 - 1.41429I$	$2.00405 + 4.68227I$

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

(i) Arc colorings

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

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

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

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

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

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

$$a_1 = \begin{pmatrix} u^2 + 1 \\ -u^3 + u^2 + 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^3a - u^2a - au \\ 2u^3a \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^3 \\ u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^2 - 1 \\ u^3 - u^2 - 1 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} u^3a - u^2a - u^3 - au + u^2 - 1 \\ 2u^3a - u^3 + u^2 - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_4	$(u^4 - u^3 + 3u^2 - 2u + 1)^2$
c_2	$(u^4 - u^3 + u^2 + 1)^2$
c_5	$(u^4 + u^3 + u^2 + 1)^2$
c_6, c_9	u^8
c_7	$(u^4 + u^3 + 3u^2 + 2u + 1)^2$
c_8, c_{12}	$(u^2 - u + 1)^4$
c_{10}, c_{11}	$(u^2 + u + 1)^4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_7	$(y^4 + 5y^3 + 7y^2 + 2y + 1)^2$
c_2, c_5	$(y^4 + y^3 + 3y^2 + 2y + 1)^2$
c_6, c_9	y^8
c_8, c_{10}, c_{11} c_{12}	$(y^2 + y + 1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.351808 + 0.720342I$ $a = 0.60275 + 1.84505I$ $b = 0.60275 + 1.84505I$	$-0.21101 - 3.44499I$	$-4.95650 + 5.37720I$
$u = -0.351808 + 0.720342I$ $a = 1.29649 - 1.44452I$ $b = 1.29649 - 1.44452I$	$-0.211005 + 0.614778I$	$-0.01166 + 7.13374I$
$u = -0.351808 - 0.720342I$ $a = 0.60275 - 1.84505I$ $b = 0.60275 - 1.84505I$	$-0.21101 + 3.44499I$	$-4.95650 - 5.37720I$
$u = -0.351808 - 0.720342I$ $a = 1.29649 + 1.44452I$ $b = 1.29649 + 1.44452I$	$-0.211005 - 0.614778I$	$-0.01166 - 7.13374I$
$u = 0.851808 + 0.911292I$ $a = 0.082397 - 0.508565I$ $b = 0.082397 - 0.508565I$	$6.79074 + 5.19385I$	$5.34148 - 0.51945I$
$u = 0.851808 + 0.911292I$ $a = -0.481629 + 0.182925I$ $b = -0.481629 + 0.182925I$	$6.79074 + 1.13408I$	$8.12668 - 3.09304I$
$u = 0.851808 - 0.911292I$ $a = 0.082397 + 0.508565I$ $b = 0.082397 + 0.508565I$	$6.79074 - 5.19385I$	$5.34148 + 0.51945I$
$u = 0.851808 - 0.911292I$ $a = -0.481629 - 0.182925I$ $b = -0.481629 - 0.182925I$	$6.79074 - 1.13408I$	$8.12668 + 3.09304I$

III.

$$\boldsymbol{I_3^u = \langle -a^2 - 2au + b - a + u + 1,\ a^4 + 3a^3u - 4a^2u - 4a^2 + 3a + 2u,\ u^2 + u + 1\rangle}$$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= a^3u + 2a^3 + 8a^2u - 5au - 6a - 2u - 1$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5	$(u^2 - u + 1)^4$
c_2	$(u^2 + u + 1)^4$
c_3, c_7	u^8
c_6, c_{10}	$(u^4 + u^3 + 3u^2 + 2u + 1)^2$
c_8	$(u^4 + u^3 + u^2 + 1)^2$
c_9, c_{12}	$(u^4 - u^3 + 3u^2 - 2u + 1)^2$
c_{11}	$(u^4 - u^3 + u^2 + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5	$(y^2 + y + 1)^4$
c_3, c_7	y^8
c_6, c_9, c_{10} c_{12}	$(y^4 + 5y^3 + 7y^2 + 2y + 1)^2$
c_8, c_{11}	$(y^4 + y^3 + 3y^2 + 2y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = -0.715106 - 0.583984I$ $b = 0.68183 - 1.26940I$	$-6.79074 - 5.19385I$	$-5.34148 + 0.51945I$
$u = -0.500000 + 0.866025I$ $a = 0.863298 + 0.327308I$ $b = -0.428761 + 1.194380I$	$-6.79074 + 1.13408I$	$-8.12668 - 3.09304I$
$u = -0.500000 + 0.866025I$ $a = 0.05207 - 1.53087I$ $b = -0.189308 - 0.935262I$	$0.211005 - 0.614778I$	$0.01166 - 7.13374I$
$u = -0.500000 + 0.866025I$ $a = 1.29974 - 0.81053I$ $b = 1.93624 - 0.72176I$	$0.21101 - 3.44499I$	$4.95650 + 5.37720I$
$u = -0.500000 - 0.866025I$ $a = -0.715106 + 0.583984I$ $b = 0.68183 + 1.26940I$	$-6.79074 + 5.19385I$	$-5.34148 - 0.51945I$
$u = -0.500000 - 0.866025I$ $a = 0.863298 - 0.327308I$ $b = -0.428761 - 1.194380I$	$-6.79074 - 1.13408I$	$-8.12668 + 3.09304I$
$u = -0.500000 - 0.866025I$ $a = 0.05207 + 1.53087I$ $b = -0.189308 + 0.935262I$	$0.211005 + 0.614778I$	$0.01166 + 7.13374I$
$u = -0.500000 - 0.866025I$ $a = 1.29974 + 0.81053I$ $b = 1.93624 + 0.72176I$	$0.21101 + 3.44499I$	$4.95650 - 5.37720I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_4	$((u^2-u+1)^4)(u^4-u^3+3u^2-2u+1)^2(u^{106}+35u^{105}+\cdots+9u+1)$
c_2	$((u^2+u+1)^4)(u^4-u^3+u^2+1)^2(u^{106}+7u^{105}+\cdots-11u+1)$
c_3	$u^8(u^4-u^3+3u^2-2u+1)^2(u^{106}-3u^{105}+\cdots-1152u+256)$
c_5	$((u^2-u+1)^4)(u^4+u^3+u^2+1)^2(u^{106}+7u^{105}+\cdots-11u+1)$
c_6	$u^8(u^4+u^3+3u^2+2u+1)^2(u^{106}+3u^{105}+\cdots+1152u+256)$
c_7	$u^8(u^4+u^3+3u^2+2u+1)^2(u^{106}-3u^{105}+\cdots-1152u+256)$
c_8	$((u^2-u+1)^4)(u^4+u^3+u^2+1)^2(u^{106}-7u^{105}+\cdots+11u+1)$
c_9	$u^8(u^4-u^3+3u^2-2u+1)^2(u^{106}+3u^{105}+\cdots+1152u+256)$
c_{10}	$((u^2+u+1)^4)(u^4+u^3+3u^2+2u+1)^2(u^{106}-35u^{105}+\cdots-9u+1)$
c_{11}	$((u^2+u+1)^4)(u^4-u^3+u^2+1)^2(u^{106}-7u^{105}+\cdots+11u+1)$
c_{12}	$((u^2-u+1)^4)(u^4-u^3+3u^2-2u+1)^2(u^{106}-35u^{105}+\cdots-9u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_{10} c_{12}	$(y^2+y+1)^4(y^4+5y^3+7y^2+2y+1)^2$ $\cdot\,(y^{106}+79y^{105}+\cdots+1045y+1)$
c_2, c_5, c_8 c_{11}	$((y^2+y+1)^4)(y^4+y^3+3y^2+2y+1)^2(y^{106}+35y^{105}+\cdots+9y+1)$
c_3, c_6, c_7 c_9	$y^8(y^4+5y^3+7y^2+2y+1)^2$ $\cdot\,(y^{106}+55y^{105}+\cdots+1654784y+65536)$