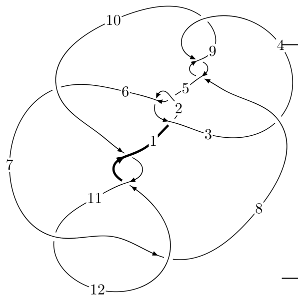
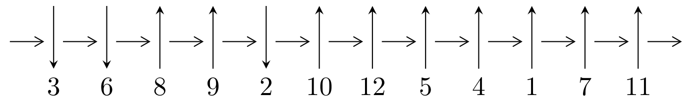
$12a_{0275}$ $(K12a_{0275})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$7{,}11 \underset{c_{11}}{\rightarrow} 12 \underset{c_{7}}{\rightarrow} 8 \underset{c_{12}}{\rightarrow} 1{,}4 \underset{c_{3}}{\rightarrow} 3 \underset{c_{10}}{\rightarrow} 10 \underset{c_{6}}{\rightarrow} 6 \underset{c_{2}}{\rightarrow} 2 \underset{c_{9}}{\rightarrow} 9 \underset{c_{4}}{\rightarrow} 5 \twoheadrightarrow c_1, c_5, c_8$$

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

$$I^u_1 = \langle 2.60711 \times 10^{31} u^{97} + 4.13570 \times 10^{31} u^{96} + \cdots + 1.17609 \times 10^{31} b - 9.51207 \times 10^{31},$$
$$7.27315 \times 10^{30} u^{97} + 3.06066 \times 10^{31} u^{96} + \cdots + 1.76413 \times 10^{31} a - 1.12339 \times 10^{32},\ u^{98} + 2u^{97} + \cdots - 11u -$$
$$I^u_2 = \langle -2u^2 b + b^2 + u^2 - 3u + 1,\ -u^2 + a + u,\ u^3 - u^2 + 1 \rangle$$
$$I^u_3 = \langle -u^2 + b,\ -u^2 + a - u,\ u^3 + u^2 - 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 107 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. $\boldsymbol{I_1^u =}$
$\boldsymbol{\langle 2.61\times10^{31}u^{97}+4.14\times10^{31}u^{96}+\cdots+1.18\times10^{31}b-9.51\times10^{31},\ 7.27\times10^{30}u^{97}+ 3.06\times10^{31}u^{96}+\cdots+1.76\times10^{31}a-1.12\times10^{32},\ u^{98}+2u^{97}+\cdots-11u-3\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_8 = \begin{pmatrix}u\\-u^3+u\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u^2+1\\-u^2\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-0.412279u^{97}-1.73494u^{96}+\cdots+19.5423u+6.36797\\-2.21676u^{97}-3.51649u^{96}+\cdots+23.8215u+8.08789\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-0.857679u^{97}-2.36436u^{96}+\cdots+22.7036u+7.60150\\-2.67472u^{97}-3.75515u^{96}+\cdots+25.4438u+8.53728\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}u^4-u^2+1\\u^4\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-u^9+2u^7-3u^5+2u^3-u\\-u^9+u^7-u^5+u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}0.107279u^{97}-0.436672u^{96}+\cdots+11.1633u+4.41126\\-1.68317u^{97}-2.85530u^{96}+\cdots+19.5719u+6.61020\end{pmatrix}$$
$$a_9 = \begin{pmatrix}2.65352u^{97}+2.88089u^{96}+\cdots-14.9561u-3.19424\\1.22758u^{97}-1.19856u^{96}+\cdots+8.21326u+4.27781\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-0.868547u^{97}-0.700412u^{96}+\cdots+2.11157u+0.420630\\1.82742u^{97}+2.47475u^{96}+\cdots-18.1294u-5.41346\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2.15454u^{97}-3.49753u^{96}+\cdots+45.8013u+14.7149$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{98} + 50u^{97} + \cdots + 30u + 1$
c_2, c_5	$u^{98} + 4u^{97} + \cdots - 4u - 1$
c_3	$u^{98} + u^{97} + \cdots - 880u + 200$
c_4, c_8, c_9	$u^{98} - u^{97} + \cdots - 48u + 8$
c_6	$u^{98} - 2u^{97} + \cdots + 11527u - 7419$
c_7, c_{11}	$u^{98} + 2u^{97} + \cdots - 11u - 3$
c_{10}, c_{12}	$u^{98} - 32u^{97} + \cdots - 7u + 9$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{98} + 6y^{97} + \cdots - 294y + 1$
c_2, c_5	$y^{98} - 50y^{97} + \cdots - 30y + 1$
c_3	$y^{98} + 7y^{97} + \cdots + 11398400y + 40000$
c_4, c_8, c_9	$y^{98} + 91y^{97} + \cdots - 1152y + 64$
c_6	$y^{98} + 64y^{96} + \cdots - 760444939y + 55041561$
c_7, c_{11}	$y^{98} - 32y^{97} + \cdots - 7y + 9$
c_{10}, c_{12}	$y^{98} + 72y^{97} + \cdots - 1075y + 81$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.734696 + 0.663905I$ $a = 0.268933 + 0.786528I$ $b = -0.174193 + 0.529627I$	$-1.64759 - 1.78795I$	0
$u = -0.734696 - 0.663905I$ $a = 0.268933 - 0.786528I$ $b = -0.174193 - 0.529627I$	$-1.64759 + 1.78795I$	0
$u = 0.664153 + 0.765570I$ $a = 0.24029 - 1.53419I$ $b = -1.41749 - 0.92344I$	$-0.08595 - 1.85140I$	0
$u = 0.664153 - 0.765570I$ $a = 0.24029 + 1.53419I$ $b = -1.41749 + 0.92344I$	$-0.08595 + 1.85140I$	0
$u = 0.974010 + 0.115853I$ $a = 2.15359 + 1.31393I$ $b = 1.283730 + 0.454853I$	$-4.35227 + 2.21027I$	0
$u = 0.974010 - 0.115853I$ $a = 2.15359 - 1.31393I$ $b = 1.283730 - 0.454853I$	$-4.35227 - 2.21027I$	0
$u = 1.033580 + 0.091897I$ $a = 0.399864 - 0.250616I$ $b = 0.241490 + 0.596866I$	$2.38941 + 2.66439I$	0
$u = 1.033580 - 0.091897I$ $a = 0.399864 + 0.250616I$ $b = 0.241490 - 0.596866I$	$2.38941 - 2.66439I$	0
$u = -0.686782 + 0.779974I$ $a = -0.098066 - 1.009560I$ $b = 0.336237 - 0.672280I$	$-3.57357 + 2.65527I$	0
$u = -0.686782 - 0.779974I$ $a = -0.098066 + 1.009560I$ $b = 0.336237 + 0.672280I$	$-3.57357 - 2.65527I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.048810 + 0.004708I$ $a = -0.715803 + 0.615832I$ $b = -0.522953 - 0.263740I$	$3.08776 - 2.29887I$	0
$u = 1.048810 - 0.004708I$ $a = -0.715803 - 0.615832I$ $b = -0.522953 + 0.263740I$	$3.08776 + 2.29887I$	0
$u = -1.052800 + 0.076933I$ $a = -1.42127 - 0.08382I$ $b = -0.911925 + 0.074163I$	$5.77405 - 1.58455I$	0
$u = -1.052800 - 0.076933I$ $a = -1.42127 + 0.08382I$ $b = -0.911925 - 0.074163I$	$5.77405 + 1.58455I$	0
$u = -0.678110 + 0.813029I$ $a = -0.18357 + 1.96127I$ $b = -2.45847 + 0.56304I$	$-5.35406 + 5.42665I$	0
$u = -0.678110 - 0.813029I$ $a = -0.18357 - 1.96127I$ $b = -2.45847 - 0.56304I$	$-5.35406 - 5.42665I$	0
$u = -0.723258 + 0.781799I$ $a = 0.81231 - 2.36644I$ $b = 3.40890 - 0.20602I$	$-10.29880 + 1.62019I$	0
$u = -0.723258 - 0.781799I$ $a = 0.81231 + 2.36644I$ $b = 3.40890 + 0.20602I$	$-10.29880 - 1.62019I$	0
$u = 0.678617 + 0.821492I$ $a = -0.32198 + 1.65550I$ $b = 1.37247 + 1.19340I$	$-2.43590 - 6.98834I$	0
$u = 0.678617 - 0.821492I$ $a = -0.32198 - 1.65550I$ $b = 1.37247 - 1.19340I$	$-2.43590 + 6.98834I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.928732+0.101713I$ $a=-0.256255-0.467748I$ $b=-0.13808-2.08888I$	$-4.87657-1.38006I$	0
$u=-0.928732-0.101713I$ $a=-0.256255+0.467748I$ $b=-0.13808+2.08888I$	$-4.87657+1.38006I$	0
$u=1.060740+0.131344I$ $a=-1.72992-0.60308I$ $b=-1.263170+0.011705I$	$1.06805+5.33557I$	0
$u=1.060740-0.131344I$ $a=-1.72992+0.60308I$ $b=-1.263170-0.011705I$	$1.06805-5.33557I$	0
$u=0.766804+0.744633I$ $a=0.05865+1.81149I$ $b=2.16829+0.98332I$	$-4.91150+1.14751I$	0
$u=0.766804-0.744633I$ $a=0.05865-1.81149I$ $b=2.16829-0.98332I$	$-4.91150-1.14751I$	0
$u=-0.987937+0.409006I$ $a=-0.916452-0.624323I$ $b=-0.45614-2.02402I$	$-2.70652+4.30447I$	0
$u=-0.987937-0.409006I$ $a=-0.916452+0.624323I$ $b=-0.45614+2.02402I$	$-2.70652-4.30447I$	0
$u=0.740977+0.773913I$ $a=0.556789+0.820914I$ $b=-0.196140-0.441436I$	$-10.60880-0.47636I$	0
$u=0.740977-0.773913I$ $a=0.556789-0.820914I$ $b=-0.196140+0.441436I$	$-10.60880+0.47636I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.957407 + 0.485442I$ $a = -0.517871 - 0.147787I$ $b = -0.99562 + 1.21717I$	$2.09681 - 0.69131I$	0
$u = 0.957407 - 0.485442I$ $a = -0.517871 + 0.147787I$ $b = -0.99562 - 1.21717I$	$2.09681 + 0.69131I$	0
$u = -0.951315 + 0.500130I$ $a = 1.048800 + 0.620778I$ $b = 0.34730 + 1.96268I$	$-1.044750 - 0.764706I$	0
$u = -0.951315 - 0.500130I$ $a = 1.048800 - 0.620778I$ $b = 0.34730 - 1.96268I$	$-1.044750 + 0.764706I$	0
$u = -1.066520 + 0.139595I$ $a = 1.320590 + 0.104609I$ $b = 0.861474 - 0.162656I$	$4.09275 - 6.88786I$	0
$u = -1.066520 - 0.139595I$ $a = 1.320590 - 0.104609I$ $b = 0.861474 + 0.162656I$	$4.09275 + 6.88786I$	0
$u = -0.880118 + 0.631470I$ $a = -1.67758 - 1.51107I$ $b = 0.85573 - 3.37184I$	$-6.95319 - 2.46093I$	0
$u = -0.880118 - 0.631470I$ $a = -1.67758 + 1.51107I$ $b = 0.85573 + 3.37184I$	$-6.95319 + 2.46093I$	0
$u = 1.075780 + 0.174335I$ $a = 1.86064 + 0.40213I$ $b = 1.42452 - 0.05583I$	$-1.27008 + 10.77240I$	0
$u = 1.075780 - 0.174335I$ $a = 1.86064 - 0.40213I$ $b = 1.42452 + 0.05583I$	$-1.27008 - 10.77240I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.690744 + 0.843837I$ $a = -0.11876 - 2.16819I$ $b = 2.41190 - 1.05109I$	$-8.14004 + 10.77530I$	0
$u = -0.690744 - 0.843837I$ $a = -0.11876 + 2.16819I$ $b = 2.41190 + 1.05109I$	$-8.14004 - 10.77530I$	0
$u = -0.896121$ $a = 1.95972$ $b = 0.975925$	-0.00908317	15.9790
$u = 0.885397 + 0.693912I$ $a = 0.339321 - 0.165892I$ $b = 0.973356 + 0.721573I$	$-7.99772 + 2.68301I$	0
$u = 0.885397 - 0.693912I$ $a = 0.339321 + 0.165892I$ $b = 0.973356 - 0.721573I$	$-7.99772 - 2.68301I$	0
$u = -0.964856 + 0.583616I$ $a = 0.122982 + 0.675980I$ $b = -0.997979 - 0.010842I$	$-0.45889 - 3.08345I$	0
$u = -0.964856 - 0.583616I$ $a = 0.122982 - 0.675980I$ $b = -0.997979 + 0.010842I$	$-0.45889 + 3.08345I$	0
$u = -0.543311 + 0.677762I$ $a = -0.402101 + 0.468161I$ $b = -1.147070 - 0.605260I$	$-2.00086 + 3.25948I$	$3.20197 - 3.63998I$
$u = -0.543311 - 0.677762I$ $a = -0.402101 - 0.468161I$ $b = -1.147070 + 0.605260I$	$-2.00086 - 3.25948I$	$3.20197 + 3.63998I$
$u = 0.979469 + 0.580581I$ $a = 0.938003 + 0.108373I$ $b = 1.32525 - 1.58756I$	$2.81422 + 4.41459I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.979469 - 0.580581I$ $a = 0.938003 - 0.108373I$ $b = 1.32525 + 1.58756I$	$2.81422 - 4.41459I$	0
$u = 0.845088 + 0.768773I$ $a = -0.300617 - 0.141131I$ $b = 0.531484 + 0.924146I$	$-8.01111 + 2.88840I$	0
$u = 0.845088 - 0.768773I$ $a = -0.300617 + 0.141131I$ $b = 0.531484 - 0.924146I$	$-8.01111 - 2.88840I$	0
$u = -0.827932 + 0.796921I$ $a = 0.235307 - 0.633403I$ $b = 0.463402 - 0.312534I$	$-5.02726 - 3.93837I$	0
$u = -0.827932 - 0.796921I$ $a = 0.235307 + 0.633403I$ $b = 0.463402 + 0.312534I$	$-5.02726 + 3.93837I$	0
$u = 0.812963 + 0.833602I$ $a = 0.863006 + 0.290924I$ $b = -0.018801 - 0.942954I$	$-10.35280 + 6.61154I$	0
$u = 0.812963 - 0.833602I$ $a = 0.863006 - 0.290924I$ $b = -0.018801 + 0.942954I$	$-10.35280 - 6.61154I$	0
$u = -0.975988 + 0.661994I$ $a = 0.837091 + 0.444177I$ $b = 0.298202 + 1.014370I$	$-0.87488 - 3.38182I$	0
$u = -0.975988 - 0.661994I$ $a = 0.837091 - 0.444177I$ $b = 0.298202 - 1.014370I$	$-0.87488 + 3.38182I$	0
$u = 0.891517 + 0.777987I$ $a = -0.167596 + 0.274913I$ $b = 0.77023 + 1.19118I$	$-7.91253 + 2.91496I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.891517 - 0.777987I$ $a = -0.167596 - 0.274913I$ $b = 0.77023 - 1.19118I$	$-7.91253 - 2.91496I$	0
$u = -1.003260 + 0.630448I$ $a = 0.465446 - 0.663409I$ $b = 1.75234 + 0.70638I$	$-0.72109 - 8.29532I$	0
$u = -1.003260 - 0.630448I$ $a = 0.465446 + 0.663409I$ $b = 1.75234 - 0.70638I$	$-0.72109 + 8.29532I$	0
$u = 0.951402 + 0.706783I$ $a = -1.86377 - 0.05859I$ $b = -1.84095 + 2.50699I$	$-4.34485 + 4.38252I$	0
$u = 0.951402 - 0.706783I$ $a = -1.86377 + 0.05859I$ $b = -1.84095 - 2.50699I$	$-4.34485 - 4.38252I$	0
$u = -0.922800 + 0.769461I$ $a = -0.584425 + 0.120528I$ $b = -0.496422 - 0.246804I$	$-4.73667 - 1.94087I$	0
$u = -0.922800 - 0.769461I$ $a = -0.584425 - 0.120528I$ $b = -0.496422 + 0.246804I$	$-4.73667 + 1.94087I$	0
$u = 0.974163 + 0.718879I$ $a = -0.618640 - 0.368169I$ $b = -1.33080 - 0.96990I$	$-9.89732 + 6.12933I$	0
$u = 0.974163 - 0.718879I$ $a = -0.618640 + 0.368169I$ $b = -1.33080 + 0.96990I$	$-9.89732 - 6.12933I$	0
$u = -0.986277 + 0.718325I$ $a = -2.23583 + 0.89659I$ $b = -3.70509 - 2.48584I$	$-9.49872 - 7.29344I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.986277 - 0.718325I$ $a = -2.23583 - 0.89659I$ $b = -3.70509 + 2.48584I$	$-9.49872 + 7.29344I$	0
$u = 1.008450 + 0.695338I$ $a = 1.51547 - 0.20734I$ $b = 1.40306 - 2.25150I$	$0.94289 + 7.40217I$	0
$u = 1.008450 - 0.695338I$ $a = 1.51547 + 0.20734I$ $b = 1.40306 + 2.25150I$	$0.94289 - 7.40217I$	0
$u = -1.003950 + 0.706737I$ $a = -0.940078 - 0.258556I$ $b = -0.604614 - 0.869244I$	$-2.61594 - 8.28446I$	0
$u = -1.003950 - 0.706737I$ $a = -0.940078 + 0.258556I$ $b = -0.604614 + 0.869244I$	$-2.61594 + 8.28446I$	0
$u = 0.952432 + 0.787199I$ $a = -0.233356 - 0.688774I$ $b = -1.19894 - 1.31614I$	$-9.92247 - 0.56488I$	0
$u = 0.952432 - 0.787199I$ $a = -0.233356 + 0.688774I$ $b = -1.19894 + 1.31614I$	$-9.92247 + 0.56488I$	0
$u = -1.017720 + 0.718230I$ $a = 1.83730 - 0.24404I$ $b = 2.63471 + 2.58637I$	$-4.32385 - 11.18140I$	0
$u = -1.017720 - 0.718230I$ $a = 1.83730 + 0.24404I$ $b = 2.63471 - 2.58637I$	$-4.32385 + 11.18140I$	0
$u = 1.020700 + 0.721839I$ $a = -1.57725 + 0.33929I$ $b = -1.30143 + 2.34008I$	$-1.39559 + 12.77850I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.020700 - 0.721839I$ $a = -1.57725 - 0.33929I$ $b = -1.30143 - 2.34008I$	$-1.39559 - 12.77850I$	0
$u = -1.024300 + 0.736136I$ $a = -2.01726 - 0.07594I$ $b = -2.43886 - 3.03995I$	$-7.1180 - 16.6773I$	0
$u = -1.024300 - 0.736136I$ $a = -2.01726 + 0.07594I$ $b = -2.43886 + 3.03995I$	$-7.1180 + 16.6773I$	0
$u = -0.466220 + 0.569770I$ $a = 0.648090 + 0.414506I$ $b = 0.412746 + 0.878072I$	$-1.68032 - 1.37989I$	$3.35615 + 3.69950I$
$u = -0.466220 - 0.569770I$ $a = 0.648090 - 0.414506I$ $b = 0.412746 - 0.878072I$	$-1.68032 + 1.37989I$	$3.35615 - 3.69950I$
$u = -0.145736 + 0.693433I$ $a = -1.53134 - 1.65052I$ $b = -0.085612 - 1.186910I$	$-5.28167 - 8.07071I$	$-0.44347 + 6.40023I$
$u = -0.145736 - 0.693433I$ $a = -1.53134 + 1.65052I$ $b = -0.085612 + 1.186910I$	$-5.28167 + 8.07071I$	$-0.44347 - 6.40023I$
$u = 0.386558 + 0.559721I$ $a = 0.573963 - 0.920489I$ $b = -0.645140 - 0.368414I$	$1.405300 + 0.016474I$	$8.39486 - 0.50750I$
$u = 0.386558 - 0.559721I$ $a = 0.573963 + 0.920489I$ $b = -0.645140 + 0.368414I$	$1.405300 - 0.016474I$	$8.39486 + 0.50750I$
$u = 0.199719 + 0.642870I$ $a = -0.774539 + 0.907692I$ $b = 0.417723 + 0.454729I$	$0.00186 + 4.54800I$	$4.24116 - 6.44785I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.199719 - 0.642870I$ $a = -0.774539 - 0.907692I$ $b = 0.417723 - 0.454729I$	$0.00186 - 4.54800I$	$4.24116 + 6.44785I$
$u = -0.213923 + 0.624262I$ $a = 1.56949 + 1.32301I$ $b = 0.093981 + 1.179720I$	$-3.01589 - 3.10558I$	$2.47804 + 2.78013I$
$u = -0.213923 - 0.624262I$ $a = 1.56949 - 1.32301I$ $b = 0.093981 - 1.179720I$	$-3.01589 + 3.10558I$	$2.47804 - 2.78013I$
$u = 0.584842$ $a = 0.394386$ $b = -0.366402$	0.748531	14.1870
$u = -0.227216 + 0.432211I$ $a = -0.337752 + 0.892423I$ $b = 0.282292 + 0.388004I$	$-1.49333 - 1.09550I$	$-0.53142 + 1.61867I$
$u = -0.227216 - 0.432211I$ $a = -0.337752 - 0.892423I$ $b = 0.282292 - 0.388004I$	$-1.49333 + 1.09550I$	$-0.53142 - 1.61867I$
$u = -0.048605 + 0.460204I$ $a = -2.63423 - 1.71957I$ $b = -0.029689 - 1.228200I$	$-7.48247 - 0.39602I$	$-4.30181 - 0.01088I$
$u = -0.048605 - 0.460204I$ $a = -2.63423 + 1.71957I$ $b = -0.029689 + 1.228200I$	$-7.48247 + 0.39602I$	$-4.30181 + 0.01088I$

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

(i) Arc colorings

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

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

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

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

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

$$a_4 = \begin{pmatrix} u^2 - u \\ b \end{pmatrix}$$

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

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

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

$$a_2 = \begin{pmatrix} -u^2b + u^2 - 2u \\ -bu + u^2 - 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^2 + b - u \\ -u^2b - u^2 + b - 2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^2b - 2u^2 + 2u + 1 \\ bu - 2u^2 + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.877439 + 0.744862I$ $a = -0.662359 + 0.562280I$ $b = -0.580103 + 0.370424I$	$-9.60386 + 2.82812I$	$-3.50976 - 2.97945I$
$u = 0.877439 + 0.744862I$ $a = -0.662359 + 0.562280I$ $b = 1.01026 + 2.24386I$	$-9.60386 + 2.82812I$	$-3.50976 - 2.97945I$
$u = 0.877439 - 0.744862I$ $a = -0.662359 - 0.562280I$ $b = -0.580103 - 0.370424I$	$-9.60386 - 2.82812I$	$-3.50976 + 2.97945I$
$u = 0.877439 - 0.744862I$ $a = -0.662359 - 0.562280I$ $b = 1.01026 - 2.24386I$	$-9.60386 - 2.82812I$	$-3.50976 + 2.97945I$
$u = -0.754878$ $a = 1.32472$ $b = 0.56984 + 1.87343I$	-5.46628	3.01950
$u = -0.754878$ $a = 1.32472$ $b = 0.56984 - 1.87343I$	-5.46628	3.01950

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.877439 + 0.744862I$ $a = -0.662359 - 0.562280I$ $b = 0.215080 - 1.307140I$	$-4.66906 - 2.82812I$	$4.89456 + 3.73884I$
$u = -0.877439 - 0.744862I$ $a = -0.662359 + 0.562280I$ $b = 0.215080 + 1.307140I$	$-4.66906 + 2.82812I$	$4.89456 - 3.73884I$
$u = 0.754878$ $a = 1.32472$ $b = 0.569840$	-0.531480	0.210880

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^9)(u^{98}+50u^{97}+\cdots+30u+1)$
c_2	$((u-1)^3)(u+1)^6(u^{98}+4u^{97}+\cdots-4u-1)$
c_3	$u^3(u^2+2)^3(u^{98}+u^{97}+\cdots-880u+200)$
c_4, c_8, c_9	$u^3(u^2+2)^3(u^{98}-u^{97}+\cdots-48u+8)$
c_5	$((u-1)^6)(u+1)^3(u^{98}+4u^{97}+\cdots-4u-1)$
c_6	$(u^3-u^2+2u-1)^2(u^3+u^2+2u+1)$ $\cdot\,(u^{98}-2u^{97}+\cdots+11527u-7419)$
c_7	$(u^3-u^2+1)(u^3+u^2-1)^2(u^{98}+2u^{97}+\cdots-11u-3)$
c_{10}	$((u^3+u^2+2u+1)^3)(u^{98}-32u^{97}+\cdots-7u+9)$
c_{11}	$((u^3-u^2+1)^2)(u^3+u^2-1)(u^{98}+2u^{97}+\cdots-11u-3)$
c_{12}	$((u^3-u^2+2u-1)^3)(u^{98}-32u^{97}+\cdots-7u+9)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^9)(y^{98}+6y^{97}+\cdots-294y+1)$
c_2, c_5	$((y-1)^9)(y^{98}-50y^{97}+\cdots-30y+1)$
c_3	$y^3(y+2)^6(y^{98}+7y^{97}+\cdots+1.13984\times10^7y+40000)$
c_4, c_8, c_9	$y^3(y+2)^6(y^{98}+91y^{97}+\cdots-1152y+64)$
c_6	$((y^3+3y^2+2y-1)^3)(y^{98}+64y^{96}+\cdots-7.60445\times10^8y+5.50416\times10^7)$
c_7, c_{11}	$((y^3-y^2+2y-1)^3)(y^{98}-32y^{97}+\cdots-7y+9)$
c_{10}, c_{12}	$((y^3+3y^2+2y-1)^3)(y^{98}+72y^{97}+\cdots-1075y+81)$