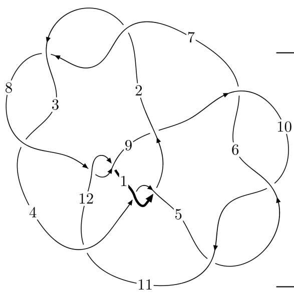
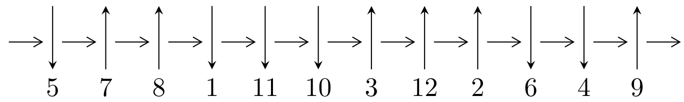
$12a_{1256}$ ($K12a_{1256}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I^u_1 = \langle &-5.64042\times 10^{124}u^{74} + 9.11620\times 10^{125}u^{73} + \cdots + 2.70123\times 10^{127}b + 2.73247\times 10^{127}, \\ &4.87882\times 10^{130}u^{74} - 9.04411\times 10^{130}u^{73} + \cdots + 1.18314\times 10^{130}a + 2.77838\times 10^{131},\ u^{75} - 2u^{74} + \cdots + 2u \end{aligned}$$

$$I^u_2 = \langle b-1,\ 3a^2 - 4au - 2a + 2u - 1,\ u^2 + u + 1\rangle$$

$$I^u_3 = \langle b+1,\ 3a - 2u + 1,\ u^2 - u + 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 81 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. $\boldsymbol{I_1^u = \langle -5.64 \times 10^{124}u^{74} + 9.12 \times 10^{125}u^{73} + \cdots + 2.70 \times 10^{127}b + 2.73 \times 10^{127},\ 4.88 \times 10^{130}u^{74} - 9.04 \times 10^{130}u^{73} + \cdots + 1.18 \times 10^{130}a + 2.78 \times 10^{131},\ u^{75} - 2u^{74} + \cdots + 2u - 1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -4.12363u^{74} + 7.64417u^{73} + \cdots - 122.730u - 23.4832 \\ 0.00208809u^{74} - 0.0337483u^{73} + \cdots - 0.242348u - 1.01157 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -4.12154u^{74} + 7.61042u^{73} + \cdots - 122.972u - 24.4947 \\ 0.00208809u^{74} - 0.0337483u^{73} + \cdots - 0.242348u - 1.01157 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -4.08530u^{74} + 7.78212u^{73} + \cdots - 132.075u - 25.7741 \\ 0.258927u^{74} - 0.465895u^{73} + \cdots - 1.90127u - 0.653622 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -36.6756u^{74} + 67.7990u^{73} + \cdots - 1097.47u - 238.095 \\ -0.354825u^{74} + 0.662723u^{73} + \cdots - 20.6852u - 4.84533 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -3.85208u^{74} + 7.11086u^{73} + \cdots - 116.744u - 23.2694 \\ -0.0278066u^{74} + 0.0198137u^{73} + \cdots + 0.251746u - 0.982130 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -32.4337u^{74} + 60.1196u^{73} + \cdots - 960.246u - 207.404 \\ -0.475413u^{74} + 0.935445u^{73} + \cdots - 15.5725u - 4.66742 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 5.31272u^{74} - 9.69537u^{73} + \cdots + 154.183u + 37.8595 \\ 0.280173u^{74} - 0.556071u^{73} + \cdots + 5.64826u + 0.243813 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -7.72579u^{74} + 14.3690u^{73} + \cdots - 174.823u - 40.1034$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{75} + 3u^{74} + \cdots - 25u - 63$
c_2, c_3, c_7	$u^{75} + 3u^{74} + \cdots - 180u + 36$
c_5, c_6, c_{10}	$u^{75} + 2u^{74} + \cdots + 2u + 1$
c_8, c_{12}	$u^{75} - 4u^{74} + \cdots - 12u - 1$
c_9	$219(219u^{75} + 2561u^{74} + \cdots - 4.11026 \times 10^7 u + 9603649)$
c_{11}	$219(219u^{75} - 3206u^{74} + \cdots + 2099664u - 1065445)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{75} - 39y^{74} + \cdots - 12479y - 3969$
c_2, c_3, c_7	$y^{75} - 85y^{74} + \cdots + 21456y - 1296$
c_5, c_6, c_{10}	$y^{75} + 74y^{74} + \cdots + 48y - 1$
c_8, c_{12}	$y^{75} - 46y^{74} + \cdots - 16y - 1$
c_9	$47961(47961y^{75} - 5944207y^{74} + \cdots + 1.71498 \times 10^{15}y - 9.22301 \times 10^{13})$
c_{11}	47961 $\cdot (47961y^{75} - 1905190y^{74} + \cdots - 29363839817524y - 1135173048025)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.876275 + 0.562290I$ $a = 0.705559 - 0.938222I$ $b = 1.235900 + 0.607876I$	$8.0251 - 11.7833I$	0
$u = 0.876275 - 0.562290I$ $a = 0.705559 + 0.938222I$ $b = 1.235900 - 0.607876I$	$8.0251 + 11.7833I$	0
$u = 0.645654 + 0.681122I$ $a = -0.141459 + 0.379704I$ $b = 0.211314 - 0.993029I$	$11.12440 - 6.04518I$	0
$u = 0.645654 - 0.681122I$ $a = -0.141459 - 0.379704I$ $b = 0.211314 + 0.993029I$	$11.12440 + 6.04518I$	0
$u = 0.869381 + 0.333279I$ $a = 0.989488 - 0.311346I$ $b = 0.475379 + 0.683609I$	$9.93704 + 1.09383I$	0
$u = 0.869381 - 0.333279I$ $a = 0.989488 + 0.311346I$ $b = 0.475379 - 0.683609I$	$9.93704 - 1.09383I$	0
$u = 0.887065 + 0.671795I$ $a = 0.080791 - 0.173949I$ $b = 1.043970 - 0.564127I$	$8.26968 + 5.91564I$	0
$u = 0.887065 - 0.671795I$ $a = 0.080791 + 0.173949I$ $b = 1.043970 + 0.564127I$	$8.26968 - 5.91564I$	0
$u = 0.617922 + 0.932156I$ $a = -0.091814 + 0.364728I$ $b = -0.900452 + 0.105348I$	$-1.38488 - 1.76088I$	0
$u = 0.617922 - 0.932156I$ $a = -0.091814 - 0.364728I$ $b = -0.900452 - 0.105348I$	$-1.38488 + 1.76088I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.630870 + 0.610023I$ $a = 0.209312 - 0.433808I$ $b = -1.020630 - 0.440018I$	$1.00908 - 3.90722I$	0
$u = -0.630870 - 0.610023I$ $a = 0.209312 + 0.433808I$ $b = -1.020630 + 0.440018I$	$1.00908 + 3.90722I$	0
$u = 0.781439 + 0.396315I$ $a = -0.681940 + 0.719996I$ $b = -1.063160 - 0.318737I$	$-2.82400 - 3.24021I$	0
$u = 0.781439 - 0.396315I$ $a = -0.681940 - 0.719996I$ $b = -1.063160 + 0.318737I$	$-2.82400 + 3.24021I$	0
$u = -0.200166 + 1.112240I$ $a = -0.555735 + 0.472886I$ $b = 1.303290 - 0.017947I$	$0.00341 + 2.25841I$	0
$u = -0.200166 - 1.112240I$ $a = -0.555735 - 0.472886I$ $b = 1.303290 + 0.017947I$	$0.00341 - 2.25841I$	0
$u = -1.008550 + 0.522926I$ $a = 0.622760 + 0.595151I$ $b = 0.988198 - 0.455399I$	$3.78624 + 4.97496I$	0
$u = -1.008550 - 0.522926I$ $a = 0.622760 - 0.595151I$ $b = 0.988198 + 0.455399I$	$3.78624 - 4.97496I$	0
$u = -0.715363 + 0.463662I$ $a = -0.662169 - 0.968737I$ $b = -1.207050 + 0.599270I$	$0.55943 + 8.51493I$	0
$u = -0.715363 - 0.463662I$ $a = -0.662169 + 0.968737I$ $b = -1.207050 - 0.599270I$	$0.55943 - 8.51493I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.295177 + 0.790335I$ $a = 1.085820 - 0.610170I$ $b = -0.174335 + 0.231695I$	$5.11741 + 2.09681I$	0
$u = -0.295177 - 0.790335I$ $a = 1.085820 + 0.610170I$ $b = -0.174335 - 0.231695I$	$5.11741 - 2.09681I$	0
$u = -0.820615 + 0.920549I$ $a = 0.221481 + 0.060826I$ $b = 0.669207 + 0.351108I$	$4.93623 + 1.38385I$	0
$u = -0.820615 - 0.920549I$ $a = 0.221481 - 0.060826I$ $b = 0.669207 - 0.351108I$	$4.93623 - 1.38385I$	0
$u = 0.476482 + 0.349271I$ $a = 0.536263 - 0.913748I$ $b = 1.179300 + 0.646970I$	$-0.37836 - 3.63250I$	$0.18820 + 7.11754I$
$u = 0.476482 - 0.349271I$ $a = 0.536263 + 0.913748I$ $b = 1.179300 - 0.646970I$	$-0.37836 + 3.63250I$	$0.18820 - 7.11754I$
$u = -0.12416 + 1.40957I$ $a = -0.49322 + 1.49192I$ $b = 1.156720 - 0.514868I$	$2.45398 + 2.51607I$	0
$u = -0.12416 - 1.40957I$ $a = -0.49322 - 1.49192I$ $b = 1.156720 + 0.514868I$	$2.45398 - 2.51607I$	0
$u = 0.06595 + 1.41816I$ $a = -1.06518 - 1.97261I$ $b = 0.726970 + 0.104746I$	$5.61190 - 0.24157I$	0
$u = 0.06595 - 1.41816I$ $a = -1.06518 + 1.97261I$ $b = 0.726970 - 0.104746I$	$5.61190 + 0.24157I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.21401+1.41679I$ $a=-0.32012-1.44823I$ $b=-0.818643+0.496806I$	$7.77805+2.57329I$	0
$u=-0.21401-1.41679I$ $a=-0.32012+1.44823I$ $b=-0.818643-0.496806I$	$7.77805-2.57329I$	0
$u=-0.318983+0.457075I$ $a=\ \ 0.073646+0.417549I$ $b=-0.203568-1.059760I$	$3.56627+2.77566I$	$7.45932-8.59352I$
$u=-0.318983-0.457075I$ $a=\ \ 0.073646-0.417549I$ $b=-0.203568+1.059760I$	$3.56627-2.77566I$	$7.45932+8.59352I$
$u=-0.02663+1.44552I$ $a=\ \ 0.33553+1.40138I$ $b=-1.237260-0.349849I$	$8.55739+0.60577I$	0
$u=-0.02663-1.44552I$ $a=\ \ 0.33553-1.40138I$ $b=-1.237260+0.349849I$	$8.55739-0.60577I$	0
$u=-0.509960+0.186306I$ $a=-1.86666-0.33094I$ $b=-0.427581+0.394554I$	$2.65696-0.21953I$	$3.66100-2.90140I$
$u=-0.509960-0.186306I$ $a=-1.86666+0.33094I$ $b=-0.427581-0.394554I$	$2.65696+0.21953I$	$3.66100+2.90140I$
$u=\ \ 0.13294+1.45442I$ $a=-0.70369-1.75188I$ $b=\ \ 1.30725+1.04690I$	$5.48724-5.77129I$	0
$u=\ \ 0.13294-1.45442I$ $a=-0.70369+1.75188I$ $b=\ \ 1.30725-1.04690I$	$5.48724+5.77129I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.501413 + 0.173375I$ $a = 1.18080 + 0.88385I$ $b = 1.178950 - 0.178137I$	$-2.66084 + 0.41205I$	$-3.72410 + 2.82659I$
$u = -0.501413 - 0.173375I$ $a = 1.18080 - 0.88385I$ $b = 1.178950 + 0.178137I$	$-2.66084 - 0.41205I$	$-3.72410 - 2.82659I$
$u = 0.07244 + 1.46773I$ $a = 0.129197 - 1.212420I$ $b = -0.164854 + 0.790449I$	$6.08949 - 1.95344I$	0
$u = 0.07244 - 1.46773I$ $a = 0.129197 + 1.212420I$ $b = -0.164854 - 0.790449I$	$6.08949 + 1.95344I$	0
$u = -0.07739 + 1.48364I$ $a = 0.47777 + 1.88720I$ $b = -0.38939 - 1.65589I$	$9.90796 + 4.12833I$	0
$u = -0.07739 - 1.48364I$ $a = 0.47777 - 1.88720I$ $b = -0.38939 + 1.65589I$	$9.90796 - 4.12833I$	0
$u = 0.02616 + 1.48660I$ $a = 1.37108 - 0.93149I$ $b = -2.00675 + 0.80274I$	$12.23390 - 1.45071I$	0
$u = 0.02616 - 1.48660I$ $a = 1.37108 + 0.93149I$ $b = -2.00675 - 0.80274I$	$12.23390 + 1.45071I$	0
$u = 0.25514 + 1.48012I$ $a = 0.25389 + 1.43353I$ $b = -1.160740 - 0.553557I$	$3.26790 - 6.92996I$	0
$u = 0.25514 - 1.48012I$ $a = 0.25389 - 1.43353I$ $b = -1.160740 + 0.553557I$	$3.26790 + 6.92996I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.11892 + 1.50576I$ $a = 0.824177 + 0.454392I$ $b = -0.704332 - 0.473961I$	$8.08900 - 1.43331I$	0
$u = -0.11892 - 1.50576I$ $a = 0.824177 - 0.454392I$ $b = -0.704332 + 0.473961I$	$8.08900 + 1.43331I$	0
$u = -0.24148 + 1.50171I$ $a = 0.38547 - 1.69930I$ $b = -1.30554 + 0.78742I$	$6.96349 + 11.98440I$	0
$u = -0.24148 - 1.50171I$ $a = 0.38547 + 1.69930I$ $b = -1.30554 - 0.78742I$	$6.96349 - 11.98440I$	0
$u = 0.290488 + 0.380055I$ $a = -1.87771 - 2.07115I$ $b = 0.958564 - 0.242001I$	$0.033322 + 0.939980I$	$-0.28548 + 8.35060I$
$u = 0.290488 - 0.380055I$ $a = -1.87771 + 2.07115I$ $b = 0.958564 + 0.242001I$	$0.033322 - 0.939980I$	$-0.28548 - 8.35060I$
$u = 0.246631 + 0.362441I$ $a = -0.412210 - 0.560123I$ $b = 0.095378 + 0.306837I$	$0.022305 - 0.818920I$	$0.60380 + 8.33349I$
$u = 0.246631 - 0.362441I$ $a = -0.412210 + 0.560123I$ $b = 0.095378 - 0.306837I$	$0.022305 + 0.818920I$	$0.60380 - 8.33349I$
$u = 0.38353 + 1.51514I$ $a = 0.343106 - 1.142940I$ $b = 0.865449 + 0.692400I$	$15.8330 - 3.6081I$	0
$u = 0.38353 - 1.51514I$ $a = 0.343106 + 1.142940I$ $b = 0.865449 - 0.692400I$	$15.8330 + 3.6081I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.129313 + 0.412192I$ $a = -0.761012 - 0.474573I$ $b = -1.48075 + 0.50912I$	$5.94006 - 0.95777I$	$13.8115 + 6.3144I$
$u = 0.129313 - 0.412192I$ $a = -0.761012 + 0.474573I$ $b = -1.48075 - 0.50912I$	$5.94006 + 0.95777I$	$13.8115 - 6.3144I$
$u = 0.19790 + 1.57054I$ $a = -0.45227 + 1.42247I$ $b = 0.201938 - 1.324450I$	$18.5743 - 9.1429I$	0
$u = 0.19790 - 1.57054I$ $a = -0.45227 - 1.42247I$ $b = 0.201938 + 1.324450I$	$18.5743 + 9.1429I$	0
$u = 0.30448 + 1.56248I$ $a = -0.18734 - 1.61409I$ $b = 1.35622 + 0.69432I$	$14.9505 - 16.1112I$	0
$u = 0.30448 - 1.56248I$ $a = -0.18734 + 1.61409I$ $b = 1.35622 - 0.69432I$	$14.9505 + 16.1112I$	0
$u = -0.17402 + 1.59685I$ $a = -0.163007 - 1.070100I$ $b = 0.276738 + 0.882519I$	$13.38520 + 4.43309I$	0
$u = -0.17402 - 1.59685I$ $a = -0.163007 + 1.070100I$ $b = 0.276738 - 0.882519I$	$13.38520 - 4.43309I$	0
$u = -0.33867 + 1.58027I$ $a = -0.107663 + 1.311530I$ $b = 1.184290 - 0.597745I$	$10.6747 + 9.8638I$	0
$u = -0.33867 - 1.58027I$ $a = -0.107663 - 1.311530I$ $b = 1.184290 + 0.597745I$	$10.6747 - 9.8638I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.22442+1.64310I$ $a = -0.436152+0.582597I$ $b = 0.746431-0.718512I$	$16.1817+1.7243I$	0
$u = 0.22442-1.64310I$ $a = -0.436152-0.582597I$ $b = 0.746431+0.718512I$	$16.1817-1.7243I$	0
$u = -0.243105+0.095142I$ $a = 2.59239+2.02032I$ $b = -0.861746-0.111814I$	$3.19638+0.01813I$	$0.93086+1.13023I$
$u = -0.243105-0.095142I$ $a = 2.59239-2.02032I$ $b = -0.861746+0.111814I$	$3.19638-0.01813I$	$0.93086-1.13023I$
$u = 0.151778$ $a = -54.3761$ $b = -1.06936$	4.98695	-85.6430

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u+1)^4$
c_2, c_3, c_7	$(u^2-2)^2$
c_4	$(u-1)^4$
c_5, c_6, c_8	$(u^2+u+1)^2$
c_9	$9(9u^4+12u+7)$
c_{10}, c_{12}	$(u^2-u+1)^2$
c_{11}	$9(9u^4+18u^3+27u^2+18u+7)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y-1)^4$
c_2, c_3, c_7	$(y-2)^4$
c_5, c_6, c_8 c_{10}, c_{12}	$(y^2+y+1)^2$
c_9	$81(81y^4+126y^2-144y+49)$
c_{11}	$81(81y^4+162y^3+207y^2+54y+49)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = -0.707107 + 0.985599I$ $b = \quad 1.00000$	$3.28987 + 2.02988I$	$2.00000 - 3.46410I$
$u = -0.500000 + 0.866025I$ $a = \quad 0.707107 + 0.169102I$ $b = \quad 1.00000$	$3.28987 + 2.02988I$	$2.00000 - 3.46410I$
$u = -0.500000 - 0.866025I$ $a = -0.707107 - 0.985599I$ $b = \quad 1.00000$	$3.28987 - 2.02988I$	$2.00000 + 3.46410I$
$u = -0.500000 - 0.866025I$ $a = \quad 0.707107 - 0.169102I$ $b = \quad 1.00000$	$3.28987 - 2.02988I$	$2.00000 + 3.46410I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{28}{3}u - 10$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y-1)^2$
c_2, c_3, c_7	y^2
c_5, c_6, c_8 c_{10}, c_{12}	y^2+y+1
c_9	$9(3y+1)^2$
c_{11}	$9(9y^2-3y+1)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.500000 + 0.866025I$ $a = 0.577350I$ $b = -1.00000$	$-1.64493 - 2.02988I$	$-5.33333 + 8.08290I$
$u = 0.500000 - 0.866025I$ $a = -0.577350I$ $b = -1.00000$	$-1.64493 + 2.02988I$	$-5.33333 - 8.08290I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^2)(u+1)^4(u^{75}+3u^{74}+\cdots-25u-63)$
c_2, c_3, c_7	$u^2(u^2-2)^2(u^{75}+3u^{74}+\cdots-180u+36)$
c_4	$((u-1)^4)(u+1)^2(u^{75}+3u^{74}+\cdots-25u-63)$
c_5, c_6	$(u^2-u+1)(u^2+u+1)^2(u^{75}+2u^{74}+\cdots+2u+1)$
c_8	$((u^2+u+1)^3)(u^{75}-4u^{74}+\cdots-12u-1)$
c_9	$5913(3u^2+1)(9u^4+12u+7)$ $\cdot(219u^{75}+2561u^{74}+\cdots-41102589u+9603649)$
c_{10}	$((u^2-u+1)^2)(u^2+u+1)(u^{75}+2u^{74}+\cdots+2u+1)$
c_{11}	$5913(3u^2-3u+1)(9u^4+18u^3+27u^2+18u+7)$ $\cdot(219u^{75}-3206u^{74}+\cdots+2099664u-1065445)$
c_{12}	$((u^2-u+1)^3)(u^{75}-4u^{74}+\cdots-12u-1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y-1)^6)(y^{75}-39y^{74}+\cdots-12479y-3969)$
c_2, c_3, c_7	$y^2(y-2)^4(y^{75}-85y^{74}+\cdots+21456y-1296)$
c_5, c_6, c_{10}	$((y^2+y+1)^3)(y^{75}+74y^{74}+\cdots+48y-1)$
c_8, c_{12}	$((y^2+y+1)^3)(y^{75}-46y^{74}+\cdots-16y-1)$
c_9	$34963569(3y+1)^2(81y^4+126y^2-144y+49)$ $\cdot(4.80\times10^4y^{75}-5.94\times10^6y^{74}+\cdots+1.71\times10^{15}y-9.22\times10^{13})$
c_{11}	$34963569(9y^2-3y+1)(81y^4+162y^3+207y^2+54y+49)$ $\cdot(47961y^{75}-1905190y^{74}+\cdots-29363839817524y-1135173048025)$