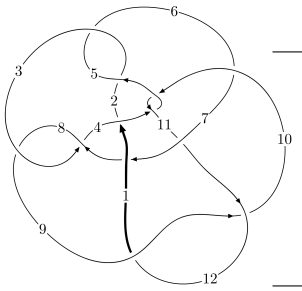
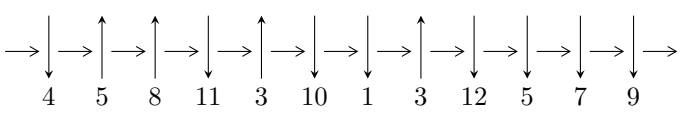
$12n_{0757}$ $(K12n_{0757})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle -1.59036 \times 10^{313} u^{84} + 4.77989 \times 10^{312} u^{83} + \cdots + 6.91107 \times 10^{314} b + 1.33907 \times 10^{316}, \\
&\quad - 9.31472 \times 10^{316} u^{84} + 5.83485 \times 10^{316} u^{83} + \cdots + 8.06522 \times 10^{317} a + 1.67212 \times 10^{320}, \\
&\quad u^{85} + 27 u^{83} + \cdots + 4868 u + 1167 \rangle \\
I_2^u &= \langle -14825031610 u^{27} + 18537500123 u^{26} + \cdots + 6921637191 b + 5273642732, \\
&\quad 305534977593367 u^{27} - 790948509790679 u^{26} + \cdots + 30157573241187 a - 1297710378699701, \\
&\quad u^{28} - u^{27} + \cdots - u + 1 \rangle \\
I_3^u &= \langle b - u,\ a + u - 1,\ u^2 - u + 1 \rangle \\
I_4^u &= \langle b - u,\ a + u,\ u^2 - u + 1 \rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 117 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. $\boldsymbol{I_1^u = \langle -1.59 \times 10^{313} u^{84} + 4.78 \times 10^{312} u^{83} + \cdots + 6.91 \times 10^{314} b + 1.34 \times 10^{316},\ -9.31 \times 10^{316} u^{84} + 5.83 \times 10^{316} u^{83} + \cdots + 8.07 \times 10^{317} a + 1.67 \times 10^{320},\ u^{85} + 27u^{83} + \cdots + 4868u + 1167 \rangle}$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} 0.115492u^{84} - 0.0723458u^{83} + \cdots - 355.666u - 207.324 \\ 0.0230118u^{84} - 0.00691628u^{83} + \cdots - 20.4097u - 19.3757 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} -0.110696u^{84} + 0.130681u^{83} + \cdots + 956.188u + 362.084 \\ 0.0473216u^{84} + 0.0461518u^{83} + \cdots + 828.691u + 175.587 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.138504u^{84} - 0.0792621u^{83} + \cdots - 376.076u - 226.700 \\ 0.0230118u^{84} - 0.00691628u^{83} + \cdots - 20.4097u - 19.3757 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.0884816u^{84} - 0.0814471u^{83} + \cdots - 1489.39u - 309.371 \\ -0.0199738u^{84} - 0.0308531u^{83} + \cdots - 502.451u - 116.544 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.0801281u^{84} + 0.0399526u^{83} + \cdots + 844.648u + 163.284 \\ 0.0667657u^{84} - 0.00303016u^{83} + \cdots + 340.400u + 24.5255 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.0801281u^{84} + 0.0399526u^{83} + \cdots + 844.648u + 163.284 \\ 0.0299497u^{84} - 0.0114804u^{83} + \cdots + 52.4010u - 22.0992 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.102164u^{84} - 0.0583120u^{83} + \cdots - 240.005u - 161.556 \\ 0.0117585u^{84} + 0.00232467u^{83} + \cdots + 42.4888u + 10.0149 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.00514215u^{84} + 0.0946688u^{83} + \cdots + 1138.04u + 304.529 \\ 0.0345003u^{84} + 0.0325184u^{83} + \cdots + 586.871u + 114.297 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.274096u^{84} - 0.0366470u^{83} + \cdots - 1775.76u - 145.097$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{85} - 5u^{84} + \cdots - 783263u - 43963$
c_2, c_5	$u^{85} + 4u^{84} + \cdots + 6399682u + 378351$
c_3, c_8	$u^{85} + 27u^{83} + \cdots + 4868u + 1167$
c_4, c_{10}	$u^{85} - 2u^{84} + \cdots - 32u + 3$
c_6	$u^{85} + 11u^{84} + \cdots - 284299729u + 28854207$
c_7	$u^{85} - 6u^{83} + \cdots - 4044u + 332$
c_9, c_{12}	$u^{85} + 25u^{83} + \cdots - 226u + 111$
c_{11}	$u^{85} - u^{84} + \cdots - 107u + 49$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{85} - 71y^{84} + \cdots + 1109768547995y - 1932745369$
c_2, c_5	$y^{85} + 72y^{84} + \cdots + 23176806835342y - 143149479201$
c_3, c_8	$y^{85} + 54y^{84} + \cdots - 53028158y - 1361889$
c_4, c_{10}	$y^{85} + 24y^{84} + \cdots - 356y - 9$
c_6	$y^{85} - 49y^{84} + \cdots + 24664681049291167y - 832565261598849$
c_7	$y^{85} - 12y^{84} + \cdots + 8779024y - 110224$
c_9, c_{12}	$y^{85} + 50y^{84} + \cdots - 318554y - 12321$
c_{11}	$y^{85} + 5y^{84} + \cdots - 31181y - 2401$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.365366 + 0.920085I$ $a = 1.28702 + 0.96017I$ $b = -0.282747 + 0.799096I$	$0.646862 - 0.894793I$	0
$u = 0.365366 - 0.920085I$ $a = 1.28702 - 0.96017I$ $b = -0.282747 - 0.799096I$	$0.646862 + 0.894793I$	0
$u = 0.069267 + 0.986380I$ $a = -1.81713 - 0.02982I$ $b = 1.341330 - 0.442065I$	$0.965648 + 0.188556I$	0
$u = 0.069267 - 0.986380I$ $a = -1.81713 + 0.02982I$ $b = 1.341330 + 0.442065I$	$0.965648 - 0.188556I$	0
$u = -0.378590 + 0.871699I$ $a = 0.170281 - 0.692301I$ $b = -0.745974 + 0.566971I$	$-2.12817 + 0.68447I$	0
$u = -0.378590 - 0.871699I$ $a = 0.170281 + 0.692301I$ $b = -0.745974 - 0.566971I$	$-2.12817 - 0.68447I$	0
$u = 0.493819 + 0.784435I$ $a = -0.706323 - 0.663700I$ $b = 0.544809 + 0.424971I$	$-0.12800 + 1.91048I$	0
$u = 0.493819 - 0.784435I$ $a = -0.706323 + 0.663700I$ $b = 0.544809 - 0.424971I$	$-0.12800 - 1.91048I$	0
$u = -1.033160 + 0.310486I$ $a = 0.025290 - 0.798856I$ $b = 0.612443 - 0.384276I$	$-3.89476 - 5.62843I$	0
$u = -1.033160 - 0.310486I$ $a = 0.025290 + 0.798856I$ $b = 0.612443 + 0.384276I$	$-3.89476 + 5.62843I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.114713+1.085940I$ $a=-0.043507+0.622927I$ $b=\ \ 0.13074-1.89360I$	$-1.59278-4.11572I$	0
$u=-0.114713-1.085940I$ $a=-0.043507-0.622927I$ $b=\ \ 0.13074+1.89360I$	$-1.59278+4.11572I$	0
$u=\ \ 1.005930+0.438338I$ $a=-0.310192+0.283012I$ $b=\ \ 0.278082+1.100300I$	$3.76571-0.51672I$	0
$u=\ \ 1.005930-0.438338I$ $a=-0.310192-0.283012I$ $b=\ \ 0.278082-1.100300I$	$3.76571+0.51672I$	0
$u=-0.501285+0.690430I$ $a=\ \ 1.51071-1.24410I$ $b=-0.572297-0.943715I$	$-1.08169-4.30528I$	0
$u=-0.501285-0.690430I$ $a=\ \ 1.51071+1.24410I$ $b=-0.572297+0.943715I$	$-1.08169+4.30528I$	0
$u=\ \ 0.543325+1.010130I$ $a=-1.64092-0.54557I$ $b=\ \ 0.256299-0.878934I$	$-0.04758+4.80218I$	0
$u=\ \ 0.543325-1.010130I$ $a=-1.64092+0.54557I$ $b=\ \ 0.256299+0.878934I$	$-0.04758-4.80218I$	0
$u=\ \ 0.045240+1.153380I$ $a=\ \ 1.40411-0.37311I$ $b=-0.472662-1.183120I$	$-4.84255+0.02543I$	0
$u=\ \ 0.045240-1.153380I$ $a=\ \ 1.40411+0.37311I$ $b=-0.472662+1.183120I$	$-4.84255-0.02543I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.353058+1.107940I$ $a=\ \ 1.74143+0.17963I$ $b=-1.09518-1.44123I$	$-3.35900-6.17617I$	0
$u=-0.353058-1.107940I$ $a=\ \ 1.74143-0.17963I$ $b=-1.09518+1.44123I$	$-3.35900+6.17617I$	0
$u=-0.028829+1.189170I$ $a=\ \ 0.777609-0.632382I$ $b=-0.649162+0.964464I$	$-1.95596+1.77445I$	0
$u=-0.028829-1.189170I$ $a=\ \ 0.777609+0.632382I$ $b=-0.649162-0.964464I$	$-1.95596-1.77445I$	0
$u=-0.541519+1.071560I$ $a=\ \ 2.03935-0.00109I$ $b=-0.443030-1.266400I$	$1.33677-7.91613I$	0
$u=-0.541519-1.071560I$ $a=\ \ 2.03935+0.00109I$ $b=-0.443030+1.266400I$	$1.33677+7.91613I$	0
$u=-0.677576+0.401202I$ $a=\ \ 0.107097+0.653212I$ $b=-0.287795+1.297880I$	$3.26531+3.22906I$	0
$u=-0.677576-0.401202I$ $a=\ \ 0.107097-0.653212I$ $b=-0.287795-1.297880I$	$3.26531-3.22906I$	0
$u=-0.534381+1.094250I$ $a=\ \ 1.193530-0.604330I$ $b=-0.847656-0.422881I$	$-3.43230-3.81045I$	0
$u=-0.534381-1.094250I$ $a=\ \ 1.193530+0.604330I$ $b=-0.847656+0.422881I$	$-3.43230+3.81045I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.148250 + 1.246730I$ $a = -1.46205 - 0.62108I$ $b = 0.397250 - 1.143730I$	$-5.66100 + 6.25301I$	0
$u = 0.148250 - 1.246730I$ $a = -1.46205 + 0.62108I$ $b = 0.397250 + 1.143730I$	$-5.66100 - 6.25301I$	0
$u = 0.168747 + 1.299570I$ $a = -1.160460 - 0.095231I$ $b = 0.621537 + 0.513207I$	$-2.41906 + 3.14939I$	0
$u = 0.168747 - 1.299570I$ $a = -1.160460 + 0.095231I$ $b = 0.621537 - 0.513207I$	$-2.41906 - 3.14939I$	0
$u = -0.127946 + 1.305470I$ $a = 1.01457 + 0.98940I$ $b = -0.355180 - 0.973680I$	$1.33477 - 3.68069I$	0
$u = -0.127946 - 1.305470I$ $a = 1.01457 - 0.98940I$ $b = -0.355180 + 0.973680I$	$1.33477 + 3.68069I$	0
$u = 0.742301 + 1.091100I$ $a = -1.65448 - 0.11863I$ $b = 0.574713 - 1.106020I$	$1.76789 + 6.80173I$	0
$u = 0.742301 - 1.091100I$ $a = -1.65448 + 0.11863I$ $b = 0.574713 + 1.106020I$	$1.76789 - 6.80173I$	0
$u = -0.177771 + 0.654829I$ $a = -1.54211 - 2.08388I$ $b = 0.280543 + 1.172630I$	$-0.28924 + 2.83636I$	$-2.71243 + 0.48181I$
$u = -0.177771 - 0.654829I$ $a = -1.54211 + 2.08388I$ $b = 0.280543 - 1.172630I$	$-0.28924 - 2.83636I$	$-2.71243 - 0.48181I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.135020 + 0.718752I$ $a = -0.256916 - 0.429627I$ $b = -0.433761 - 0.655056I$	$-3.14807 - 1.00103I$	0
$u = 1.135020 - 0.718752I$ $a = -0.256916 + 0.429627I$ $b = -0.433761 + 0.655056I$	$-3.14807 + 1.00103I$	0
$u = -0.333758 + 1.301710I$ $a = -1.125210 - 0.453522I$ $b = 0.660119 + 1.227750I$	$3.88771 - 6.40116I$	0
$u = -0.333758 - 1.301710I$ $a = -1.125210 + 0.453522I$ $b = 0.660119 - 1.227750I$	$3.88771 + 6.40116I$	0
$u = 1.357640 + 0.182554I$ $a = -0.318137 + 0.366712I$ $b = 0.240823 + 0.895859I$	$4.05362 - 1.09150I$	0
$u = 1.357640 - 0.182554I$ $a = -0.318137 - 0.366712I$ $b = 0.240823 - 0.895859I$	$4.05362 + 1.09150I$	0
$u = 0.101485 + 0.614941I$ $a = -0.51389 - 2.78335I$ $b = -0.384229 + 0.574149I$	$-2.99772 + 0.49314I$	$-10.20779 - 0.54757I$
$u = 0.101485 - 0.614941I$ $a = -0.51389 + 2.78335I$ $b = -0.384229 - 0.574149I$	$-2.99772 - 0.49314I$	$-10.20779 + 0.54757I$
$u = -0.043621 + 0.608805I$ $a = -0.337990 + 0.982054I$ $b = -0.158002 + 1.375520I$	$4.25302 + 3.14758I$	$-13.3582 - 6.4211I$
$u = -0.043621 - 0.608805I$ $a = -0.337990 - 0.982054I$ $b = -0.158002 - 1.375520I$	$4.25302 - 3.14758I$	$-13.3582 + 6.4211I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.083490+0.574146I$ $a=\ \ 3.28146-3.09096I$ $b=\ \ 0.139490+0.602255I$	$-2.83373-5.57072I$	$-9.83182+3.03437I$
$u=-0.083490-0.574146I$ $a=\ \ 3.28146+3.09096I$ $b=\ \ 0.139490-0.602255I$	$-2.83373+5.57072I$	$-9.83182-3.03437I$
$u=\ \ 0.24843+1.41104I$ $a=\ \ 1.201970+0.193297I$ $b=-1.311850-0.332674I$	$-10.03120+2.76694I$	0
$u=\ \ 0.24843-1.41104I$ $a=\ \ 1.201970-0.193297I$ $b=-1.311850+0.332674I$	$-10.03120-2.76694I$	0
$u=-1.42356+0.20208I$ $a=-0.157691-0.245300I$ $b=\ \ 0.541627-1.092830I$	$-1.82116+10.24000I$	0
$u=-1.42356-0.20208I$ $a=-0.157691+0.245300I$ $b=\ \ 0.541627+1.092830I$	$-1.82116-10.24000I$	0
$u=-0.43993+1.38434I$ $a=-1.127230+0.341272I$ $b=\ \ 1.278150-0.291752I$	$-9.01735-10.63490I$	0
$u=-0.43993-1.38434I$ $a=-1.127230-0.341272I$ $b=\ \ 1.278150+0.291752I$	$-9.01735+10.63490I$	0
$u=\ \ 1.46492+0.00723I$ $a=\ \ 0.100561+0.306556I$ $b=-0.484657+0.984843I$	$-2.04812+2.89700I$	0
$u=\ \ 1.46492-0.00723I$ $a=\ \ 0.100561-0.306556I$ $b=-0.484657-0.984843I$	$-2.04812-2.89700I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.348648+0.367582I$ $a=-1.90907-1.02160I$ $b=-0.458537+1.167530I$	$-1.08052+3.03153I$	$-4.19529-6.98712I$
$u=-0.348648-0.367582I$ $a=-1.90907+1.02160I$ $b=-0.458537-1.167530I$	$-1.08052-3.03153I$	$-4.19529+6.98712I$
$u=-0.450720$ $a=-0.0844993$ $b=-0.597318$	-1.01434	-9.80070
$u=\ \ 0.434220+0.100177I$ $a=-1.42778-0.53080I$ $b=\ \ 0.458829-0.425755I$	$1.81943+1.47313I$	$2.23841-5.05567I$
$u=\ \ 0.434220-0.100177I$ $a=-1.42778+0.53080I$ $b=\ \ 0.458829+0.425755I$	$1.81943-1.47313I$	$2.23841+5.05567I$
$u=\ \ 0.48637+1.49061I$ $a=-1.218430+0.238886I$ $b=\ \ 0.531464-1.038740I$	$-0.84154+7.69049I$	0
$u=\ \ 0.48637-1.49061I$ $a=-1.218430-0.238886I$ $b=\ \ 0.531464+1.038740I$	$-0.84154-7.69049I$	0
$u=\ \ 0.08112+1.57336I$ $a=-0.159001-1.055490I$ $b=\ \ 0.081345+0.516147I$	$-8.24646+3.36594I$	0
$u=\ \ 0.08112-1.57336I$ $a=-0.159001+1.055490I$ $b=\ \ 0.081345-0.516147I$	$-8.24646-3.36594I$	0
$u=-0.69079+1.42046I$ $a=-1.335130+0.029753I$ $b=\ \ 0.70729+1.31503I$	$-5.7735-17.5282I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.69079-1.42046I$ $a=-1.335130-0.029753I$ $b=\ \ 0.70729-1.31503I$	$-5.7735+17.5282I$	0
$u=\ \ 0.34818+1.54269I$ $a=\ \ 0.602664-0.112346I$ $b=-0.672908-0.149542I$	$-8.25680+4.07430I$	0
$u=\ \ 0.34818-1.54269I$ $a=\ \ 0.602664+0.112346I$ $b=-0.672908+0.149542I$	$-8.25680-4.07430I$	0
$u=\ \ 0.57420+1.47874I$ $a=\ \ 1.222600-0.079987I$ $b=-0.73659+1.29574I$	$-6.97944+9.81769I$	0
$u=\ \ 0.57420-1.47874I$ $a=\ \ 1.222600+0.079987I$ $b=-0.73659-1.29574I$	$-6.97944-9.81769I$	0
$u=-1.59091+0.16862I$ $a=\ \ 0.128237-0.245162I$ $b=\ \ 0.166901-0.946580I$	$9.22842+0.69070I$	0
$u=-1.59091-0.16862I$ $a=\ \ 0.128237+0.245162I$ $b=\ \ 0.166901+0.946580I$	$9.22842-0.69070I$	0
$u=-0.69996+1.44725I$ $a=-0.860669+0.298264I$ $b=\ \ 0.565060+1.060420I$	$-7.15592-1.23427I$	0
$u=-0.69996-1.44725I$ $a=-0.860669-0.298264I$ $b=\ \ 0.565060-1.060420I$	$-7.15592+1.23427I$	0
$u=\ \ 0.82426+1.38827I$ $a=\ \ 0.882873+0.248570I$ $b=-0.533007+1.170240I$	$-5.40898+8.75488I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.82426 - 1.38827I$ $a = 0.882873 - 0.248570I$ $b = -0.533007 - 1.170240I$	$-5.40898 - 8.75488I$	0
$u = -0.085056 + 0.336008I$ $a = -0.56056 + 1.33121I$ $b = 0.25862 - 1.46830I$	$8.09208 + 4.40093I$	$12.3851 - 9.4173I$
$u = -0.085056 - 0.336008I$ $a = -0.56056 - 1.33121I$ $b = 0.25862 + 1.46830I$	$8.09208 - 4.40093I$	$12.3851 + 9.4173I$
$u = -0.20418 + 1.71330I$ $a = -0.487948 + 0.042312I$ $b = 0.556415 - 0.423879I$	$-8.99209 + 3.35535I$	0
$u = -0.20418 - 1.71330I$ $a = -0.487948 - 0.042312I$ $b = 0.556415 + 0.423879I$	$-8.99209 - 3.35535I$	0

II.

$\boldsymbol{I_2^u = \langle -1.48\times 10^{10}u^{27}+1.85\times 10^{10}u^{26}+\cdots+6.92\times 10^{9}b+5.27\times 10^{9},\ 3.06\times 10^{14}u^{27}-7.91\times 10^{14}u^{26}+\cdots+3.02\times 10^{13}a-1.30\times 10^{15},\ u^{28}-u^{27}+\cdots-u+1\rangle}$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -10.1313u^{27}+26.2272u^{26}+\cdots-73.0464u+43.0310 \\ 2.14184u^{27}-2.67820u^{26}+\cdots+7.64335u-0.761907 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} -15.5591u^{27}+3.96166u^{26}+\cdots-13.7516u-28.8358 \\ -14.2009u^{27}+16.9863u^{26}+\cdots-40.4383u+0.727670 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -7.98945u^{27}+23.5490u^{26}+\cdots-65.4030u+42.2691 \\ 2.14184u^{27}-2.67820u^{26}+\cdots+7.64335u-0.761907 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 41.4725u^{27}-39.0584u^{26}+\cdots+93.9212u+17.8821 \\ -2.81965u^{27}-0.703457u^{26}+\cdots+2.08339u-6.66495 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -16.3340u^{27}+14.6107u^{26}+\cdots-34.9812u-14.2498 \\ -2.88685u^{27}+25.9054u^{26}+\cdots-87.0963u+49.7467 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -16.3340u^{27}+14.6107u^{26}+\cdots-34.9812u-14.2498 \\ 2.37034u^{27}+20.0121u^{26}+\cdots-72.4857u+51.4700 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -6.62994u^{27}+18.3565u^{26}+\cdots-52.7997u+32.1923 \\ 4.27994u^{27}-7.24008u^{26}+\cdots+20.0194u-7.23132 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 16.4780u^{27}-9.58480u^{26}+\cdots+30.2298u+18.3185 \\ -9.23901u^{27}-3.57653u^{26}+\cdots+48.8854u-44.8137 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$= \frac{180804181519969}{1436074916247}u^{27}-\frac{227368293507968}{1436074916247}u^{26}+\cdots+\frac{399031079592181}{1436074916247}u-\frac{17801125744790}{1436074916247}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{28} - 11u^{27} + \cdots + 33u + 7$
c_2	$u^{28} + u^{27} + \cdots - u + 1$
c_3	$u^{28} + u^{27} + \cdots + u + 1$
c_4	$u^{28} - u^{27} + \cdots - u + 1$
c_5	$u^{28} - u^{27} + \cdots + u + 1$
c_6	$u^{28} - 3u^{27} + \cdots - 259u + 49$
c_7	$u^{28} + 3u^{26} + \cdots + 53u^2 + 48$
c_8	$u^{28} - u^{27} + \cdots - u + 1$
c_9	$u^{28} + u^{27} + \cdots + 5u + 1$
c_{10}	$u^{28} + u^{27} + \cdots + u + 1$
c_{11}	$u^{28} - 2u^{27} + \cdots - 5u + 1$
c_{12}	$u^{28} - u^{27} + \cdots - 5u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{28} - 19y^{27} + \cdots + 2369y + 49$
c_2, c_5	$y^{28} + 5y^{27} + \cdots - 13y + 1$
c_3, c_8	$y^{28} + 11y^{27} + \cdots + 23y + 1$
c_4, c_{10}	$y^{28} + 21y^{27} + \cdots + 33y + 1$
c_6	$y^{28} - 13y^{27} + \cdots - 63063y + 2401$
c_7	$y^{28} + 6y^{27} + \cdots + 5088y + 2304$
c_9, c_{12}	$y^{28} + 23y^{27} + \cdots + 19y + 1$
c_{11}	$y^{28} + 12y^{27} + \cdots + 5y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.237894+0.956664I$ $a=\ 1.62413-0.61086I$ $b=-1.348680+0.253251I$	$1.17000-0.96284I$	$2.75739+5.45614I$
$u=-0.237894-0.956664I$ $a=\ 1.62413+0.61086I$ $b=-1.348680-0.253251I$	$1.17000+0.96284I$	$2.75739-5.45614I$
$u=-0.075270+0.920982I$ $a=\ 1.46046+0.61112I$ $b=-0.154790-0.165445I$	$0.10200-1.96445I$	$-3.39434+3.81435I$
$u=-0.075270-0.920982I$ $a=\ 1.46046-0.61112I$ $b=-0.154790+0.165445I$	$0.10200+1.96445I$	$-3.39434-3.81435I$
$u=\ 0.767899+0.489005I$ $a=\ 0.28195-1.49523I$ $b=\ 0.288649-0.938440I$	$-1.76432+0.94657I$	$-3.08016-1.47243I$
$u=\ 0.767899-0.489005I$ $a=\ 0.28195+1.49523I$ $b=\ 0.288649+0.938440I$	$-1.76432-0.94657I$	$-3.08016+1.47243I$
$u=\ 0.345981+1.078720I$ $a=-1.29799-0.58885I$ $b=\ 0.464033+0.523133I$	$-1.11821+3.08885I$	$-3.90201-4.91311I$
$u=\ 0.345981-1.078720I$ $a=-1.29799+0.58885I$ $b=\ 0.464033-0.523133I$	$-1.11821-3.08885I$	$-3.90201+4.91311I$
$u=\ 0.361782+1.161100I$ $a=-1.44305-0.02533I$ $b=\ 0.83558-1.28549I$	$-3.30691+5.70672I$	$-6.21178-1.53244I$
$u=\ 0.361782-1.161100I$ $a=-1.44305+0.02533I$ $b=\ 0.83558+1.28549I$	$-3.30691-5.70672I$	$-6.21178+1.53244I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.460734+0.557400I$ $a=\ \ 1.67016-3.00711I$ $b=-0.283700-0.830897I$	$-2.40630-6.12716I$	$-2.90922+11.28305I$
$u=-0.460734-0.557400I$ $a=\ \ 1.67016+3.00711I$ $b=-0.283700+0.830897I$	$-2.40630+6.12716I$	$-2.90922-11.28305I$
$u=\ \ 1.283280+0.227081I$ $a=-0.422310+0.369260I$ $b=\ \ 0.241891+0.958455I$	$4.34526-0.97725I$	$15.3469+0.I$
$u=\ \ 1.283280-0.227081I$ $a=-0.422310-0.369260I$ $b=\ \ 0.241891-0.958455I$	$4.34526+0.97725I$	$15.3469+0.I$
$u=-0.499201+1.214250I$ $a=\ \ 1.39941+0.31082I$ $b=-0.583152-1.238720I$	$4.75725-7.02891I$	$1.79878+6.91651I$
$u=-0.499201-1.214250I$ $a=\ \ 1.39941-0.31082I$ $b=-0.583152+1.238720I$	$4.75725+7.02891I$	$1.79878-6.91651I$
$u=\ \ 0.616251+1.161350I$ $a=-1.77881+0.02178I$ $b=\ \ 0.500258-1.145780I$	$1.08473+7.05378I$	$-5.34427-7.49870I$
$u=\ \ 0.616251-1.161350I$ $a=-1.77881-0.02178I$ $b=\ \ 0.500258+1.145780I$	$1.08473-7.05378I$	$-5.34427+7.49870I$
$u=-0.121598+0.618770I$ $a=\ \ 0.363385-0.311626I$ $b=-0.28392+1.51928I$	$7.80044+4.25334I$	$-9.98560+1.63731I$
$u=-0.121598-0.618770I$ $a=\ \ 0.363385+0.311626I$ $b=-0.28392-1.51928I$	$7.80044-4.25334I$	$-9.98560-1.63731I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.060992+0.612880I$ $a=\ \ 0.79439-2.52484I$ $b=-0.15044+1.57854I$	$0.00703-3.49133I$	$2.69813+10.38411I$
$u=-0.060992-0.612880I$ $a=\ \ 0.79439+2.52484I$ $b=-0.15044-1.57854I$	$0.00703+3.49133I$	$2.69813-10.38411I$
$u=\ \ 0.132401+0.495278I$ $a=\ \ 0.05605+1.75947I$ $b=\ \ 0.175425+1.332670I$	$4.54210-3.04662I$	$11.87871-1.91283I$
$u=\ \ 0.132401-0.495278I$ $a=\ \ 0.05605-1.75947I$ $b=\ \ 0.175425-1.332670I$	$4.54210+3.04662I$	$11.87871+1.91283I$
$u=-1.60870+0.24907I$ $a=-0.047493+0.236281I$ $b=-0.220934+0.958878I$	$9.18806+0.90073I$	$0.-20.1489I$
$u=-1.60870-0.24907I$ $a=-0.047493-0.236281I$ $b=-0.220934-0.958878I$	$9.18806-0.90073I$	$0.+20.1489I$
$u=\ \ 0.05679+1.65897I$ $a=-0.160288-0.878952I$ $b=\ \ 0.019782+0.634182I$	$-7.95181+3.45202I$	0
$u=\ \ 0.05679-1.65897I$ $a=-0.160288+0.878952I$ $b=\ \ 0.019782-0.634182I$	$-7.95181-3.45202I$	0

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u - 8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

	Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.500000+0.866025I$		
$a=$	$0.500000-0.866025I$	$-1.64493-2.02988I$	$-6.00000+3.46410I$
$b=$	$0.500000+0.866025I$		
$u=$	$0.500000-0.866025I$		
$a=$	$0.500000+0.866025I$	$-1.64493+2.02988I$	$-6.00000-3.46410I$
$b=$	$0.500000-0.866025I$		

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

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_4 = \begin{pmatrix} u \\ u-1 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

$$a_5 = \begin{pmatrix} u \\ u-2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1 \\ 3u-1 \end{pmatrix}$$

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

(ii) Obstruction class $= -1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.500000 + 0.866025I$ $a = -0.500000 - 0.866025I$ $b = 0.500000 + 0.866025I$	$2.02988I$	$0. - 3.46410I$
$u = 0.500000 - 0.866025I$ $a = -0.500000 + 0.866025I$ $b = 0.500000 - 0.866025I$	$- 2.02988I$	$0. + 3.46410I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^2)(u^2+3u+3)(u^{28}-11u^{27}+\cdots+33u+7)$ $\cdot(u^{85}-5u^{84}+\cdots-783263u-43963)$
c_2	$((u^2+u+1)^2)(u^{28}+u^{27}+\cdots-u+1)$ $\cdot(u^{85}+4u^{84}+\cdots+6399682u+378351)$
c_3	$(u^2-u+1)(u^2+u+1)(u^{28}+u^{27}+\cdots+u+1)$ $\cdot(u^{85}+27u^{83}+\cdots+4868u+1167)$
c_4	$((u^2+u+1)^2)(u^{28}-u^{27}+\cdots-u+1)(u^{85}-2u^{84}+\cdots-32u+3)$
c_5	$(u^2-u+1)(u^2+u+1)(u^{28}-u^{27}+\cdots+u+1)$ $\cdot(u^{85}+4u^{84}+\cdots+6399682u+378351)$
c_6	$((u-1)^2)(u^2-u+1)(u^{28}-3u^{27}+\cdots-259u+49)$ $\cdot(u^{85}+11u^{84}+\cdots-284299729u+28854207)$
c_7	$u^2(u^2+u+1)(u^{28}+3u^{26}+\cdots+53u^2+48)$ $\cdot(u^{85}-6u^{83}+\cdots-4044u+332)$
c_8	$((u^2-u+1)^2)(u^{28}-u^{27}+\cdots-u+1)$ $\cdot(u^{85}+27u^{83}+\cdots+4868u+1167)$
c_9	$((u^2-u+1)^2)(u^{28}+u^{27}+\cdots+5u+1)$ $\cdot(u^{85}+25u^{83}+\cdots-226u+111)$
c_{10}	$(u^2-u+1)(u^2+u+1)(u^{28}+u^{27}+\cdots+u+1)$ $\cdot(u^{85}-2u^{84}+\cdots-32u+3)$
c_{11}	$u^2(u+1)^2(u^{28}-2u^{27}+\cdots-5u+1)(u^{85}-u^{84}+\cdots-107u+49)$
c_{12}	$(u^2-u+1)(u^2+u+1)(u^{28}-u^{27}+\cdots-5u+1)$ $\cdot(u^{85}+25u^{83}+\cdots-226u+111)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^2)(y^2-3y+9)(y^{28}-19y^{27}+\cdots+2369y+49)$ $\cdot(y^{85}-71y^{84}+\cdots+1109768547995y-1932745369)$
c_2, c_5	$((y^2+y+1)^2)(y^{28}+5y^{27}+\cdots-13y+1)$ $\cdot(y^{85}+72y^{84}+\cdots+23176806835342y-143149479201)$
c_3, c_8	$((y^2+y+1)^2)(y^{28}+11y^{27}+\cdots+23y+1)$ $\cdot(y^{85}+54y^{84}+\cdots-53028158y-1361889)$
c_4, c_{10}	$((y^2+y+1)^2)(y^{28}+21y^{27}+\cdots+33y+1)$ $\cdot(y^{85}+24y^{84}+\cdots-356y-9)$
c_6	$((y-1)^2)(y^2+y+1)(y^{28}-13y^{27}+\cdots-63063y+2401)$ $\cdot(y^{85}-49y^{84}+\cdots+24664681049291167y-832565261598849)$
c_7	$y^2(y^2+y+1)(y^{28}+6y^{27}+\cdots+5088y+2304)$ $\cdot(y^{85}-12y^{84}+\cdots+8779024y-110224)$
c_9, c_{12}	$((y^2+y+1)^2)(y^{28}+23y^{27}+\cdots+19y+1)$ $\cdot(y^{85}+50y^{84}+\cdots-318554y-12321)$
c_{11}	$y^2(y-1)^2(y^{28}+12y^{27}+\cdots+5y+1)$ $\cdot(y^{85}+5y^{84}+\cdots-31181y-2401)$