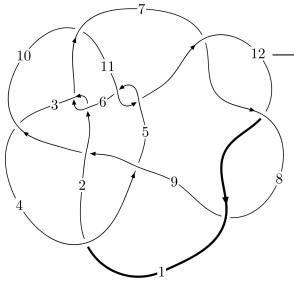
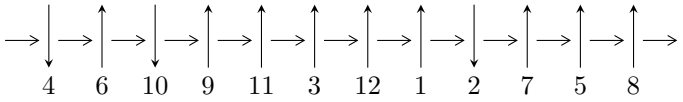
$12a_{0956}$ $(K12a_{0956})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 5.01989 \times 10^{429} u^{132} + 6.06464 \times 10^{430} u^{131} + \cdots + 3.60673 \times 10^{430} b + 3.79307 \times 10^{433}, \\ & 6.26086 \times 10^{434} u^{132} + 7.00442 \times 10^{434} u^{131} + \cdots + 2.74472 \times 10^{433} a - 3.98484 \times 10^{437}, \\ & u^{133} - 35 u^{131} + \cdots - 192 u + 761 \rangle \\ I_2^u = \langle & 305069750 u^{28} + 681402822 u^{27} + \cdots + 8159603 b - 631763705, \\ & - 684332979 u^{28} - 1764814437 u^{27} + \cdots + 8159603 a + 920265249,\ u^{29} + 3 u^{28} + \cdots - 6 u - 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 162 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. $\boldsymbol{I_1^u = \langle 5.02 \times 10^{429} u^{132} + 6.06 \times 10^{430} u^{131} + \cdots + 3.61 \times 10^{430} b + 3.79 \times 10^{433},\ 6.26 \times 10^{434} u^{132} + 7.00 \times 10^{434} u^{131} + \cdots + 2.74 \times 10^{433} a - 3.98 \times 10^{437},\ u^{133} - 35 u^{131} + \cdots - 192 u + 761 \rangle}$

(i) Arc colorings

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

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_{11} = \begin{pmatrix} -22.8106 u^{132} - 25.5196 u^{131} + \cdots + 7406.48 u + 14518.2 \\ -0.139181 u^{132} - 1.68148 u^{131} + \cdots - 1709.02 u - 1051.67 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -18.6049 u^{132} - 9.07059 u^{131} + \cdots + 21422.0 u + 20981.3 \\ -1.74155 u^{132} + 6.42924 u^{131} + \cdots + 14068.1 u + 8478.97 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -258.222 u^{132} - 229.030 u^{131} + \cdots + 193487. u + 221526. \\ 2.69839 u^{132} + 1.79774 u^{131} + \cdots - 2931.78 u - 2819.29 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -22.6714 u^{132} - 23.8382 u^{131} + \cdots + 9115.50 u + 15569.9 \\ -0.139181 u^{132} - 1.68148 u^{131} + \cdots - 1709.02 u - 1051.67 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -16.9499 u^{132} - 17.0235 u^{131} + \cdots + 4983.99 u + 11235.4 \\ 2.54388 u^{132} + 2.52094 u^{131} + \cdots - 1084.16 u - 1796.53 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -151.474 u^{132} - 154.130 u^{131} + \cdots + 82798.9 u + 113115. \\ 10.4126 u^{132} + 9.97071 u^{131} + \cdots - 5024.52 u - 7744.52 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -27.4107 u^{132} - 30.6810 u^{131} + \cdots + 7765.47 u + 17086.0 \\ -3.58075 u^{132} - 3.60481 u^{131} + \cdots + 1933.82 u + 2639.59 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 306.838 u^{132} + 285.363 u^{131} + \cdots - 208577. u - 251784. \\ -11.8525 u^{132} - 10.7196 u^{131} + \cdots + 6720.53 u + 9349.95 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 237.869 u^{132} + 195.350 u^{131} + \cdots - 206753. u - 218314.$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{133} - 5u^{132} + \cdots - 161632u - 14048$
c_2, c_6	$u^{133} - 35u^{131} + \cdots - 192u + 761$
c_3	$u^{133} - u^{132} + \cdots - 4726716u - 515789$
c_4	$u^{133} + 3u^{132} + \cdots + 41074u + 6061$
c_5, c_{11}	$u^{133} - u^{132} + \cdots - 45568u - 71168$
c_7, c_8, c_{12}	$u^{133} + u^{132} + \cdots - 20u - 1$
c_9	$u^{133} - u^{132} + \cdots - 546u - 43$
c_{10}	$u^{133} - 2u^{132} + \cdots - 540770u + 77627$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{133} + 11y^{132} + \cdots + 71281468928y - 197346304$
c_2, c_6	$y^{133} - 70y^{132} + \cdots + 16482074y - 579121$
c_3	$y^{133} + 9y^{132} + \cdots + 782897585812y - 266038292521$
c_4	$y^{133} - 13y^{132} + \cdots - 508705604y - 36735721$
c_5, c_{11}	$y^{133} + 49y^{132} + \cdots - 137462939648y - 5064884224$
c_7, c_8, c_{12}	$y^{133} - 135y^{132} + \cdots + 164y - 1$
c_9	$y^{133} - 17y^{132} + \cdots + 624486y - 1849$
c_{10}	$y^{133} - 34y^{132} + \cdots + 514331922226y - 6025951129$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.988920 + 0.138600I$ $a = -0.01868 + 2.61482I$ $b = 0.111075 - 0.454031I$	$5.06561 + 0.42762I$	0
$u = 0.988920 - 0.138600I$ $a = -0.01868 - 2.61482I$ $b = 0.111075 + 0.454031I$	$5.06561 - 0.42762I$	0
$u = -0.873966 + 0.444822I$ $a = 1.83735 - 0.05270I$ $b = 0.797900 - 0.326681I$	$-3.07390 - 2.52617I$	0
$u = -0.873966 - 0.444822I$ $a = 1.83735 + 0.05270I$ $b = 0.797900 + 0.326681I$	$-3.07390 + 2.52617I$	0
$u = -0.934196 + 0.415806I$ $a = -2.09634 + 0.44286I$ $b = -0.578069 + 0.732095I$	$-3.01255 - 6.47573I$	0
$u = -0.934196 - 0.415806I$ $a = -2.09634 - 0.44286I$ $b = -0.578069 - 0.732095I$	$-3.01255 + 6.47573I$	0
$u = -0.944903 + 0.394113I$ $a = 2.37299 - 0.55951I$ $b = 0.512928 - 0.998907I$	$3.62121 - 9.53053I$	0
$u = -0.944903 - 0.394113I$ $a = 2.37299 + 0.55951I$ $b = 0.512928 + 0.998907I$	$3.62121 + 9.53053I$	0
$u = 0.931719$ $a = 7.28657$ $b = 0.174112$	4.76527	0
$u = 0.908709 + 0.198506I$ $a = -1.49042 + 0.12597I$ $b = -1.16136 + 1.05086I$	$-1.15100 + 1.00525I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.908709 - 0.198506I$ $a = -1.49042 - 0.12597I$ $b = -1.16136 - 1.05086I$	$-1.15100 - 1.00525I$	0
$u = -0.775714 + 0.512116I$ $a = 1.36243 + 0.77522I$ $b = 1.063830 + 0.532036I$	$-3.35517 - 2.09583I$	0
$u = -0.775714 - 0.512116I$ $a = 1.36243 - 0.77522I$ $b = 1.063830 - 0.532036I$	$-3.35517 + 2.09583I$	0
$u = -0.173448 + 1.057700I$ $a = -0.118423 - 0.201854I$ $b = -0.628440 - 0.802795I$	$0.26270 + 4.87247I$	0
$u = -0.173448 - 1.057700I$ $a = -0.118423 + 0.201854I$ $b = -0.628440 + 0.802795I$	$0.26270 - 4.87247I$	0
$u = -0.761394 + 0.524998I$ $a = -1.71016 - 1.20594I$ $b = -1.59048 - 0.60273I$	$0.85958 - 2.13851I$	0
$u = -0.761394 - 0.524998I$ $a = -1.71016 + 1.20594I$ $b = -1.59048 + 0.60273I$	$0.85958 + 2.13851I$	0
$u = 0.854372 + 0.353578I$ $a = -2.58243 - 1.22405I$ $b = -1.02493 - 1.47052I$	$3.73823 - 5.31287I$	0
$u = 0.854372 - 0.353578I$ $a = -2.58243 + 1.22405I$ $b = -1.02493 + 1.47052I$	$3.73823 + 5.31287I$	0
$u = 0.901145 + 0.204526I$ $a = -2.19001 - 0.49699I$ $b = -1.287730 + 0.221407I$	$-1.15876 + 0.86950I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.901145 - 0.204526I$ $a = -2.19001 + 0.49699I$ $b = -1.287730 - 0.221407I$	$-1.15876 - 0.86950I$	0
$u = 0.865077 + 0.291875I$ $a = 2.54001 + 0.96713I$ $b = 1.14692 + 0.91206I$	$-2.30330 - 2.38565I$	0
$u = 0.865077 - 0.291875I$ $a = 2.54001 - 0.96713I$ $b = 1.14692 - 0.91206I$	$-2.30330 + 2.38565I$	0
$u = 0.029311 + 0.911005I$ $a = -0.071683 + 0.543041I$ $b = -1.068210 - 0.220558I$	$7.28500 + 6.69681I$	0
$u = 0.029311 - 0.911005I$ $a = -0.071683 - 0.543041I$ $b = -1.068210 + 0.220558I$	$7.28500 - 6.69681I$	0
$u = -0.198853 + 0.888063I$ $a = -0.494799 - 0.516999I$ $b = 0.605104 - 0.646999I$	$4.45599 - 5.34269I$	0
$u = -0.198853 - 0.888063I$ $a = -0.494799 + 0.516999I$ $b = 0.605104 + 0.646999I$	$4.45599 + 5.34269I$	0
$u = -0.783519 + 0.445304I$ $a = -0.520026 - 1.227660I$ $b = -0.76729 - 1.28515I$	$2.37891 - 3.23849I$	0
$u = -0.783519 - 0.445304I$ $a = -0.520026 + 1.227660I$ $b = -0.76729 + 1.28515I$	$2.37891 + 3.23849I$	0
$u = 1.092180 + 0.150295I$ $a = -1.182540 - 0.068170I$ $b = -0.069476 - 0.254256I$	$6.52211 - 0.06200I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.092180 - 0.150295I$ $a = -1.182540 + 0.068170I$ $b = -0.069476 + 0.254256I$	$6.52211 + 0.06200I$	0
$u = 0.862696 + 0.233785I$ $a = 0.262514 - 1.252500I$ $b = 0.62670 - 2.07541I$	$-2.43076 + 4.82491I$	0
$u = 0.862696 - 0.233785I$ $a = 0.262514 + 1.252500I$ $b = 0.62670 + 2.07541I$	$-2.43076 - 4.82491I$	0
$u = 0.028491 + 0.886624I$ $a = -0.074201 - 0.428514I$ $b = 0.738909 + 0.306732I$	$0.50495 + 4.20405I$	0
$u = 0.028491 - 0.886624I$ $a = -0.074201 + 0.428514I$ $b = 0.738909 - 0.306732I$	$0.50495 - 4.20405I$	0
$u = -0.932420 + 0.620236I$ $a = 1.30938 + 1.41471I$ $b = 2.11417 - 0.03152I$	$9.81908 - 2.45914I$	0
$u = -0.932420 - 0.620236I$ $a = 1.30938 - 1.41471I$ $b = 2.11417 + 0.03152I$	$9.81908 + 2.45914I$	0
$u = 0.285616 + 1.083460I$ $a = 0.110519 + 0.446575I$ $b = -1.030560 + 0.863341I$	$4.00112 - 12.85700I$	0
$u = 0.285616 - 1.083460I$ $a = 0.110519 - 0.446575I$ $b = -1.030560 - 0.863341I$	$4.00112 + 12.85700I$	0
$u = 1.065690 + 0.366918I$ $a = -1.120320 + 0.685903I$ $b = -0.938404 - 0.798931I$	$3.10610 + 2.82928I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.065690 - 0.366918I$ $a = -1.120320 - 0.685903I$ $b = -0.938404 + 0.798931I$	$3.10610 - 2.82928I$	0
$u = 0.826927 + 0.279525I$ $a = 0.51622 + 1.59722I$ $b = -0.22930 + 2.40332I$	$3.53976 + 8.18292I$	0
$u = 0.826927 - 0.279525I$ $a = 0.51622 - 1.59722I$ $b = -0.22930 - 2.40332I$	$3.53976 - 8.18292I$	0
$u = -0.424218 + 1.049990I$ $a = 0.113537 + 0.393271I$ $b = 0.690952 + 0.630816I$	$-3.97298 + 1.45301I$	0
$u = -0.424218 - 1.049990I$ $a = 0.113537 - 0.393271I$ $b = 0.690952 - 0.630816I$	$-3.97298 - 1.45301I$	0
$u = 0.851786$ $a = -3.75611$ $b = -0.269450$	-0.410389	0
$u = 1.062380 + 0.455149I$ $a = 1.41470 - 0.98400I$ $b = 1.51030 + 0.79163I$	$10.42620 + 3.06381I$	0
$u = 1.062380 - 0.455149I$ $a = 1.41470 + 0.98400I$ $b = 1.51030 - 0.79163I$	$10.42620 - 3.06381I$	0
$u = 1.131830 + 0.267629I$ $a = 1.033760 - 0.530042I$ $b = 0.487134 + 0.483951I$	$1.76196 + 1.04851I$	0
$u = 1.131830 - 0.267629I$ $a = 1.033760 + 0.530042I$ $b = 0.487134 - 0.483951I$	$1.76196 - 1.04851I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.334083 + 1.131750I$ $a = -0.109028 - 0.451487I$ $b = 0.901936 - 0.734964I$	$-2.79092 - 8.26077I$	0
$u = 0.334083 - 1.131750I$ $a = -0.109028 + 0.451487I$ $b = 0.901936 + 0.734964I$	$-2.79092 + 8.26077I$	0
$u = -0.762042 + 0.292320I$ $a = -2.35692 - 0.21609I$ $b = -1.37735 + 0.37759I$	$2.18942 - 0.22647I$	0
$u = -0.762042 - 0.292320I$ $a = -2.35692 + 0.21609I$ $b = -1.37735 - 0.37759I$	$2.18942 + 0.22647I$	0
$u = -0.608932 + 0.538700I$ $a = 0.449845 + 0.286768I$ $b = 0.261800 + 1.016030I$	$-3.80544 - 1.47323I$	0
$u = -0.608932 - 0.538700I$ $a = 0.449845 - 0.286768I$ $b = 0.261800 - 1.016030I$	$-3.80544 + 1.47323I$	0
$u = 1.143600 + 0.376238I$ $a = 0.273466 - 1.191650I$ $b = 0.927929 - 0.091326I$	$8.36637 + 0.11927I$	0
$u = 1.143600 - 0.376238I$ $a = 0.273466 + 1.191650I$ $b = 0.927929 + 0.091326I$	$8.36637 - 0.11927I$	0
$u = 1.139400 + 0.398073I$ $a = -0.390173 + 0.667856I$ $b = -0.729204 - 0.149396I$	$2.78580 + 1.00430I$	0
$u = 1.139400 - 0.398073I$ $a = -0.390173 - 0.667856I$ $b = -0.729204 + 0.149396I$	$2.78580 - 1.00430I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.002540+1.220210I$ $a=\ \ 0.197241+0.383474I$ $b=-0.440573+0.317848I$	$-1.93173+0.03663I$	0
$u=-0.002540-1.220210I$ $a=\ \ 0.197241-0.383474I$ $b=-0.440573-0.317848I$	$-1.93173-0.03663I$	0
$u=-1.214360+0.136317I$ $a=-1.204420-0.050221I$ $b=-1.122410+0.673110I$	$4.97319-1.06275I$	0
$u=-1.214360-0.136317I$ $a=-1.204420+0.050221I$ $b=-1.122410-0.673110I$	$4.97319+1.06275I$	0
$u=-1.207700+0.257376I$ $a=\ \ 1.57680+0.43641I$ $b=\ \ 1.46350-0.50185I$	$12.51590-4.02680I$	0
$u=-1.207700-0.257376I$ $a=\ \ 1.57680-0.43641I$ $b=\ \ 1.46350+0.50185I$	$12.51590+4.02680I$	0
$u=-0.757731+0.975271I$ $a=-0.361195-0.577809I$ $b=-0.942922-0.388512I$	$-0.52065-2.57273I$	0
$u=-0.757731-0.975271I$ $a=-0.361195+0.577809I$ $b=-0.942922+0.388512I$	$-0.52065+2.57273I$	0
$u=-1.153150+0.473095I$ $a=\ \ 1.51225-0.63978I$ $b=\ \ 0.99334-1.65032I$	$5.69421-7.09203I$	0
$u=-1.153150-0.473095I$ $a=\ \ 1.51225+0.63978I$ $b=\ \ 0.99334+1.65032I$	$5.69421+7.09203I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.165049+0.733946I$ $a=\ \ 0.636658-0.216868I$ $b=-0.604158-0.995471I$	$-0.90642+2.57878I$	0
$u=-0.165049-0.733946I$ $a=\ \ 0.636658+0.216868I$ $b=-0.604158+0.995471I$	$-0.90642-2.57878I$	0
$u=-0.160724+0.722073I$ $a=-0.683291+0.496358I$ $b=\ \ 0.89885+1.13433I$	$4.64169+3.45865I$	0
$u=-0.160724-0.722073I$ $a=-0.683291-0.496358I$ $b=\ \ 0.89885-1.13433I$	$4.64169-3.45865I$	0
$u=-1.160620+0.499905I$ $a=\ \ 2.17246-0.11710I$ $b=\ \ 1.71400-1.41071I$	$7.52291-8.04572I$	0
$u=-1.160620-0.499905I$ $a=\ \ 2.17246+0.11710I$ $b=\ \ 1.71400+1.41071I$	$7.52291+8.04572I$	0
$u=-0.618910+0.393493I$ $a=-0.547880-0.185869I$ $b=\ \ 0.31273+1.54182I$	$2.61970+6.09240I$	0
$u=-0.618910-0.393493I$ $a=-0.547880+0.185869I$ $b=\ \ 0.31273-1.54182I$	$2.61970-6.09240I$	0
$u=-1.166780+0.501329I$ $a=-1.84073+0.17891I$ $b=-1.40773+1.35918I$	$2.00330-7.20728I$	0
$u=-1.166780-0.501329I$ $a=-1.84073-0.17891I$ $b=-1.40773-1.35918I$	$2.00330+7.20728I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.579212+0.439699I$ $a=\ \ 0.0389490+0.0109292I$ $b=-0.275486-1.347110I$	$-4.04146+2.82999I$	0
$u=-0.579212-0.439699I$ $a=\ \ 0.0389490-0.0109292I$ $b=-0.275486+1.347110I$	$-4.04146-2.82999I$	0
$u=\ \ 0.454290+1.197280I$ $a=-0.047155-0.383391I$ $b=\ \ 0.174568-0.238990I$	$1.73556+5.22677I$	0
$u=\ \ 0.454290-1.197280I$ $a=-0.047155+0.383391I$ $b=\ \ 0.174568+0.238990I$	$1.73556-5.22677I$	0
$u=-1.106620+0.697966I$ $a=-1.272150-0.497172I$ $b=-1.37278+0.44356I$	$0.77664-3.65523I$	0
$u=-1.106620-0.697966I$ $a=-1.272150+0.497172I$ $b=-1.37278-0.44356I$	$0.77664+3.65523I$	0
$u=-0.184238+0.660636I$ $a=-1.234280-0.029458I$ $b=\ \ 0.080549+1.243700I$	$2.89142+2.74667I$	0
$u=-0.184238-0.660636I$ $a=-1.234280+0.029458I$ $b=\ \ 0.080549-1.243700I$	$2.89142-2.74667I$	0
$u=\ \ 1.248630+0.410313I$ $a=\ \ 1.81681+0.26127I$ $b=\ \ 1.71039+0.89846I$	$8.74578+9.62632I$	0
$u=\ \ 1.248630-0.410313I$ $a=\ \ 1.81681-0.26127I$ $b=\ \ 1.71039-0.89846I$	$8.74578-9.62632I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.247277 + 0.633247I$ $a = -0.731723 - 0.129482I$ $b = 1.101850 - 0.140895I$	$8.19994 + 1.08329I$	0
$u = 0.247277 - 0.633247I$ $a = -0.731723 + 0.129482I$ $b = 1.101850 + 0.140895I$	$8.19994 - 1.08329I$	0
$u = 0.495483 + 1.229530I$ $a = 0.040797 + 0.456616I$ $b = -0.829436 + 0.437930I$	$-2.35885 - 1.74213I$	0
$u = 0.495483 - 1.229530I$ $a = 0.040797 - 0.456616I$ $b = -0.829436 - 0.437930I$	$-2.35885 + 1.74213I$	0
$u = -1.263980 + 0.418103I$ $a = -0.616231 - 0.073037I$ $b = -0.520940 + 0.857049I$	$2.85639 - 5.09763I$	0
$u = -1.263980 - 0.418103I$ $a = -0.616231 + 0.073037I$ $b = -0.520940 - 0.857049I$	$2.85639 + 5.09763I$	0
$u = -1.250780 + 0.468648I$ $a = 1.169820 + 0.380734I$ $b = 0.958896 - 0.807384I$	$4.33761 - 8.97687I$	0
$u = -1.250780 - 0.468648I$ $a = 1.169820 - 0.380734I$ $b = 0.958896 + 0.807384I$	$4.33761 + 8.97687I$	0
$u = -1.263460 + 0.467491I$ $a = -1.28082 - 0.69208I$ $b = -1.082550 + 0.659477I$	$11.2089 - 11.5392I$	0
$u = -1.263460 - 0.467491I$ $a = -1.28082 + 0.69208I$ $b = -1.082550 - 0.659477I$	$11.2089 + 11.5392I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.301980 + 0.416420I$ $a = -1.37864 - 0.31823I$ $b = -1.31422 - 0.88798I$	$2.78087 + 5.23361I$	0
$u = 1.301980 - 0.416420I$ $a = -1.37864 + 0.31823I$ $b = -1.31422 + 0.88798I$	$2.78087 - 5.23361I$	0
$u = -1.363650 + 0.100827I$ $a = 0.670290 + 0.317401I$ $b = 0.734461 - 0.356613I$	$3.96173 + 4.05665I$	0
$u = -1.363650 - 0.100827I$ $a = 0.670290 - 0.317401I$ $b = 0.734461 + 0.356613I$	$3.96173 - 4.05665I$	0
$u = 1.292170 + 0.453405I$ $a = 1.034400 - 0.211210I$ $b = 1.046260 + 0.321641I$	$4.40043 + 0.78284I$	0
$u = 1.292170 - 0.453405I$ $a = 1.034400 + 0.211210I$ $b = 1.046260 - 0.321641I$	$4.40043 - 0.78284I$	0
$u = 1.270920 + 0.530603I$ $a = 0.670704 + 0.204878I$ $b = 0.632836 + 0.658580I$	$4.96571 + 1.04544I$	0
$u = 1.270920 - 0.530603I$ $a = 0.670704 - 0.204878I$ $b = 0.632836 - 0.658580I$	$4.96571 - 1.04544I$	0
$u = -1.221500 + 0.637678I$ $a = 1.43015 + 0.16913I$ $b = 1.199570 - 0.746823I$	$-1.34230 - 7.53852I$	0
$u = -1.221500 - 0.637678I$ $a = 1.43015 - 0.16913I$ $b = 1.199570 + 0.746823I$	$-1.34230 + 7.53852I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.295750 + 0.478442I$ $a = -1.242710 + 0.523835I$ $b = -1.342920 - 0.035543I$	$11.16140 - 1.63302I$	0
$u = 1.295750 - 0.478442I$ $a = -1.242710 - 0.523835I$ $b = -1.342920 + 0.035543I$	$11.16140 + 1.63302I$	0
$u = 1.091060 + 0.856454I$ $a = 0.699732 - 0.657656I$ $b = 1.320280 + 0.281323I$	$8.96985 + 3.39151I$	0
$u = 1.091060 - 0.856454I$ $a = 0.699732 + 0.657656I$ $b = 1.320280 - 0.281323I$	$8.96985 - 3.39151I$	0
$u = -1.271290 + 0.585758I$ $a = -1.55950 - 0.05726I$ $b = -1.14697 + 0.89527I$	$3.66647 - 10.69060I$	0
$u = -1.271290 - 0.585758I$ $a = -1.55950 + 0.05726I$ $b = -1.14697 - 0.89527I$	$3.66647 + 10.69060I$	0
$u = 0.596675$ $a = 1.29990$ $b = -0.151005$	0.960214	12.1040
$u = 1.40358$ $a = -0.789670$ $b = -0.409768$	6.37719	0
$u = -1.310880 + 0.529363I$ $a = 0.124992 + 0.509342I$ $b = 0.407436 - 0.385012I$	$7.86090 - 0.17576I$	0
$u = -1.310880 - 0.529363I$ $a = 0.124992 - 0.509342I$ $b = 0.407436 + 0.385012I$	$7.86090 + 0.17576I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.26413 + 0.63476I$ $a = -1.67538 + 0.14923I$ $b = -1.53315 - 1.08858I$	$7.0828 + 18.9878I$	0
$u = 1.26413 - 0.63476I$ $a = -1.67538 - 0.14923I$ $b = -1.53315 + 1.08858I$	$7.0828 - 18.9878I$	0
$u = -1.41712 + 0.18334I$ $a = -0.634223 - 0.649667I$ $b = -0.795785 + 0.041164I$	$10.20150 + 8.35372I$	0
$u = -1.41712 - 0.18334I$ $a = -0.634223 + 0.649667I$ $b = -0.795785 - 0.041164I$	$10.20150 - 8.35372I$	0
$u = 1.27043 + 0.65452I$ $a = 1.49080 - 0.11585I$ $b = 1.41062 + 1.02135I$	$0.2204 + 14.6096I$	0
$u = 1.27043 - 0.65452I$ $a = 1.49080 + 0.11585I$ $b = 1.41062 - 1.02135I$	$0.2204 - 14.6096I$	0
$u = 1.27864 + 0.70102I$ $a = -1.208700 + 0.161368I$ $b = -1.27372 - 0.85163I$	$0.37614 + 8.59734I$	0
$u = 1.27864 - 0.70102I$ $a = -1.208700 - 0.161368I$ $b = -1.27372 + 0.85163I$	$0.37614 - 8.59734I$	0
$u = 0.029771 + 0.507702I$ $a = 0.671586 + 1.144350I$ $b = 0.126745 - 0.473632I$	$-1.11630 + 1.52270I$	$1.18980 - 2.31352I$
$u = 0.029771 - 0.507702I$ $a = 0.671586 - 1.144350I$ $b = 0.126745 + 0.473632I$	$-1.11630 - 1.52270I$	$1.18980 + 2.31352I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.350523$ $a=-3.58473$ $b=-0.957057$	2.23684	3.39660
$u=\ 0.236337+0.249555I$ $a=\ 1.75487-0.03350I$ $b=-0.491297+0.021002I$	$0.993613+0.164887I$	$10.82423-1.70559I$
$u=\ 0.236337-0.249555I$ $a=\ 1.75487+0.03350I$ $b=-0.491297-0.021002I$	$0.993613-0.164887I$	$10.82423+1.70559I$

II.

$\boldsymbol{I_2^u = \langle 3.05\times 10^8 u^{28} + 6.81\times 10^8 u^{27} + \cdots + 8.16\times 10^6 b - 6.32\times 10^8,\ -6.84\times 10^8 u^{28} - 1.76\times 10^9 u^{27} + \cdots + 8.16\times 10^6 a + 9.20\times 10^8,\ u^{29} + 3u^{28} + \cdots - 6u - 1\rangle}$

(i) Arc colorings

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

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_{11} = \begin{pmatrix} 83.8684u^{28} + 216.287u^{27} + \cdots - 497.321u - 112.783 \\ -37.3878u^{28} - 83.5093u^{27} + \cdots + 330.729u + 77.4258 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -46.4331u^{28} - 192.020u^{27} + \cdots - 146.427u + 22.2000 \\ -u^{28} - 2u^{27} + \cdots + 4u^2 + 6u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -66.0044u^{28} - 312.627u^{27} + \cdots - 972.677u - 158.350 \\ 82.0569u^{28} + 210.175u^{27} + \cdots - 571.915u - 140.742 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 121.256u^{28} + 299.796u^{27} + \cdots - 828.050u - 190.209 \\ -37.3878u^{28} - 83.5093u^{27} + \cdots + 330.729u + 77.4258 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -111.255u^{28} - 338.272u^{27} + \cdots + 102.611u + 60.5428 \\ 20.6517u^{28} + 36.8993u^{27} + \cdots - 15.5793u + 15.8707 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 247.584u^{28} + 891.030u^{27} + \cdots + 933.099u + 61.2577 \\ -48.0924u^{28} - 114.763u^{27} + \cdots + 273.695u + 57.6469 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 136.556u^{28} + 344.460u^{27} + \cdots - 889.243u - 207.914 \\ -48.1687u^{28} - 112.581u^{27} + \cdots + 399.808u + 93.8954 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 274.977u^{28} + 979.089u^{27} + \cdots + 1282.30u + 153.066 \\ 82.4271u^{28} + 200.922u^{27} + \cdots - 565.471u - 127.236 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{170879671}{263213}u^{28} - \frac{600734719}{263213}u^{27} + \cdots - \frac{510229301}{263213}u - \frac{3545687}{263213}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{29} - 8u^{28} + \cdots + 4u - 1$
c_2	$u^{29} - 3u^{28} + \cdots - 6u + 1$
c_3	$u^{29} - 2u^{28} + \cdots + 2u + 1$
c_4	$u^{29} + u^{27} + \cdots - 6u + 1$
c_5	$u^{29} - 2u^{28} + \cdots + 2u + 1$
c_6	$u^{29} + 3u^{28} + \cdots - 6u - 1$
c_7, c_8	$u^{29} - 16u^{27} + \cdots - 14u - 1$
c_9	$u^{29} - 2u^{28} + \cdots - 13u^2 - 1$
c_{10}	$u^{29} + u^{28} + \cdots - 2u + 1$
c_{11}	$u^{29} + 2u^{28} + \cdots + 2u - 1$
c_{12}	$u^{29} - 16u^{27} + \cdots - 14u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{29} - 22y^{28} + \cdots - 6y - 1$
c_2, c_6	$y^{29} - 11y^{28} + \cdots + 18y - 1$
c_3	$y^{29} - 28y^{28} + \cdots + 28y - 1$
c_4	$y^{29} + 2y^{28} + \cdots + 16y - 1$
c_5, c_{11}	$y^{29} - 8y^{28} + \cdots + 14y - 1$
c_7, c_8, c_{12}	$y^{29} - 32y^{28} + \cdots + 144y - 1$
c_9	$y^{29} - 10y^{28} + \cdots - 26y - 1$
c_{10}	$y^{29} - 7y^{28} + \cdots + 114y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.947984 + 0.464808I$ $a = 1.21494 - 1.35471I$ $b = 1.76203 + 0.24852I$	$10.67020 + 1.92750I$	$17.1981 + 1.8686I$
$u = 0.947984 - 0.464808I$ $a = 1.21494 + 1.35471I$ $b = 1.76203 - 0.24852I$	$10.67020 - 1.92750I$	$17.1981 - 1.8686I$
$u = -0.856404 + 0.310789I$ $a = -2.27764 - 0.96633I$ $b = -1.91659 - 0.80677I$	$-1.81807 - 1.41123I$	$2.63164 + 5.52228I$
$u = -0.856404 - 0.310789I$ $a = -2.27764 + 0.96633I$ $b = -1.91659 + 0.80677I$	$-1.81807 + 1.41123I$	$2.63164 - 5.52228I$
$u = 0.910911$ $a = -6.13829$ $b = -0.104906$	4.73799	-88.1800
$u = 0.864622$ $a = -2.21373$ $b = -1.21267$	2.91821	16.5150
$u = 1.086180 + 0.387173I$ $a = -0.834309 + 0.573212I$ $b = -0.939837 - 0.354209I$	$3.11372 + 1.61285I$	$12.47483 - 3.64163I$
$u = 1.086180 - 0.387173I$ $a = -0.834309 - 0.573212I$ $b = -0.939837 + 0.354209I$	$3.11372 - 1.61285I$	$12.47483 + 3.64163I$
$u = 0.834532$ $a = 3.51756$ $b = 0.247517$	-0.429533	-158.280
$u = -0.835699 + 0.847022I$ $a = 0.846976 + 0.473870I$ $b = 0.777199 + 0.221035I$	$-1.44927 - 3.01036I$	$2.39124 + 3.89358I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.835699-0.847022I$ $a=\ 0.846976-0.473870I$ $b=\ 0.777199-0.221035I$	$-1.44927+3.01036I$	$2.39124-3.89358I$
$u=\ 0.302104+1.151790I$ $a=\ 0.048335+0.184540I$ $b=\ 0.185653+0.616766I$	$1.40075+5.46153I$	$2.52560-12.47364I$
$u=\ 0.302104-1.151790I$ $a=\ 0.048335-0.184540I$ $b=\ 0.185653-0.616766I$	$1.40075-5.46153I$	$2.52560+12.47364I$
$u=-0.293118+1.165720I$ $a=\ 0.175575-0.384651I$ $b=-0.623205-0.522117I$	$-1.99631+1.14034I$	$9.14640-2.29277I$
$u=-0.293118-1.165720I$ $a=\ 0.175575+0.384651I$ $b=-0.623205+0.522117I$	$-1.99631-1.14034I$	$9.14640+2.29277I$
$u=\ 0.090891+0.747572I$ $a=\ 0.572301-0.965304I$ $b=-0.305856-0.563610I$	$-3.14946+0.01801I$	$2.81633+0.13630I$
$u=\ 0.090891-0.747572I$ $a=\ 0.572301+0.965304I$ $b=-0.305856+0.563610I$	$-3.14946-0.01801I$	$2.81633-0.13630I$
$u=-1.183150+0.401727I$ $a=\ 1.85556-0.64128I$ $b=\ 1.08537-1.48366I$	$6.14461-9.36627I$	$10.75984+8.88349I$
$u=-1.183150-0.401727I$ $a=\ 1.85556+0.64128I$ $b=\ 1.08537+1.48366I$	$6.14461+9.36627I$	$10.75984-8.88349I$
$u=-1.048090+0.787967I$ $a=\ 0.906795+0.753327I$ $b=\ 1.54890-0.35077I$	$8.57632-3.18163I$	$2.25808+0.79850I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.048090-0.787967I$ $a=\ 0.906795-0.753327I$ $b=\ 1.54890+0.35077I$	$8.57632+3.18163I$	$2.25808-0.79850I$
$u=-1.227430+0.512666I$ $a=-1.50670+0.22925I$ $b=-1.21211+1.20909I$	$1.46984-6.79869I$	$4.39700+4.53287I$
$u=-1.227430-0.512666I$ $a=-1.50670-0.22925I$ $b=-1.21211-1.20909I$	$1.46984+6.79869I$	$4.39700-4.53287I$
$u=\ 1.291350+0.321502I$ $a=\ 0.499050-0.580136I$ $b=\ 0.334075+0.176159I$	$5.90109+0.39790I$	$10.97943-2.43938I$
$u=\ 1.291350-0.321502I$ $a=\ 0.499050+0.580136I$ $b=\ 0.334075-0.176159I$	$5.90109-0.39790I$	$10.97943+2.43938I$
$u=-0.593380+0.107119I$ $a=-2.12636+1.33965I$ $b=-0.14566+1.90352I$	$3.41511+6.85182I$	$10.18527-5.74397I$
$u=-0.593380-0.107119I$ $a=-2.12636-1.33965I$ $b=-0.14566-1.90352I$	$3.41511-6.85182I$	$10.18527+5.74397I$
$u=-0.486279+0.096804I$ $a=\ 2.04271+1.94786I$ $b=\ 0.48506+1.47290I$	$-2.99318-3.91422I$	$3.70790+5.71015I$
$u=-0.486279-0.096804I$ $a=\ 2.04271-1.94786I$ $b=\ 0.48506-1.47290I$	$-2.99318+3.91422I$	$3.70790-5.71015I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{29}-8u^{28}+\cdots+4u-1)(u^{133}-5u^{132}+\cdots-161632u-14048)$
c_2	$(u^{29}-3u^{28}+\cdots-6u+1)(u^{133}-35u^{131}+\cdots-192u+761)$
c_3	$(u^{29}-2u^{28}+\cdots+2u+1)(u^{133}-u^{132}+\cdots-4726716u-515789)$
c_4	$(u^{29}+u^{27}+\cdots-6u+1)(u^{133}+3u^{132}+\cdots+41074u+6061)$
c_5	$(u^{29}-2u^{28}+\cdots+2u+1)(u^{133}-u^{132}+\cdots-45568u-71168)$
c_6	$(u^{29}+3u^{28}+\cdots-6u-1)(u^{133}-35u^{131}+\cdots-192u+761)$
c_7, c_8	$(u^{29}-16u^{27}+\cdots-14u-1)(u^{133}+u^{132}+\cdots-20u-1)$
c_9	$(u^{29}-2u^{28}+\cdots-13u^2-1)(u^{133}-u^{132}+\cdots-546u-43)$
c_{10}	$(u^{29}+u^{28}+\cdots-2u+1)(u^{133}-2u^{132}+\cdots-540770u+77627)$
c_{11}	$(u^{29}+2u^{28}+\cdots+2u-1)(u^{133}-u^{132}+\cdots-45568u-71168)$
c_{12}	$(u^{29}-16u^{27}+\cdots-14u+1)(u^{133}+u^{132}+\cdots-20u-1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{29} - 22y^{28} + \cdots - 6y - 1)$ $\cdot (y^{133} + 11y^{132} + \cdots + 71281468928y - 197346304)$
c_2, c_6	$(y^{29} - 11y^{28} + \cdots + 18y - 1)$ $\cdot (y^{133} - 70y^{132} + \cdots + 16482074y - 579121)$
c_3	$(y^{29} - 28y^{28} + \cdots + 28y - 1)$ $\cdot (y^{133} + 9y^{132} + \cdots + 782897585812y - 266038292521)$
c_4	$(y^{29} + 2y^{28} + \cdots + 16y - 1)$ $\cdot (y^{133} - 13y^{132} + \cdots - 508705604y - 36735721)$
c_5, c_{11}	$(y^{29} - 8y^{28} + \cdots + 14y - 1)$ $\cdot (y^{133} + 49y^{132} + \cdots - 137462939648y - 5064884224)$
c_7, c_8, c_{12}	$(y^{29} - 32y^{28} + \cdots + 144y - 1)(y^{133} - 135y^{132} + \cdots + 164y - 1)$
c_9	$(y^{29} - 10y^{28} + \cdots - 26y - 1)(y^{133} - 17y^{132} + \cdots + 624486y - 1849)$
c_{10}	$(y^{29} - 7y^{28} + \cdots + 114y - 1)$ $\cdot (y^{133} - 34y^{132} + \cdots + 514331922226y - 6025951129)$