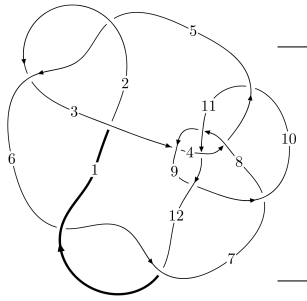
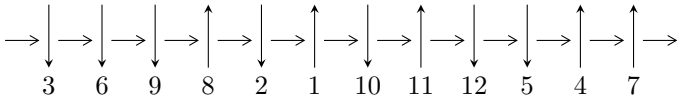
$12a_{0358}$ $(K12a_{0358})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -3.48000 \times 10^{182} u^{67} + 2.10373 \times 10^{182} u^{66} + \cdots + 2.76730 \times 10^{181} b - 5.41435 \times 10^{182},$$
$$- 2.95579 \times 10^{182} u^{67} + 4.27734 \times 10^{182} u^{66} + \cdots + 2.76730 \times 10^{181} a - 3.31608 \times 10^{183},$$
$$u^{68} + 19u^{64} + \cdots - 7u + 1 \rangle$$

$$I_2^u = \langle 1.53296 \times 10^{479} u^{85} + 3.33392 \times 10^{478} u^{84} + \cdots + 2.77033 \times 10^{479} b + 4.69150 \times 10^{478},$$
$$1.19862 \times 10^{480} u^{85} + 1.80990 \times 10^{479} u^{84} + \cdots + 2.77033 \times 10^{479} a + 4.42171 \times 10^{479},\ u^{86} - 4u^{84} + \cdots + 43u$$

$$I_3^u = \langle u^2 + b,\ u^{24} + u^{23} + \cdots + a + 6,\ u^{25} - 4u^{23} + \cdots + u - 1 \rangle$$

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

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 181 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. $\boldsymbol{I_1^u = \langle -3.48 \times 10^{182} u^{67} + 2.10 \times 10^{182} u^{66} + \cdots + 2.77 \times 10^{181} b - 5.41 \times 10^{182},\ -2.96 \times 10^{182} u^{67} + 4.28 \times 10^{182} u^{66} + \cdots + 2.77 \times 10^{181} a - 3.32 \times 10^{183},\ u^{68} + 19 u^{64} + \cdots - 7u + 1 \rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 10.6811u^{67} - 15.4567u^{66} + \cdots - 497.371u + 119.831 \\ 12.5754u^{67} - 7.60209u^{66} + \cdots - 175.533u + 19.5654 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 17.7268u^{67} - 20.5532u^{66} + \cdots - 554.027u + 123.940 \\ 16.3036u^{67} - 10.0984u^{66} + \cdots - 218.254u + 24.6619 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 29.9768u^{67} - 19.8927u^{66} + \cdots - 442.656u + 71.3591 \\ -3.63379u^{67} - 1.04843u^{66} + \cdots + 25.3732u + 9.21156 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 32.7837u^{67} - 10.4113u^{66} + \cdots - 206.024u - 32.1867 \\ -12.5754u^{67} + 7.60209u^{66} + \cdots + 175.533u - 19.5654 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 9.42361u^{67} - 10.6348u^{66} + \cdots - 194.629u + 53.6323 \\ -13.7322u^{67} + 4.68970u^{66} + \cdots + 164.160u - 7.09202 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 23.2565u^{67} - 23.0588u^{66} + \cdots - 672.905u + 139.396 \\ 12.5754u^{67} - 7.60209u^{66} + \cdots - 175.533u + 19.5654 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 15.3311u^{67} - 11.3111u^{66} + \cdots - 106.397u + 4.70936 \\ -11.6073u^{67} + 5.60830u^{66} + \cdots + 231.455u - 30.3761 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 15.8016u^{67} - 18.6094u^{66} + \cdots - 268.617u + 59.5037 \\ 15.4207u^{67} - 9.11330u^{66} + \cdots - 110.867u + 3.78552 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -20.4648u^{67} + 7.34855u^{66} + \cdots - 44.9005u + 53.2777 \\ -1.24532u^{67} + 3.69828u^{66} + \cdots - 32.5923u - 1.47535 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 116.467u^{67} - 60.5514u^{66} + \cdots - 1629.96u + 139.411$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{68}+37u^{67}+\cdots+89u+16$
c_2, c_5	$u^{68}+5u^{67}+\cdots+33u+4$
c_3, c_{10}	$u^{68}+19u^{64}+\cdots-7u+1$
c_4, c_{11}	$u^{68}-u^{67}+\cdots+36u^2+1$
c_6, c_{12}	$u^{68}+15u^{67}+\cdots+233u+4$
c_7, c_9	$u^{68}+10u^{67}+\cdots-27u+1$
c_8	$u^{68}+38u^{67}+\cdots+17u+2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{68} - 9y^{67} + \cdots + 2287y + 256$
c_2, c_5	$y^{68} - 37y^{67} + \cdots - 89y + 16$
c_3, c_{10}	$y^{68} + 38y^{66} + \cdots - 91y + 1$
c_4, c_{11}	$y^{68} + 29y^{67} + \cdots + 72y + 1$
c_6, c_{12}	$y^{68} + 55y^{67} + \cdots - 4473y + 16$
c_7, c_9	$y^{68} - 52y^{67} + \cdots - 83y + 1$
c_8	$y^{68} + 68y^{66} + \cdots - 69y + 4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.347227 + 0.946466I$ $a = 0.447675 + 0.190413I$ $b = 0.419351 - 0.657918I$	$-3.24328 - 6.62876I$	0
$u = 0.347227 - 0.946466I$ $a = 0.447675 - 0.190413I$ $b = 0.419351 + 0.657918I$	$-3.24328 + 6.62876I$	0
$u = 0.852783 + 0.504203I$ $a = 0.161261 + 0.635469I$ $b = -1.09501 - 1.03917I$	$-1.63277 - 6.08911I$	$0. + 10.34292I$
$u = 0.852783 - 0.504203I$ $a = 0.161261 - 0.635469I$ $b = -1.09501 + 1.03917I$	$-1.63277 + 6.08911I$	$0. - 10.34292I$
$u = 0.445396 + 0.853666I$ $a = 0.461499 + 0.277653I$ $b = 0.135076 - 0.753502I$	$-3.70567 + 1.63808I$	$-5.70574 + 0.I$
$u = 0.445396 - 0.853666I$ $a = 0.461499 - 0.277653I$ $b = 0.135076 + 0.753502I$	$-3.70567 - 1.63808I$	$-5.70574 + 0.I$
$u = 0.522673 + 0.800825I$ $a = 0.919151 + 0.337383I$ $b = -0.662024 + 0.293325I$	$-2.09202 + 1.65586I$	$-7.45578 - 5.24528I$
$u = 0.522673 - 0.800825I$ $a = 0.919151 - 0.337383I$ $b = -0.662024 - 0.293325I$	$-2.09202 - 1.65586I$	$-7.45578 + 5.24528I$
$u = -1.010070 + 0.356545I$ $a = -0.031339 - 0.635729I$ $b = -1.56324 + 1.02397I$	$-9.15785 + 1.85685I$	0
$u = -1.010070 - 0.356545I$ $a = -0.031339 + 0.635729I$ $b = -1.56324 - 1.02397I$	$-9.15785 - 1.85685I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.318933+0.868215I$ $a=\ 0.499987-0.196987I$ $b=\ 0.296188+0.533663I$	$-0.24152+2.17299I$	$0.-2.58289I$
$u=-0.318933-0.868215I$ $a=\ 0.499987+0.196987I$ $b=\ 0.296188-0.533663I$	$-0.24152-2.17299I$	$0.+2.58289I$
$u=\ 0.997809+0.406411I$ $a=\ 0.007684+0.619132I$ $b=-1.47572-1.09452I$	$-5.18332-5.99152I$	0
$u=\ 0.997809-0.406411I$ $a=\ 0.007684-0.619132I$ $b=-1.47572+1.09452I$	$-5.18332+5.99152I$	0
$u=-0.734968+0.519286I$ $a=\ 0.283079-0.671507I$ $b=-0.902944+0.866741I$	$-0.76164+1.96482I$	$-4.70279-3.62702I$
$u=-0.734968-0.519286I$ $a=\ 0.283079+0.671507I$ $b=-0.902944-0.866741I$	$-0.76164-1.96482I$	$-4.70279+3.62702I$
$u=-0.069981+0.884380I$ $a=\ 0.528598-0.042048I$ $b=\ 0.463855+0.116792I$	$1.87694+2.02607I$	$3.77017-4.09968I$
$u=-0.069981-0.884380I$ $a=\ 0.528598+0.042048I$ $b=\ 0.463855-0.116792I$	$1.87694-2.02607I$	$3.77017+4.09968I$
$u=-1.032800+0.421146I$ $a=-0.000941-0.590587I$ $b=-1.51730+1.16883I$	$-8.40560+10.79120I$	0
$u=-1.032800-0.421146I$ $a=-0.000941+0.590587I$ $b=-1.51730-1.16883I$	$-8.40560-10.79120I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.876151+0.739552I$ $a=0.008031+1.362540I$ $b=0.771843-0.443584I$	$-1.06216+2.38167I$	0
$u=-0.876151-0.739552I$ $a=0.008031-1.362540I$ $b=0.771843+0.443584I$	$-1.06216-2.38167I$	0
$u=0.739570+0.231829I$ $a=0.020493+0.988688I$ $b=-1.307970-0.516340I$	$-4.93397-1.67406I$	$-14.6463+4.2905I$
$u=0.739570-0.231829I$ $a=0.020493-0.988688I$ $b=-1.307970+0.516340I$	$-4.93397+1.67406I$	$-14.6463-4.2905I$
$u=0.910659+0.868218I$ $a=-0.085085-1.235530I$ $b=0.891855+0.577721I$	$0.48086-7.22153I$	0
$u=0.910659-0.868218I$ $a=-0.085085+1.235530I$ $b=0.891855-0.577721I$	$0.48086+7.22153I$	0
$u=-0.521019+0.514497I$ $a=0.622392-0.714575I$ $b=-0.685802+0.457243I$	$-1.09222+1.31330I$	$-3.92618-4.40458I$
$u=-0.521019-0.514497I$ $a=0.622392+0.714575I$ $b=-0.685802-0.457243I$	$-1.09222-1.31330I$	$-3.92618+4.40458I$
$u=-1.234770+0.419503I$ $a=0.397826+1.038940I$ $b=0.934290+0.149605I$	$-6.52084+2.86951I$	0
$u=-1.234770-0.419503I$ $a=0.397826-1.038940I$ $b=0.934290-0.149605I$	$-6.52084-2.86951I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.283940 + 0.347168I$ $a = 0.437743 - 0.982289I$ $b = 0.923063 - 0.261317I$	$-10.03860 + 2.02386I$	0
$u = 1.283940 - 0.347168I$ $a = 0.437743 + 0.982289I$ $b = 0.923063 + 0.261317I$	$-10.03860 - 2.02386I$	0
$u = 0.134094 + 1.332070I$ $a = 0.828702 + 0.051317I$ $b = -1.271790 + 0.131476I$	$-1.93522 - 1.56682I$	0
$u = 0.134094 - 1.332070I$ $a = 0.828702 - 0.051317I$ $b = -1.271790 - 0.131476I$	$-1.93522 + 1.56682I$	0
$u = -0.630096 + 0.186750I$ $a = 1.175720 - 0.469552I$ $b = 0.048819 - 0.153786I$	$-1.77089 + 0.39180I$	$-7.19717 - 1.64300I$
$u = -0.630096 - 0.186750I$ $a = 1.175720 + 0.469552I$ $b = 0.048819 + 0.153786I$	$-1.77089 - 0.39180I$	$-7.19717 + 1.64300I$
$u = -0.621936 + 0.161590I$ $a = -0.81823 + 1.22057I$ $b = -1.42873 + 0.03945I$	$-8.62125 - 1.48539I$	$-12.37549 + 3.25891I$
$u = -0.621936 - 0.161590I$ $a = -0.81823 - 1.22057I$ $b = -1.42873 - 0.03945I$	$-8.62125 + 1.48539I$	$-12.37549 - 3.25891I$
$u = 1.299580 + 0.492132I$ $a = 0.331541 - 1.003160I$ $b = 1.059830 - 0.128516I$	$-10.55020 - 7.37369I$	0
$u = 1.299580 - 0.492132I$ $a = 0.331541 + 1.003160I$ $b = 1.059830 + 0.128516I$	$-10.55020 + 7.37369I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.539259+0.262076I$ $a=-1.19117+1.19261I$ $b=-1.346730+0.181830I$	$-7.67223+7.31607I$	$-10.44733-3.84736I$
$u=-0.539259-0.262076I$ $a=-1.19117-1.19261I$ $b=-1.346730-0.181830I$	$-7.67223-7.31607I$	$-10.44733+3.84736I$
$u=-0.590569+0.075856I$ $a=\ 2.12977+1.15018I$ $b=\ 0.197115+0.007397I$	$0.86890+6.10828I$	$-3.53214+10.54641I$
$u=-0.590569-0.075856I$ $a=\ 2.12977-1.15018I$ $b=\ 0.197115-0.007397I$	$0.86890-6.10828I$	$-3.53214-10.54641I$
$u=\ 0.571423+0.027243I$ $a=\ 2.24431-0.59306I$ $b=\ 0.166108-0.013277I$	$2.64938-1.14980I$	$8.50880-9.28452I$
$u=\ 0.571423-0.027243I$ $a=\ 2.24431+0.59306I$ $b=\ 0.166108+0.013277I$	$2.64938+1.14980I$	$8.50880+9.28452I$
$u=\ 0.95336+1.06674I$ $a=-0.171760-1.072920I$ $b=\ 1.076150+0.805127I$	$0.95534-9.37922I$	0
$u=\ 0.95336-1.06674I$ $a=-0.171760+1.072920I$ $b=\ 1.076150-0.805127I$	$0.95534+9.37922I$	0
$u=\ 0.55544+1.32541I$ $a=\ 0.771871+0.188431I$ $b=-1.172570+0.565100I$	$-4.11848-0.16698I$	0
$u=\ 0.55544-1.32541I$ $a=\ 0.771871-0.188431I$ $b=-1.172570-0.565100I$	$-4.11848+0.16698I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.523872 + 0.189484I$ $a = -1.06890 - 1.40700I$ $b = -1.318000 - 0.097191I$	$-4.58749 - 2.48434I$	$-7.90113 + 0.62149I$
$u = \quad 0.523872 - 0.189484I$ $a = -1.06890 + 1.40700I$ $b = -1.318000 + 0.097191I$	$-4.58749 + 2.48434I$	$-7.90113 - 0.62149I$
$u = -1.11339 + 0.93127I$ $a = -0.013162 + 1.062630I$ $b = \quad 1.187060 - 0.517921I$	$-4.71725 + 8.77037I$	0
$u = -1.11339 - 0.93127I$ $a = -0.013162 - 1.062630I$ $b = \quad 1.187060 + 0.517921I$	$-4.71725 - 8.77037I$	0
$u = -0.65891 + 1.32082I$ $a = \quad 0.752740 - 0.214794I$ $b = -1.131810 - 0.678205I$	$-7.63638 - 4.19234I$	0
$u = -0.65891 - 1.32082I$ $a = \quad 0.752740 + 0.214794I$ $b = -1.131810 + 0.678205I$	$-7.63638 + 4.19234I$	0
$u = -0.98698 + 1.15189I$ $a = -0.184401 + 1.007490I$ $b = \quad 1.18008 - 0.89645I$	$-0.0347 + 14.1725I$	0
$u = -0.98698 - 1.15189I$ $a = -0.184401 - 1.007490I$ $b = \quad 1.18008 + 0.89645I$	$-0.0347 - 14.1725I$	0
$u = -0.55908 + 1.42353I$ $a = \quad 0.746297 - 0.172067I$ $b = -1.280620 - 0.599655I$	$-7.54925 + 4.60676I$	0
$u = -0.55908 - 1.42353I$ $a = \quad 0.746297 + 0.172067I$ $b = -1.280620 + 0.599655I$	$-7.54925 - 4.60676I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.12939+1.25688I$ $a=-0.145720+0.908937I$ $b=\ \ 1.45287-0.93543I$	$-4.3166+14.8677I$	0
$u=-1.12939-1.25688I$ $a=-0.145720-0.908937I$ $b=\ \ 1.45287+0.93543I$	$-4.3166-14.8677I$	0
$u=\ \ 1.17541+1.23208I$ $a=-0.118660-0.905590I$ $b=\ \ 1.49689+0.86547I$	$-8.58923-10.69630I$	0
$u=\ \ 1.17541-1.23208I$ $a=-0.118660+0.905590I$ $b=\ \ 1.49689-0.86547I$	$-8.58923+10.69630I$	0
$u=\ \ 1.13734+1.29280I$ $a=-0.152283-0.891120I$ $b=\ \ 1.49173+0.97919I$	$-7.5213-19.8847I$	0
$u=\ \ 1.13734-1.29280I$ $a=-0.152283+0.891120I$ $b=\ \ 1.49173-0.97919I$	$-7.5213+19.8847I$	0
$u=\ \ 0.177741+0.009631I$ $a=-0.79472-5.50260I$ $b=-1.031910+0.001970I$	$-1.55668-2.08082I$	$-7.56227+3.79767I$
$u=\ \ 0.177741-0.009631I$ $a=-0.79472+5.50260I$ $b=-1.031910-0.001970I$	$-1.55668+2.08082I$	$-7.56227-3.79767I$

II. $I_2^u = \langle 1.53\times 10^{479}u^{85} + 3.33\times 10^{478}u^{84} + \cdots + 2.77\times 10^{479}b + 4.69\times 10^{478},\ 1.20\times 10^{480}u^{85} + 1.81\times 10^{479}u^{84} + \cdots + 2.77\times 10^{479}a + 4.42\times 10^{479},\ u^{86} - 4u^{84} + \cdots + 43u - 1\rangle$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -4.32663u^{85} - 0.653316u^{84} + \cdots + 556.356u - 1.59609 \\ -0.553349u^{85} - 0.120344u^{84} + \cdots + 75.1551u - 0.169348 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -4.80547u^{85} - 0.752449u^{84} + \cdots + 607.745u - 1.11213 \\ -0.557459u^{85} - 0.114226u^{84} + \cdots + 78.9390u - 0.268481 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -11.1333u^{85} - 1.42770u^{84} + \cdots + 3468.92u - 106.428 \\ -0.525406u^{85} - 0.0659176u^{84} + \cdots + 192.044u - 6.75608 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -9.65501u^{85} - 0.976864u^{84} + \cdots + 3175.46u - 88.9304 \\ -0.619253u^{85} - 0.0501898u^{84} + \cdots + 238.716u - 7.36739 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -6.98211u^{85} - 0.505651u^{84} + \cdots + 2960.01u - 79.2322 \\ -0.617382u^{85} - 0.00458364u^{84} + \cdots + 370.774u - 11.3112 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -4.87998u^{85} - 0.773659u^{84} + \cdots + 631.511u - 1.76544 \\ -0.553349u^{85} - 0.120344u^{84} + \cdots + 75.1551u - 0.169348 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -12.4281u^{85} - 1.03198u^{84} + \cdots + 4584.43u - 119.627 \\ -1.16547u^{85} - 0.0768050u^{84} + \cdots + 500.975u - 14.5900 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -3.82340u^{85} - 0.213777u^{84} + \cdots + 2094.49u - 81.9384 \\ -0.0561820u^{85} - 0.0158373u^{84} + \cdots + 50.6542u - 4.28487 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -7.09996u^{85} - 0.422945u^{84} + \cdots + 3531.19u - 122.826 \\ -0.161542u^{85} - 0.0134656u^{84} + \cdots + 195.859u - 9.11331 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6.65648u^{85} + 0.894392u^{84} + \cdots - 1822.38u + 50.8744$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{43}+24u^{42}+\cdots-10u^2+1)^2$
c_2, c_5	$(u^{43}-2u^{42}+\cdots-4u+1)^2$
c_3, c_{10}	$u^{86}-4u^{84}+\cdots+43u-1$
c_4, c_{11}	$u^{86}-2u^{85}+\cdots+15u+1$
c_6, c_{12}	$(u^{43}-9u^{42}+\cdots+101u-8)^2$
c_7, c_9	$u^{86}-3u^{85}+\cdots+2682u-617$
c_8	$(u^{43}-21u^{42}+\cdots-u+2)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{43} - 8y^{42} + \cdots + 20y - 1)^2$
c_2, c_5	$(y^{43} - 24y^{42} + \cdots + 10y^2 - 1)^2$
c_3, c_{10}	$y^{86} - 8y^{85} + \cdots - 171y + 1$
c_4, c_{11}	$y^{86} - 20y^{85} + \cdots - 99y + 1$
c_6, c_{12}	$(y^{43} + 37y^{42} + \cdots + 137y - 64)^2$
c_7, c_9	$y^{86} + 13y^{85} + \cdots + 8586034y + 380689$
c_8	$(y^{43} - 3y^{42} + \cdots + 85y - 4)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.135043 + 0.991220I$ $a = 0.416179 + 1.100660I$ $b = 0.38130 - 2.18383I$	$-4.08710 - 9.94581I$	0
$u = 0.135043 - 0.991220I$ $a = 0.416179 - 1.100660I$ $b = 0.38130 + 2.18383I$	$-4.08710 + 9.94581I$	0
$u = -0.062972 + 0.992351I$ $a = 1.039030 - 0.233873I$ $b = -0.076390 + 0.215336I$	$1.81471 + 2.10825I$	0
$u = -0.062972 - 0.992351I$ $a = 1.039030 + 0.233873I$ $b = -0.076390 - 0.215336I$	$1.81471 - 2.10825I$	0
$u = 0.070769 + 0.991612I$ $a = -0.0509758 + 0.1010660I$ $b = 1.007600 + 0.009789I$	$1.81471 + 2.10825I$	0
$u = 0.070769 - 0.991612I$ $a = -0.0509758 - 0.1010660I$ $b = 1.007600 - 0.009789I$	$1.81471 - 2.10825I$	0
$u = -0.192950 + 0.956508I$ $a = 0.380551 - 1.131970I$ $b = 0.30167 + 2.05591I$	$-0.83965 + 5.42468I$	0
$u = -0.192950 - 0.956508I$ $a = 0.380551 + 1.131970I$ $b = 0.30167 - 2.05591I$	$-0.83965 - 5.42468I$	0
$u = -0.402623 + 0.969005I$ $a = 0.717071 - 1.002420I$ $b = -0.505618 + 0.811517I$	$0.21932 + 2.67784I$	0
$u = -0.402623 - 0.969005I$ $a = 0.717071 + 1.002420I$ $b = -0.505618 - 0.811517I$	$0.21932 - 2.67784I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.231442 + 1.026170I$ $a = 0.350606 + 1.090360I$ $b = 0.14722 - 2.15577I$	$-4.43944 - 1.27982I$	0
$u = 0.231442 - 1.026170I$ $a = 0.350606 - 1.090360I$ $b = 0.14722 + 2.15577I$	$-4.43944 + 1.27982I$	0
$u = -0.511836 + 0.926148I$ $a = 0.232897 - 1.096110I$ $b = -0.26829 + 1.47381I$	$-0.09484 + 3.33108I$	0
$u = -0.511836 - 0.926148I$ $a = 0.232897 + 1.096110I$ $b = -0.26829 - 1.47381I$	$-0.09484 - 3.33108I$	0
$u = -0.817244 + 0.713826I$ $a = -0.15969 - 1.56906I$ $b = -1.62652 + 0.85236I$	$-9.54476 + 0.88455I$	0
$u = -0.817244 - 0.713826I$ $a = -0.15969 + 1.56906I$ $b = -1.62652 - 0.85236I$	$-9.54476 - 0.88455I$	0
$u = 0.600103 + 0.913382I$ $a = 0.300017 + 1.291380I$ $b = -0.94980 - 1.18385I$	$-1.60025 - 6.31849I$	0
$u = 0.600103 - 0.913382I$ $a = 0.300017 - 1.291380I$ $b = -0.94980 + 1.18385I$	$-1.60025 + 6.31849I$	0
$u = 0.794728 + 0.769843I$ $a = -0.07149 + 1.50763I$ $b = -1.55945 - 0.96649I$	$-5.60933 - 5.25697I$	0
$u = 0.794728 - 0.769843I$ $a = -0.07149 - 1.50763I$ $b = -1.55945 + 0.96649I$	$-5.60933 + 5.25697I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.622875 + 0.615661I$ $a = -0.542486 - 0.027321I$ $b = 0.849730 + 0.175988I$	$0.21932 + 2.67784I$	0
$u = 0.622875 - 0.615661I$ $a = -0.542486 + 0.027321I$ $b = 0.849730 - 0.175988I$	$0.21932 - 2.67784I$	0
$u = 0.924419 + 0.645626I$ $a = 0.558379 - 0.730899I$ $b = 0.545575 + 0.421347I$	$2.84470 - 1.06861I$	0
$u = 0.924419 - 0.645626I$ $a = 0.558379 + 0.730899I$ $b = 0.545575 - 0.421347I$	$2.84470 + 1.06861I$	0
$u = -0.834100 + 0.797541I$ $a = -0.10490 - 1.43736I$ $b = -1.64021 + 1.04136I$	$-9.01796 + 10.05490I$	0
$u = -0.834100 - 0.797541I$ $a = -0.10490 + 1.43736I$ $b = -1.64021 - 1.04136I$	$-9.01796 - 10.05490I$	0
$u = 1.168210 + 0.411787I$ $a = -0.202746 + 0.682337I$ $b = 0.010873 - 0.421161I$	$-0.09484 - 3.33108I$	0
$u = 1.168210 - 0.411787I$ $a = -0.202746 - 0.682337I$ $b = 0.010873 + 0.421161I$	$-0.09484 + 3.33108I$	0
$u = -0.509587 + 0.554791I$ $a = -2.21789 - 0.79244I$ $b = -0.940496 + 0.955675I$	$-6.03592 + 11.45270I$	0
$u = -0.509587 - 0.554791I$ $a = -2.21789 + 0.79244I$ $b = -0.940496 - 0.955675I$	$-6.03592 - 11.45270I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.373409 + 0.616370I$ $a = 1.26963 + 2.25666I$ $b = -0.959002 - 0.382909I$	$-3.61686 - 0.63537I$	0
$u = 0.373409 - 0.616370I$ $a = 1.26963 - 2.25666I$ $b = -0.959002 + 0.382909I$	$-3.61686 + 0.63537I$	0
$u = -0.133892 + 0.679193I$ $a = 0.44850 - 1.41706I$ $b = 0.67922 + 1.63183I$	$1.65498 + 5.98531I$	0
$u = -0.133892 - 0.679193I$ $a = 0.44850 + 1.41706I$ $b = 0.67922 - 1.63183I$	$1.65498 - 5.98531I$	0
$u = 0.460697 + 0.511670I$ $a = -2.41736 + 0.94491I$ $b = -0.900396 - 0.872655I$	$-2.79536 - 6.42700I$	0
$u = 0.460697 - 0.511670I$ $a = -2.41736 - 0.94491I$ $b = -0.900396 + 0.872655I$	$-2.79536 + 6.42700I$	0
$u = -0.501571 + 0.428164I$ $a = -2.72044 - 0.65370I$ $b = -0.998295 + 0.784978I$	$-7.07086 + 2.20292I$	0
$u = -0.501571 - 0.428164I$ $a = -2.72044 + 0.65370I$ $b = -0.998295 - 0.784978I$	$-7.07086 - 2.20292I$	0
$u = -0.564012 + 1.220770I$ $a = 0.398464 - 0.730231I$ $b = -0.337136 + 1.080000I$	$0.40386 + 2.56671I$	0
$u = -0.564012 - 1.220770I$ $a = 0.398464 + 0.730231I$ $b = -0.337136 - 1.080000I$	$0.40386 - 2.56671I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.379739 + 1.299490I$ $a = 0.499973 + 0.619835I$ $b = -0.164409 - 1.079840I$	$-2.70911 - 6.65745I$	0
$u = 0.379739 - 1.299490I$ $a = 0.499973 - 0.619835I$ $b = -0.164409 + 1.079840I$	$-2.70911 + 6.65745I$	0
$u = -1.06348 + 0.95048I$ $a = 0.263162 + 0.637500I$ $b = 0.759215 - 0.537136I$	$1.69172 + 5.85120I$	0
$u = -1.06348 - 0.95048I$ $a = 0.263162 - 0.637500I$ $b = 0.759215 + 0.537136I$	$1.69172 - 5.85120I$	0
$u = 0.095879 + 0.532540I$ $a = -1.52630 + 2.58201I$ $b = -0.434307 - 0.714196I$	$1.69172 - 5.85120I$	$5.42459 + 10.04778I$
$u = 0.095879 - 0.532540I$ $a = -1.52630 - 2.58201I$ $b = -0.434307 + 0.714196I$	$1.69172 + 5.85120I$	$5.42459 - 10.04778I$
$u = -1.40165 + 0.43208I$ $a = -0.297012 + 0.353990I$ $b = 0.508820 + 0.088690I$	$-1.60025 - 6.31849I$	0
$u = -1.40165 - 0.43208I$ $a = -0.297012 - 0.353990I$ $b = 0.508820 - 0.088690I$	$-1.60025 + 6.31849I$	0
$u = 0.55750 + 1.37908I$ $a = 0.381593 + 0.630067I$ $b = -0.316770 - 1.187940I$	$-2.72052 + 1.60205I$	0
$u = 0.55750 - 1.37908I$ $a = 0.381593 - 0.630067I$ $b = -0.316770 + 1.187940I$	$-2.72052 - 1.60205I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.133925 + 0.467599I$ $a = 0.39940 + 1.87720I$ $b = 0.84493 - 1.32438I$	$1.91538 - 2.26464I$	$4.89318 + 0.67008I$
$u = 0.133925 - 0.467599I$ $a = 0.39940 - 1.87720I$ $b = 0.84493 + 1.32438I$	$1.91538 + 2.26464I$	$4.89318 - 0.67008I$
$u = -0.92753 + 1.21480I$ $a = 0.189492 - 0.682342I$ $b = -0.494096 + 0.990526I$	$1.91538 + 2.26464I$	0
$u = -0.92753 - 1.21480I$ $a = 0.189492 + 0.682342I$ $b = -0.494096 - 0.990526I$	$1.91538 - 2.26464I$	0
$u = 0.121668 + 0.429385I$ $a = 0.05064 - 3.39826I$ $b = -0.224802 + 0.506766I$	$2.84470 + 1.06861I$	$9.63275 - 2.61396I$
$u = 0.121668 - 0.429385I$ $a = 0.05064 + 3.39826I$ $b = -0.224802 - 0.506766I$	$2.84470 - 1.06861I$	$9.63275 + 2.61396I$
$u = 1.13027 + 1.15953I$ $a = 0.112670 + 0.646613I$ $b = -0.566638 - 0.833106I$	$1.65498 - 5.98531I$	0
$u = 1.13027 - 1.15953I$ $a = 0.112670 - 0.646613I$ $b = -0.566638 + 0.833106I$	$1.65498 + 5.98531I$	0
$u = 0.000182 + 0.330558I$ $a = -0.48028 - 1.77090I$ $b = 1.272210 - 0.422522I$	$-2.70911 - 6.65745I$	$-2.04943 + 5.57280I$
$u = 0.000182 - 0.330558I$ $a = -0.48028 + 1.77090I$ $b = 1.272210 + 0.422522I$	$-2.70911 + 6.65745I$	$-2.04943 - 5.57280I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.47176 + 1.00374I$ $a = 0.017821 + 0.579744I$ $b = -0.638721 - 0.478541I$	$-0.83965 - 5.42468I$	0
$u = 1.47176 - 1.00374I$ $a = 0.017821 - 0.579744I$ $b = -0.638721 + 0.478541I$	$-0.83965 + 5.42468I$	0
$u = 0.197861 + 0.056822I$ $a = -3.34853 - 0.62754I$ $b = 1.029320 + 0.674923I$	$0.40386 + 2.56671I$	$1.20501 - 1.18142I$
$u = 0.197861 - 0.056822I$ $a = -3.34853 + 0.62754I$ $b = 1.029320 - 0.674923I$	$0.40386 - 2.56671I$	$1.20501 + 1.18142I$
$u = -1.07223 + 1.45621I$ $a = -0.189500 + 0.114604I$ $b = 0.926955 + 0.055841I$	$-3.61686 - 0.63537I$	0
$u = -1.07223 - 1.45621I$ $a = -0.189500 - 0.114604I$ $b = 0.926955 - 0.055841I$	$-3.61686 + 0.63537I$	0
$u = -1.81467$ $a = 0.368861$ $b = 0.825751$	-2.71132	0
$u = -1.57653 + 0.93033I$ $a = -0.006956 - 0.558834I$ $b = -0.634985 + 0.347651I$	$-4.43944 + 1.27982I$	0
$u = -1.57653 - 0.93033I$ $a = -0.006956 + 0.558834I$ $b = -0.634985 - 0.347651I$	$-4.43944 - 1.27982I$	0
$u = 0.137632$ $a = -15.0764$ $b = -0.674497$	-2.71132	16.9810

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.53268+1.08552I$ $a=\ 0.031741-0.558293I$ $b=-0.743279+0.474657I$	$-4.08710+9.94581I$	0
$u=-1.53268-1.08552I$ $a=\ 0.031741+0.558293I$ $b=-0.743279-0.474657I$	$-4.08710-9.94581I$	0
$u=-1.36309+1.34142I$ $a=\ 0.061627+0.465781I$ $b=\ 1.132220-0.511902I$	$-2.79536+6.42700I$	0
$u=-1.36309-1.34142I$ $a=\ 0.061627-0.465781I$ $b=\ 1.132220+0.511902I$	$-2.79536-6.42700I$	0
$u=\ 0.0533184+0.0393166I$ $a=\ 6.49463-9.15183I$ $b=\ 1.30600-0.75689I$	$-2.72052+1.60205I$	$-1.85850-1.88019I$
$u=\ 0.0533184-0.0393166I$ $a=\ 6.49463+9.15183I$ $b=\ 1.30600+0.75689I$	$-2.72052-1.60205I$	$-1.85850+1.88019I$
$u=\ 1.34276+1.41745I$ $a=\ 0.031233-0.470711I$ $b=\ 1.186230+0.552440I$	$-6.03592-11.45270I$	0
$u=\ 1.34276-1.41745I$ $a=\ 0.031233+0.470711I$ $b=\ 1.186230-0.552440I$	$-6.03592+11.45270I$	0
$u=\ 1.47823+1.34675I$ $a=\ 0.060773-0.420842I$ $b=\ 1.166350+0.424527I$	$-7.07086-2.20292I$	0
$u=\ 1.47823-1.34675I$ $a=\ 0.060773+0.420842I$ $b=\ 1.166350-0.424527I$	$-7.07086+2.20292I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.85370+0.87211I$ $a=-0.178199+0.294392I$ $b=\ \ 0.763170+0.426147I$	$-5.60933-5.25697I$	0
$u=-1.85370-0.87211I$ $a=-0.178199-0.294392I$ $b=\ \ 0.763170-0.426147I$	$-5.60933+5.25697I$	0
$u=\ \ 1.93492+0.83629I$ $a=-0.170878-0.304155I$ $b=\ \ 0.742493-0.491497I$	$-9.01796+10.05490I$	0
$u=\ \ 1.93492-0.83629I$ $a=-0.170878+0.304155I$ $b=\ \ 0.742493+0.491497I$	$-9.01796-10.05490I$	0
$u=\ \ 1.88050+0.97547I$ $a=-0.166675-0.284634I$ $b=\ \ 0.842891-0.432708I$	$-9.54476+0.88455I$	0
$u=\ \ 1.88050-0.97547I$ $a=-0.166675+0.284634I$ $b=\ \ 0.842891+0.432708I$	$-9.54476-0.88455I$	0

III. $I_3^u = \langle u^2 + b,\ u^{24} + u^{23} + \cdots + a + 6,\ u^{25} - 4u^{23} + \cdots + u - 1 \rangle$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^{24} - u^{23} + \cdots + u - 6 \\ -u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^{24} - u^{23} + \cdots + u - 5 \\ -u^4 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -6u^{24} - u^{23} + \cdots - 12u - 5 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 5u^{24} + 6u^{23} + \cdots - 7u + 18 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -5u^{24} - u^{23} + \cdots - 8u - 4 \\ u^5 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^{24} - u^{23} + \cdots + u - 6 \\ -u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^{24} + u^{23} + \cdots - u + 5 \\ u^6 - u^4 + 2u^2 - 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^{24} + 2u^{23} + \cdots - 6u + 1 \\ u^{16} - 2u^{14} + 4u^{12} - 5u^{10} + 6u^8 - 3u^6 + 2u^4 + u^2 - 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 2u^{24} + 3u^{23} + \cdots - 4u + 3 \\ -u^{24} - u^{23} + \cdots + u - 3 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -30u^{24} - 32u^{23} + 110u^{22} + 89u^{21} - 323u^{20} - 209u^{19} + 673u^{18} + 354u^{17} - 1188u^{16} - 539u^{15} + 1680u^{14} + 627u^{13} - 2058u^{12} - 676u^{11} + 2084u^{10} + 587u^9 - 1801u^8 - 446u^7 + 1261u^6 + 285u^5 - 684u^4 - 120u^3 + 308u^2 + 29u - 80$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{25} - 14u^{24} + \cdots + 4u - 1$
c_2	$u^{25} + 2u^{24} + \cdots - 2u - 1$
c_3, c_{10}	$u^{25} - 4u^{23} + \cdots + u - 1$
c_4, c_{11}	$u^{25} - u^{24} + \cdots + 4u^2 - 1$
c_5	$u^{25} - 2u^{24} + \cdots - 2u + 1$
c_6	$u^{25} - 6u^{24} + \cdots + 18u - 3$
c_7, c_9	$u^{25} - 8u^{24} + \cdots + 11u - 1$
c_8	$u^{25} + 17u^{24} + \cdots + 54u + 3$
c_{12}	$u^{25} + 6u^{24} + \cdots + 18u + 3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{25} - 2y^{24} + \cdots + 8y - 1$
c_2, c_5	$y^{25} - 14y^{24} + \cdots + 4y - 1$
c_3, c_{10}	$y^{25} - 8y^{24} + \cdots + 11y - 1$
c_4, c_{11}	$y^{25} - 11y^{24} + \cdots + 8y - 1$
c_6, c_{12}	$y^{25} + 18y^{24} + \cdots + 120y - 9$
c_7, c_9	$y^{25} + 12y^{24} + \cdots - y - 1$
c_8	$y^{25} + 3y^{24} + \cdots + 318y - 9$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.610826+0.722009I$ $a=\ \ 0.185244-1.102610I$ $b=\ \ 0.148188+0.882044I$	$0.89982+4.35497I$	$-0.26746-7.95573I$
$u=-0.610826-0.722009I$ $a=\ \ 0.185244+1.102610I$ $b=\ \ 0.148188-0.882044I$	$0.89982-4.35497I$	$-0.26746+7.95573I$
$u=\ \ 0.866749+0.605406I$ $a=-0.307936+0.839972I$ $b=-0.384738-1.049470I$	$-0.02193-6.28225I$	$-1.99076+10.73714I$
$u=\ \ 0.866749-0.605406I$ $a=-0.307936-0.839972I$ $b=-0.384738+1.049470I$	$-0.02193+6.28225I$	$-1.99076-10.73714I$
$u=\ \ 0.911045$ $a=-1.20482$ $b=-0.830003$	-3.05968	-13.4490
$u=-0.804413+0.735073I$ $a=-0.075710-0.838757I$ $b=-0.106747+1.182610I$	$0.86120+2.90391I$	$0.46167-3.52720I$
$u=-0.804413-0.735073I$ $a=-0.075710+0.838757I$ $b=-0.106747-1.182610I$	$0.86120-2.90391I$	$0.46167+3.52720I$
$u=-0.698525+0.854520I$ $a=\ \ 0.163267-0.804524I$ $b=\ \ 0.242267+1.193810I$	$-0.18146+3.74043I$	$-1.96230-6.61607I$
$u=-0.698525-0.854520I$ $a=\ \ 0.163267+0.804524I$ $b=\ \ 0.242267-1.193810I$	$-0.18146-3.74043I$	$-1.96230+6.61607I$
$u=\ \ 0.662716+0.900431I$ $a=\ \ 0.237826+0.763852I$ $b=\ \ 0.371585-1.193460I$	$-3.34121-7.94021I$	$-5.65997+10.46423I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.662716 - 0.900431I$ $a = 0.237826 - 0.763852I$ $b = 0.371585 + 1.193460I$	$-3.34121 + 7.94021I$	$-5.65997 - 10.46423I$
$u = 1.088250 + 0.396616I$ $a = -0.570588 + 0.479609I$ $b = -1.026990 - 0.863235I$	$-3.97672 - 5.50405I$	$-3.54701 + 5.25746I$
$u = 1.088250 - 0.396616I$ $a = -0.570588 - 0.479609I$ $b = -1.026990 + 0.863235I$	$-3.97672 + 5.50405I$	$-3.54701 - 5.25746I$
$u = 0.737631 + 0.897881I$ $a = 0.143747 + 0.726497I$ $b = 0.262092 - 1.324610I$	$-3.42891 + 0.36997I$	$-5.20918 + 3.35499I$
$u = 0.737631 - 0.897881I$ $a = 0.143747 - 0.726497I$ $b = 0.262092 + 1.324610I$	$-3.42891 - 0.36997I$	$-5.20918 - 3.35499I$
$u = -1.117030 + 0.341780I$ $a = -0.607367 - 0.410066I$ $b = -1.130930 + 0.763555I$	$-7.99502 + 1.22407I$	$-7.96428 - 1.66756I$
$u = -1.117030 - 0.341780I$ $a = -0.607367 + 0.410066I$ $b = -1.130930 - 0.763555I$	$-7.99502 - 1.22407I$	$-7.96428 + 1.66756I$
$u = 0.581902 + 0.590759I$ $a = 0.02197 + 1.45416I$ $b = 0.010386 - 0.687528I$	$-0.304045 - 0.962885I$	$-2.10301 - 0.25414I$
$u = 0.581902 - 0.590759I$ $a = 0.02197 - 1.45416I$ $b = 0.010386 + 0.687528I$	$-0.304045 + 0.962885I$	$-2.10301 + 0.25414I$
$u = -1.126470 + 0.425200I$ $a = -0.517741 - 0.455797I$ $b = -1.08813 + 0.95795I$	$-7.30177 + 10.34400I$	$-6.20234 - 8.16065I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.126470-0.425200I$ $a=-0.517741+0.455797I$ $b=-1.08813-0.95795I$	$-7.30177-10.34400I$	$-6.20234+8.16065I$
$u=-0.702171+0.105625I$ $a=-1.89556-0.58349I$ $b=-0.481887+0.148334I$	$2.44855+1.33246I$	$-13.6501-10.0463I$
$u=-0.702171-0.105625I$ $a=-1.89556+0.58349I$ $b=-0.481887-0.148334I$	$2.44855-1.33246I$	$-13.6501+10.0463I$
$u=\ \ 0.666656+0.210572I$ $a=-1.67474+1.17523I$ $b=-0.400090-0.280758I$	$0.84226-6.35848I$	$-6.6808+20.7487I$
$u=\ \ 0.666656-0.210572I$ $a=-1.67474-1.17523I$ $b=-0.400090+0.280758I$	$0.84226+6.35848I$	$-6.6808-20.7487I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -9$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.500000 + 0.866025I$ $a = \quad 0.500000 + 0.866025I$ $b = -1.00000$	-3.28987	-9.00000
$u = \quad 0.500000 - 0.866025I$ $a = \quad 0.500000 - 0.866025I$ $b = -1.00000$	-3.28987	-9.00000

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^2)(u^{25}-14u^{24}+\cdots+4u-1)(u^{43}+24u^{42}+\cdots-10u^2+1)^2$ $\cdot(u^{68}+37u^{67}+\cdots+89u+16)$
c_2	$((u-1)^2)(u^{25}+2u^{24}+\cdots-2u-1)(u^{43}-2u^{42}+\cdots-4u+1)^2$ $\cdot(u^{68}+5u^{67}+\cdots+33u+4)$
c_3, c_{10}	$(u^2-u+1)(u^{25}-4u^{23}+\cdots+u-1)(u^{68}+19u^{64}+\cdots-7u+1)$ $\cdot(u^{86}-4u^{84}+\cdots+43u-1)$
c_4, c_{11}	$(u^2-u+1)(u^{25}-u^{24}+\cdots+4u^2-1)(u^{68}-u^{67}+\cdots+36u^2+1)$ $\cdot(u^{86}-2u^{85}+\cdots+15u+1)$
c_5	$((u+1)^2)(u^{25}-2u^{24}+\cdots-2u+1)(u^{43}-2u^{42}+\cdots-4u+1)^2$ $\cdot(u^{68}+5u^{67}+\cdots+33u+4)$
c_6	$u^2(u^{25}-6u^{24}+\cdots+18u-3)(u^{43}-9u^{42}+\cdots+101u-8)^2$ $\cdot(u^{68}+15u^{67}+\cdots+233u+4)$
c_7, c_9	$((u-1)^2)(u^{25}-8u^{24}+\cdots+11u-1)(u^{68}+10u^{67}+\cdots-27u+1)$ $\cdot(u^{86}-3u^{85}+\cdots+2682u-617)$
c_8	$u^2(u^{25}+17u^{24}+\cdots+54u+3)(u^{43}-21u^{42}+\cdots-u+2)^2$ $\cdot(u^{68}+38u^{67}+\cdots+17u+2)$
c_{12}	$u^2(u^{25}+6u^{24}+\cdots+18u+3)(u^{43}-9u^{42}+\cdots+101u-8)^2$ $\cdot(u^{68}+15u^{67}+\cdots+233u+4)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^2)(y^{25}-2y^{24}+\cdots+8y-1)(y^{43}-8y^{42}+\cdots+20y-1)^2$ $\cdot(y^{68}-9y^{67}+\cdots+2287y+256)$
c_2, c_5	$((y-1)^2)(y^{25}-14y^{24}+\cdots+4y-1)(y^{43}-24y^{42}+\cdots+10y^2-1)^2$ $\cdot(y^{68}-37y^{67}+\cdots-89y+16)$
c_3, c_{10}	$(y^2+y+1)(y^{25}-8y^{24}+\cdots+11y-1)(y^{68}+38y^{66}+\cdots-91y+1)$ $\cdot(y^{86}-8y^{85}+\cdots-171y+1)$
c_4, c_{11}	$(y^2+y+1)(y^{25}-11y^{24}+\cdots+8y-1)(y^{68}+29y^{67}+\cdots+72y+1)$ $\cdot(y^{86}-20y^{85}+\cdots-99y+1)$
c_6, c_{12}	$y^2(y^{25}+18y^{24}+\cdots+120y-9)(y^{43}+37y^{42}+\cdots+137y-64)^2$ $\cdot(y^{68}+55y^{67}+\cdots-4473y+16)$
c_7, c_9	$((y-1)^2)(y^{25}+12y^{24}+\cdots-y-1)(y^{68}-52y^{67}+\cdots-83y+1)$ $\cdot(y^{86}+13y^{85}+\cdots+8586034y+380689)$
c_8	$y^2(y^{25}+3y^{24}+\cdots+318y-9)(y^{43}-3y^{42}+\cdots+85y-4)^2$ $\cdot(y^{68}+68y^{66}+\cdots-69y+4)$