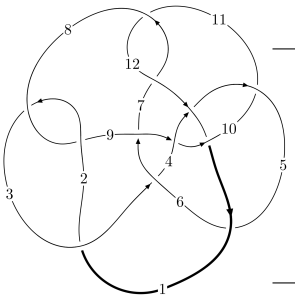
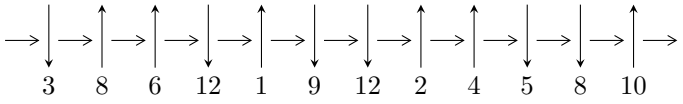
$12n_{0635}$ $(K12n_{0635})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 7.72790 \times 10^{299} u^{118} - 1.72629 \times 10^{299} u^{117} + \cdots + 2.99648 \times 10^{300} b - 1.21626 \times 10^{302}, \\ & - 5.20063 \times 10^{302} u^{118} - 4.63209 \times 10^{302} u^{117} + \cdots + 6.32257 \times 10^{302} a - 1.43930 \times 10^{305}, \\ & u^{119} + u^{118} + \cdots - 366u + 211 \rangle \\ I_2^u = \langle & -144442009874 u^{40} - 40660630315 u^{39} + \cdots + 55254454982 b + 95137731796, \\ & - 121324231307 u^{40} - 226756643017 u^{39} + \cdots + 55254454982 a - 930709060133, \\ & u^{41} + 11 u^{39} + \cdots + 3u + 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 160 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. $\boldsymbol{I_1^u = \langle 7.73 \times 10^{299} u^{118} - 1.73 \times 10^{299} u^{117} + \cdots + 3.00 \times 10^{300} b - 1.22 \times 10^{302},\ -5.20 \times 10^{302} u^{118} - 4.63 \times 10^{302} u^{117} + \cdots + 6.32 \times 10^{302} a - 1.44 \times 10^{305},\ u^{119} + u^{118} + \cdots - 366u + 211 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.822551u^{118} + 0.732629u^{117} + \cdots - 379.214u + 227.644 \\ -0.257900u^{118} + 0.0576106u^{117} + \cdots - 222.436u + 40.5897 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.401146u^{118} + 0.0348358u^{117} + \cdots - 399.134u + 76.2959 \\ -0.243493u^{118} - 0.192213u^{117} + \cdots + 48.6316u - 49.8415 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.644639u^{118} - 0.157377u^{117} + \cdots - 350.502u + 26.4544 \\ -0.243493u^{118} - 0.192213u^{117} + \cdots + 48.6316u - 49.8415 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.598905u^{118} - 0.744143u^{117} + \cdots + 316.390u - 182.264 \\ 0.0505679u^{118} - 0.0114233u^{117} + \cdots + 37.3488u - 6.10829 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.670832u^{118} - 0.587891u^{117} + \cdots + 246.350u - 149.706 \\ 0.0873593u^{118} + 0.00245992u^{117} + \cdots + 49.1705u - 4.10884 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.534374u^{118} + 0.0140889u^{117} + \cdots - 449.449u + 76.2335 \\ -0.158683u^{118} - 0.273598u^{117} + \cdots + 202.003u - 89.0966 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.890241u^{118} - 0.816127u^{117} + \cdots + 395.180u - 249.260 \\ 0.267839u^{118} + 0.00116646u^{117} + \cdots + 230.932u - 37.2540 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.432322u^{118} - 2.26997u^{117} + \cdots + 2494.32u - 733.077$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{119} + 59u^{118} + \cdots - 926108u - 44521$
c_2, c_8	$u^{119} + u^{118} + \cdots - 366u + 211$
c_3	$u^{119} - 12u^{118} + \cdots - 594u - 503$
c_4	$u^{119} + 3u^{118} + \cdots + 95214u - 3293$
c_5	$u^{119} + u^{118} + \cdots + 5201393u - 364301$
c_6	$u^{119} - 4u^{118} + \cdots - 2916191u - 324667$
c_7, c_{11}	$u^{119} + u^{118} + \cdots - 25u + 1$
c_9	$u^{119} + 2u^{118} + \cdots + 3981u + 337$
c_{10}	$u^{119} - 3u^{117} + \cdots - 14155826u - 953372$
c_{12}	$u^{119} + 6u^{118} + \cdots - 6u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{119} + 19y^{118} + \cdots - 89555795764y - 1982119441$
c_2, c_8	$y^{119} + 59y^{118} + \cdots - 926108y - 44521$
c_3	$y^{119} - 44y^{118} + \cdots - 2126954y - 253009$
c_4	$y^{119} - 11y^{118} + \cdots + 2421268218y - 10843849$
c_5	$y^{119} + y^{118} + \cdots + 3889002396385y - 132715218601$
c_6	$y^{119} - 22y^{118} + \cdots + 24438543848191y - 105408660889$
c_7, c_{11}	$y^{119} - 81y^{118} + \cdots - 153y - 1$
c_9	$y^{119} + 14y^{118} + \cdots - 16141701y - 113569$
c_{10}	$y^{119} - 6y^{118} + \cdots + 61203268140316y - 908918170384$
c_{12}	$y^{119} - 26y^{118} + \cdots + 8y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.138327 + 0.990158I$ $a = -0.286934 - 0.313045I$ $b = 0.052155 + 0.442743I$	$-1.20206 + 2.35927I$	0
$u = 0.138327 - 0.990158I$ $a = -0.286934 + 0.313045I$ $b = 0.052155 - 0.442743I$	$-1.20206 - 2.35927I$	0
$u = -0.739519 + 0.687699I$ $a = -0.788897 - 0.116467I$ $b = -0.402628 + 0.797114I$	$1.71996 + 2.02950I$	0
$u = -0.739519 - 0.687699I$ $a = -0.788897 + 0.116467I$ $b = -0.402628 - 0.797114I$	$1.71996 - 2.02950I$	0
$u = -0.496588 + 0.840506I$ $a = -1.50275 - 0.07440I$ $b = 0.563776 - 0.214209I$	$6.09166 - 2.02663I$	0
$u = -0.496588 - 0.840506I$ $a = -1.50275 + 0.07440I$ $b = 0.563776 + 0.214209I$	$6.09166 + 2.02663I$	0
$u = 0.291882 + 0.991062I$ $a = 2.42800 + 1.33222I$ $b = -1.61394 - 0.21321I$	$-3.66465 - 1.30336I$	0
$u = 0.291882 - 0.991062I$ $a = 2.42800 - 1.33222I$ $b = -1.61394 + 0.21321I$	$-3.66465 + 1.30336I$	0
$u = -0.975681 + 0.408520I$ $a = -0.159640 - 0.390097I$ $b = -1.80212 + 0.55680I$	$-2.47917 + 5.10720I$	0
$u = -0.975681 - 0.408520I$ $a = -0.159640 + 0.390097I$ $b = -1.80212 - 0.55680I$	$-2.47917 - 5.10720I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.279448 + 1.020750I$ $a = 0.387550 - 0.487897I$ $b = -0.645036 - 0.220684I$	$-3.58440 + 3.05326I$	0
$u = 0.279448 - 1.020750I$ $a = 0.387550 + 0.487897I$ $b = -0.645036 + 0.220684I$	$-3.58440 - 3.05326I$	0
$u = -0.387905 + 0.848616I$ $a = 1.46565 + 0.71590I$ $b = -0.208033 + 0.268527I$	$5.46164 - 1.65387I$	0
$u = -0.387905 - 0.848616I$ $a = 1.46565 - 0.71590I$ $b = -0.208033 - 0.268527I$	$5.46164 + 1.65387I$	0
$u = -0.418303 + 0.986388I$ $a = -0.010321 + 0.195398I$ $b = -0.134150 + 0.933427I$	$1.81979 + 0.17648I$	0
$u = -0.418303 - 0.986388I$ $a = -0.010321 - 0.195398I$ $b = -0.134150 - 0.933427I$	$1.81979 - 0.17648I$	0
$u = -1.003850 + 0.388181I$ $a = 0.111883 + 0.228768I$ $b = 1.77448 - 0.55150I$	$-1.29566 + 13.00150I$	0
$u = -1.003850 - 0.388181I$ $a = 0.111883 - 0.228768I$ $b = 1.77448 + 0.55150I$	$-1.29566 - 13.00150I$	0
$u = 0.922762$ $a = 0.0853941$ $b = 1.16229$	1.46894	0
$u = 0.788579 + 0.740267I$ $a = 0.753124 - 0.313220I$ $b = -0.976181 + 0.934246I$	$0.16645 - 1.67645I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.788579 - 0.740267I$ $a = 0.753124 + 0.313220I$ $b = -0.976181 - 0.934246I$	$0.16645 + 1.67645I$	0
$u = -0.496136 + 0.970633I$ $a = -0.854963 + 0.799242I$ $b = 1.000490 - 0.787922I$	$2.31216 - 5.55103I$	0
$u = -0.496136 - 0.970633I$ $a = -0.854963 - 0.799242I$ $b = 1.000490 + 0.787922I$	$2.31216 + 5.55103I$	0
$u = -0.810179 + 0.738473I$ $a = -0.083773 + 0.261289I$ $b = 0.302850 + 0.201126I$	$5.24879 + 1.68195I$	0
$u = -0.810179 - 0.738473I$ $a = -0.083773 - 0.261289I$ $b = 0.302850 - 0.201126I$	$5.24879 - 1.68195I$	0
$u = 0.478133 + 0.988443I$ $a = 2.15726 + 1.87440I$ $b = -1.88840 + 0.42229I$	$-2.13295 + 2.85129I$	0
$u = 0.478133 - 0.988443I$ $a = 2.15726 - 1.87440I$ $b = -1.88840 - 0.42229I$	$-2.13295 - 2.85129I$	0
$u = 0.746227 + 0.505418I$ $a = -0.559951 - 0.280614I$ $b = -1.26175 - 0.66554I$	$0.32046 - 2.65425I$	0
$u = 0.746227 - 0.505418I$ $a = -0.559951 + 0.280614I$ $b = -1.26175 + 0.66554I$	$0.32046 + 2.65425I$	0
$u = -0.714016 + 0.849476I$ $a = 0.006926 + 0.808247I$ $b = 1.048330 - 0.037031I$	$4.62344 - 2.72374I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.714016-0.849476I$ $a=\ \ 0.006926-0.808247I$ $b=\ \ 1.048330+0.037031I$	$4.62344+2.72374I$	0
$u=\ \ 1.062710+0.361334I$ $a=-0.399752-0.192692I$ $b=-1.49057-0.54867I$	$-1.67369-2.69642I$	0
$u=\ \ 1.062710-0.361334I$ $a=-0.399752+0.192692I$ $b=-1.49057+0.54867I$	$-1.67369+2.69642I$	0
$u=-0.296172+1.086400I$ $a=-1.69183+1.15499I$ $b=\ \ 0.892180+0.355930I$	$-7.27793+3.13200I$	0
$u=-0.296172-1.086400I$ $a=-1.69183-1.15499I$ $b=\ \ 0.892180-0.355930I$	$-7.27793-3.13200I$	0
$u=\ \ 0.447749+1.047640I$ $a=-2.55968-1.10443I$ $b=\ \ 1.76621-1.28570I$	$-5.80100+7.39063I$	0
$u=\ \ 0.447749-1.047640I$ $a=-2.55968+1.10443I$ $b=\ \ 1.76621+1.28570I$	$-5.80100-7.39063I$	0
$u=-0.459034+1.044890I$ $a=\ \ 1.56429+1.26948I$ $b=\ \ 0.34577-2.67909I$	$2.48039-7.32028I$	0
$u=-0.459034-1.044890I$ $a=\ \ 1.56429-1.26948I$ $b=\ \ 0.34577+2.67909I$	$2.48039+7.32028I$	0
$u=-0.483725+0.708066I$ $a=-1.92606+0.13905I$ $b=\ \ 0.836749+0.384169I$	$3.20043+1.50937I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.483725-0.708066I$ $a=-1.92606-0.13905I$ $b=\ \ 0.836749-0.384169I$	$3.20043-1.50937I$	0
$u=-0.856731$ $a=-0.524691$ $b=-1.63643$	-2.28823	0
$u=-0.099471+0.832500I$ $a=\ \ 0.496816-1.056410I$ $b=-1.123730+0.765445I$	$-2.95234+2.49175I$	0
$u=-0.099471-0.832500I$ $a=\ \ 0.496816+1.056410I$ $b=-1.123730-0.765445I$	$-2.95234-2.49175I$	0
$u=-0.517837+1.046110I$ $a=-1.51862-0.69786I$ $b=-0.03236+2.32711I$	$2.89267+0.64660I$	0
$u=-0.517837-1.046110I$ $a=-1.51862+0.69786I$ $b=-0.03236-2.32711I$	$2.89267-0.64660I$	0
$u=\ \ 0.465835+1.089250I$ $a=-1.54000-1.70807I$ $b=\ \ 1.92133+0.30785I$	$-5.60425-0.50345I$	0
$u=\ \ 0.465835-1.089250I$ $a=-1.54000+1.70807I$ $b=\ \ 1.92133-0.30785I$	$-5.60425+0.50345I$	0
$u=\ \ 0.432498+0.687899I$ $a=-0.162295+0.305230I$ $b=-1.353910-0.390504I$	$-1.09892+0.98947I$	0
$u=\ \ 0.432498-0.687899I$ $a=-0.162295-0.305230I$ $b=-1.353910+0.390504I$	$-1.09892-0.98947I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.318545+1.148260I$ $a=\ \ 1.75945-1.00275I$ $b=-1.169460-0.343271I$	$-7.28649-3.00967I$	0
$u=-0.318545-1.148260I$ $a=\ \ 1.75945+1.00275I$ $b=-1.169460+0.343271I$	$-7.28649+3.00967I$	0
$u=-0.665480+0.991083I$ $a=\ \ 0.663632-0.077340I$ $b=-0.386670-0.974153I$	$0.78034-7.39471I$	0
$u=-0.665480-0.991083I$ $a=\ \ 0.663632+0.077340I$ $b=-0.386670+0.974153I$	$0.78034+7.39471I$	0
$u=\ \ 0.600770+0.531768I$ $a=-0.510410-0.623358I$ $b=\ \ 0.011107+0.344970I$	$0.114771+1.133900I$	0
$u=\ \ 0.600770-0.531768I$ $a=-0.510410+0.623358I$ $b=\ \ 0.011107-0.344970I$	$0.114771-1.133900I$	0
$u=\ \ 0.709247+0.965823I$ $a=-0.37276+1.59051I$ $b=-0.688136-1.182700I$	$-0.53398+7.32591I$	0
$u=\ \ 0.709247-0.965823I$ $a=-0.37276-1.59051I$ $b=-0.688136+1.182700I$	$-0.53398-7.32591I$	0
$u=\ \ 0.762287+0.241211I$ $a=\ \ 0.57440+1.34529I$ $b=-0.002076-0.504846I$	$3.03967-5.60301I$	$0.+5.55438I$
$u=\ \ 0.762287-0.241211I$ $a=\ \ 0.57440-1.34529I$ $b=-0.002076+0.504846I$	$3.03967+5.60301I$	$0.-5.55438I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.573019 + 1.072380I$ $a = -0.755360 + 0.386094I$ $b = 0.382549 - 0.052592I$	$-1.59421 + 3.66056I$	0
$u = 0.573019 - 1.072380I$ $a = -0.755360 - 0.386094I$ $b = 0.382549 + 0.052592I$	$-1.59421 - 3.66056I$	0
$u = 0.759427 + 0.162887I$ $a = 0.223339 + 0.563571I$ $b = 1.177310 + 0.550276I$	$0.79937 - 3.58749I$	$6.97277 + 6.80076I$
$u = 0.759427 - 0.162887I$ $a = 0.223339 - 0.563571I$ $b = 1.177310 - 0.550276I$	$0.79937 + 3.58749I$	$6.97277 - 6.80076I$
$u = -0.377563 + 0.675853I$ $a = 2.07199 + 0.23800I$ $b = 0.073505 - 0.134839I$	$2.87635 - 3.63043I$	$4.92553 + 9.56207I$
$u = -0.377563 - 0.675853I$ $a = 2.07199 - 0.23800I$ $b = 0.073505 + 0.134839I$	$2.87635 + 3.63043I$	$4.92553 - 9.56207I$
$u = -0.553141 + 1.093970I$ $a = -1.68295 + 1.16746I$ $b = 1.55723 + 0.08891I$	$-5.52129 - 10.35290I$	0
$u = -0.553141 - 1.093970I$ $a = -1.68295 - 1.16746I$ $b = 1.55723 - 0.08891I$	$-5.52129 + 10.35290I$	0
$u = 0.590478 + 1.076160I$ $a = 1.67142 + 1.30633I$ $b = -1.47597 + 0.90883I$	$-1.43290 + 7.74922I$	0
$u = 0.590478 - 1.076160I$ $a = 1.67142 - 1.30633I$ $b = -1.47597 - 0.90883I$	$-1.43290 - 7.74922I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.742077+0.987462I$ $a=\ 0.069782+0.233284I$ $b=\ 0.365621-0.169693I$	$4.48972-7.51330I$	0
$u=-0.742077-0.987462I$ $a=\ 0.069782-0.233284I$ $b=\ 0.365621+0.169693I$	$4.48972+7.51330I$	0
$u=-0.496978+1.132190I$ $a=\ 1.75877-1.18182I$ $b=-1.77208-0.15738I$	$-6.12428-4.94727I$	0
$u=-0.496978-1.132190I$ $a=\ 1.75877+1.18182I$ $b=-1.77208+0.15738I$	$-6.12428+4.94727I$	0
$u=\ 0.279256+1.206360I$ $a=-0.723783+0.618528I$ $b=\ 0.721057+0.197708I$	$-1.38561-2.19285I$	0
$u=\ 0.279256-1.206360I$ $a=-0.723783-0.618528I$ $b=\ 0.721057-0.197708I$	$-1.38561+2.19285I$	0
$u=\ 0.355752+1.186210I$ $a=-1.61878-0.95739I$ $b=\ 1.65648+0.21388I$	$-3.19874+0.12797I$	0
$u=\ 0.355752-1.186210I$ $a=-1.61878+0.95739I$ $b=\ 1.65648-0.21388I$	$-3.19874-0.12797I$	0
$u=-0.734610+0.151583I$ $a=\ 0.143181-0.339367I$ $b=-1.396670+0.114089I$	$-3.32187+0.44404I$	$-1.02888+1.07661I$
$u=-0.734610-0.151583I$ $a=\ 0.143181+0.339367I$ $b=-1.396670-0.114089I$	$-3.32187-0.44404I$	$-1.02888-1.07661I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.646531+0.373993I$ $a=-0.633547+0.402501I$ $b=\ 1.272210-0.217794I$	$-3.44497+5.62860I$	$0.63930-5.04650I$
$u=-0.646531-0.373993I$ $a=-0.633547-0.402501I$ $b=\ 1.272210+0.217794I$	$-3.44497-5.62860I$	$0.63930+5.04650I$
$u=\ 0.278442+0.682046I$ $a=\ 1.97074-0.67525I$ $b=\ 0.91703+1.25412I$	$-4.25778-4.07230I$	$5.38922+7.64539I$
$u=\ 0.278442-0.682046I$ $a=\ 1.97074+0.67525I$ $b=\ 0.91703-1.25412I$	$-4.25778+4.07230I$	$5.38922-7.64539I$
$u=-0.431986+1.188660I$ $a=\ 1.90467-1.01789I$ $b=-1.98435-0.47209I$	$-5.96194-4.35894I$	0
$u=-0.431986-1.188660I$ $a=\ 1.90467+1.01789I$ $b=-1.98435+0.47209I$	$-5.96194+4.35894I$	0
$u=\ 0.999965+0.779570I$ $a=\ 0.119807+0.390665I$ $b=\ 0.701938+0.168142I$	$1.20381+7.07038I$	0
$u=\ 0.999965-0.779570I$ $a=\ 0.119807-0.390665I$ $b=\ 0.701938-0.168142I$	$1.20381-7.07038I$	0
$u=\ 0.549235+1.145670I$ $a=\ 0.903087-0.591506I$ $b=-0.470524+0.061033I$	$0.43501+10.51100I$	0
$u=\ 0.549235-1.145670I$ $a=\ 0.903087+0.591506I$ $b=-0.470524-0.061033I$	$0.43501-10.51100I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.514202 + 1.166920I$ $a = -1.77474 - 0.81946I$ $b = 1.35799 - 0.99070I$	$-2.10553 + 8.31464I$	0
$u = 0.514202 - 1.166920I$ $a = -1.77474 + 0.81946I$ $b = 1.35799 + 0.99070I$	$-2.10553 - 8.31464I$	0
$u = -0.898202 + 0.912485I$ $a = -0.83055 + 1.61811I$ $b = 2.58056 - 0.29119I$	$8.03104 - 3.29649I$	0
$u = -0.898202 - 0.912485I$ $a = -0.83055 - 1.61811I$ $b = 2.58056 + 0.29119I$	$8.03104 + 3.29649I$	0
$u = -0.469554 + 0.528231I$ $a = 3.06157 - 0.46503I$ $b = -0.04131 - 1.99226I$	$4.51736 - 4.80623I$	$3.84214 + 0.I$
$u = -0.469554 - 0.528231I$ $a = 3.06157 + 0.46503I$ $b = -0.04131 + 1.99226I$	$4.51736 + 4.80623I$	$3.84214 + 0.I$
$u = -0.347157 + 0.613481I$ $a = -4.27454 + 0.28412I$ $b = 0.74276 + 2.25657I$	$4.02701 + 3.72908I$	$2.01216 - 9.01288I$
$u = -0.347157 - 0.613481I$ $a = -4.27454 - 0.28412I$ $b = 0.74276 - 2.25657I$	$4.02701 - 3.72908I$	$2.01216 + 9.01288I$
$u = 0.924734 + 0.949976I$ $a = -0.228117 - 0.689922I$ $b = 0.056096 - 0.292394I$	$0.669566 - 0.225276I$	0
$u = 0.924734 - 0.949976I$ $a = -0.228117 + 0.689922I$ $b = 0.056096 + 0.292394I$	$0.669566 + 0.225276I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.668240+1.176870I$ $a=\ \ 1.71510-1.24404I$ $b=-2.12407-0.70620I$	$-4.83612-11.07470I$	0
$u=-0.668240-1.176870I$ $a=\ \ 1.71510+1.24404I$ $b=-2.12407+0.70620I$	$-4.83612+11.07470I$	0
$u=-0.666253+1.196630I$ $a=-1.69121+1.19661I$ $b=\ \ 2.01215+0.74008I$	$-3.7935-19.0385I$	0
$u=-0.666253-1.196630I$ $a=-1.69121-1.19661I$ $b=\ \ 2.01215-0.74008I$	$-3.7935+19.0385I$	0
$u=\ \ 0.520165+1.279600I$ $a=-1.45884-0.69260I$ $b=\ \ 1.52018-0.65498I$	$-2.35447+5.14712I$	0
$u=\ \ 0.520165-1.279600I$ $a=-1.45884+0.69260I$ $b=\ \ 1.52018+0.65498I$	$-2.35447-5.14712I$	0
$u=\ \ 0.664062+1.223270I$ $a=\ \ 1.31321+0.94759I$ $b=-1.51048+0.94889I$	$-4.37657+8.87869I$	0
$u=\ \ 0.664062-1.223270I$ $a=\ \ 1.31321-0.94759I$ $b=-1.51048-0.94889I$	$-4.37657-8.87869I$	0
$u=-0.076345+1.396290I$ $a=\ \ 1.69133-0.30740I$ $b=-1.89384-0.25249I$	$-8.98725+1.61360I$	0
$u=-0.076345-1.396290I$ $a=\ \ 1.69133+0.30740I$ $b=-1.89384+0.25249I$	$-8.98725-1.61360I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.113233+1.396810I$ $a=-1.72884+0.46399I$ $b=\ 1.86429+0.07896I$	$-7.75197+9.27410I$	0
$u=-0.113233-1.396810I$ $a=-1.72884-0.46399I$ $b=\ 1.86429-0.07896I$	$-7.75197-9.27410I$	0
$u=\ 0.496207+0.326893I$ $a=-0.595724-0.843965I$ $b=\ 1.37588-0.43903I$	$-3.36813+4.52330I$	$-2.57588-7.39314I$
$u=\ 0.496207-0.326893I$ $a=-0.595724+0.843965I$ $b=\ 1.37588+0.43903I$	$-3.36813-4.52330I$	$-2.57588+7.39314I$
$u=\ 0.586510$ $a=-0.335309$ $b=\ 0.244845$	1.92513	4.80940
$u=\ 0.366162+0.410778I$ $a=-0.683049-0.572761I$ $b=\ 0.041114+0.353554I$	$0.045091+1.133750I$	$0.66238-5.25472I$
$u=\ 0.366162-0.410778I$ $a=-0.683049+0.572761I$ $b=\ 0.041114-0.353554I$	$0.045091-1.133750I$	$0.66238+5.25472I$
$u=\ 0.20323+1.56886I$ $a=\ 1.42605+0.26447I$ $b=-2.42826-0.10636I$	$-8.37781+1.82504I$	0
$u=\ 0.20323-1.56886I$ $a=\ 1.42605-0.26447I$ $b=-2.42826+0.10636I$	$-8.37781-1.82504I$	0

II. $I_2^u = \langle -1.44\times 10^{11}u^{40} - 4.07\times 10^{10}u^{39} + \cdots + 5.53\times 10^{10}b + 9.51\times 10^{10},\ -1.21\times 10^{11}u^{40} - 2.27\times 10^{11}u^{39} + \cdots + 5.53\times 10^{10}a - 9.31\times 10^{11},\ u^{41} + 11u^{39} + \cdots + 3u + 1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 2.19574u^{40} + 4.10386u^{39} + \cdots + 50.0980u + 16.8441 \\ 2.61412u^{40} + 0.735880u^{39} + \cdots - 5.55037u - 1.72181 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -3.98340u^{40} + 0.707726u^{39} + \cdots - 23.5816u - 3.68457 \\ 0.481141u^{40} + 3.46547u^{39} + \cdots + 20.9829u + 6.27553 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -3.50226u^{40} + 4.17319u^{39} + \cdots - 2.59869u + 2.59096 \\ 0.481141u^{40} + 3.46547u^{39} + \cdots + 20.9829u + 6.27553 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -7.25532u^{40} + 0.518686u^{39} + \cdots - 22.8700u - 2.67551 \\ 2.79724u^{40} + 1.02933u^{39} + \cdots + 17.8055u + 3.09345 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.611517u^{40} + 0.222422u^{39} + \cdots + 25.1385u + 3.56748 \\ 3.14608u^{40} - 0.689440u^{39} + \cdots - 5.90365u - 4.68980 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -2.22904u^{40} + 3.43438u^{39} + \cdots + 1.95932u + 3.60657 \\ -0.240301u^{40} + 3.16860u^{39} + \cdots + 17.9338u + 4.57821 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 5.29089u^{40} + 3.51661u^{39} + \cdots + 59.0550u + 19.2261 \\ 0.519711u^{40} + 1.92846u^{39} + \cdots - 6.88375u - 1.13456 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{478810616922}{27627227491}u^{40} + \frac{53035081567}{55254454982}u^{39} + \cdots + \frac{466506714074}{27627227491}u - \frac{80878950287}{27627227491}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{41} - 22u^{40} + \cdots - 5u + 1$
c_2	$u^{41} + 11u^{39} + \cdots + 3u - 1$
c_3	$u^{41} + 21u^{40} + \cdots + 17u + 1$
c_4	$u^{41} + 10u^{39} + \cdots - u + 1$
c_5	$u^{41} - 3u^{38} + \cdots + 84u - 19$
c_6	$u^{41} - 7u^{40} + \cdots + 734u - 97$
c_7	$u^{41} - 5u^{39} + \cdots + 2u - 1$
c_8	$u^{41} + 11u^{39} + \cdots + 3u + 1$
c_9	$u^{41} + u^{40} + \cdots - 2u + 1$
c_{10}	$u^{41} + u^{40} + \cdots + 34u + 4$
c_{11}	$u^{41} - 5u^{39} + \cdots + 2u + 1$
c_{12}	$u^{41} - 13u^{40} + \cdots - 11u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{41} + 10y^{40} + \cdots + 283y - 1$
c_2, c_8	$y^{41} + 22y^{40} + \cdots - 5y - 1$
c_3	$y^{41} - 25y^{40} + \cdots + 21y - 1$
c_4	$y^{41} + 20y^{40} + \cdots - 7y - 1$
c_5	$y^{41} - 24y^{39} + \cdots + 17392y - 361$
c_6	$y^{41} + 13y^{40} + \cdots + 481138y - 9409$
c_7, c_{11}	$y^{41} - 10y^{40} + \cdots - 26y - 1$
c_9	$y^{41} + y^{40} + \cdots - 34y - 1$
c_{10}	$y^{41} + 21y^{40} + \cdots + 156y - 16$
c_{12}	$y^{41} - 15y^{40} + \cdots + 3y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.598988+0.865344I$ $a=-1.022990-0.235083I$ $b=\ \ 0.231334-0.128745I$	$6.61505-2.36343I$	$13.1454+6.7907I$
$u=-0.598988-0.865344I$ $a=-1.022990+0.235083I$ $b=\ \ 0.231334+0.128745I$	$6.61505+2.36343I$	$13.1454-6.7907I$
$u=-0.376941+0.868744I$ $a=\ \ 1.57439+0.66804I$ $b=-0.380334+0.224394I$	$5.27220-1.59317I$	$-16.2236-5.3973I$
$u=-0.376941-0.868744I$ $a=\ \ 1.57439-0.66804I$ $b=-0.380334-0.224394I$	$5.27220+1.59317I$	$-16.2236+5.3973I$
$u=\ \ 0.577208+0.721237I$ $a=-2.64372+0.75658I$ $b=-0.31343-1.86635I$	$4.61404+5.56812I$	$5.78476-10.37610I$
$u=\ \ 0.577208-0.721237I$ $a=-2.64372-0.75658I$ $b=-0.31343+1.86635I$	$4.61404-5.56812I$	$5.78476+10.37610I$
$u=-0.775290+0.751998I$ $a=-0.346154-0.132107I$ $b=\ \ 0.0691839-0.0964018I$	$5.44963+1.93408I$	$11.9006-10.7077I$
$u=-0.775290-0.751998I$ $a=-0.346154+0.132107I$ $b=\ \ 0.0691839+0.0964018I$	$5.44963-1.93408I$	$11.9006+10.7077I$
$u=-0.046755+1.091780I$ $a=\ \ 0.491463+0.371920I$ $b=-0.635572+0.477388I$	$0.12252+2.09558I$	$2.43267-3.85110I$
$u=-0.046755-1.091780I$ $a=\ \ 0.491463-0.371920I$ $b=-0.635572-0.477388I$	$0.12252-2.09558I$	$2.43267+3.85110I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.290111+1.077500I$ $a=\ \ 2.57965-0.60292I$ $b=-1.59780-0.66936I$	$-5.84751-6.10867I$	$-3.02706+6.27837I$
$u=-0.290111-1.077500I$ $a=\ \ 2.57965+0.60292I$ $b=-1.59780+0.66936I$	$-5.84751+6.10867I$	$-3.02706-6.27837I$
$u=\ \ 0.506584+0.720753I$ $a=\ \ 3.36015-0.51820I$ $b=-0.56682+2.05616I$	$4.31465-3.15120I$	$7.36591-1.26606I$
$u=\ \ 0.506584-0.720753I$ $a=\ \ 3.36015+0.51820I$ $b=-0.56682-2.05616I$	$4.31465+3.15120I$	$7.36591+1.26606I$
$u=\ \ 0.779051+0.399880I$ $a=\ \ 0.611833+0.348189I$ $b=\ \ 1.25404+0.66207I$	$-0.38639-2.80737I$	$-0.94338+4.60551I$
$u=\ \ 0.779051-0.399880I$ $a=\ \ 0.611833-0.348189I$ $b=\ \ 1.25404-0.66207I$	$-0.38639+2.80737I$	$-0.94338-4.60551I$
$u=-0.878494+0.704132I$ $a=-0.179408-0.359328I$ $b=\ \ 0.787974+0.264368I$	$-0.341763+1.186910I$	$-2.35865+0.I$
$u=-0.878494-0.704132I$ $a=-0.179408+0.359328I$ $b=\ \ 0.787974-0.264368I$	$-0.341763-1.186910I$	$-2.35865+0.I$
$u=\ \ 0.539288+1.013210I$ $a=-0.737631+1.056580I$ $b=-0.57393-2.20425I$	$3.29984+7.40836I$	$7.25276-8.70343I$
$u=\ \ 0.539288-1.013210I$ $a=-0.737631-1.056580I$ $b=-0.57393+2.20425I$	$3.29984-7.40836I$	$7.25276+8.70343I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.371786 + 1.095820I$ $a = -1.81220 - 1.27616I$ $b = 1.70252 + 0.29490I$	$-4.14457 - 0.28130I$	$-3.87917 + 0.I$
$u = 0.371786 - 1.095820I$ $a = -1.81220 + 1.27616I$ $b = 1.70252 - 0.29490I$	$-4.14457 + 0.28130I$	$-3.87917 + 0.I$
$u = -0.239658 + 0.776070I$ $a = -1.080170 - 0.676686I$ $b = -0.97715 + 1.08447I$	$-4.65604 + 3.86182I$	$-10.82806 - 0.38545I$
$u = -0.239658 - 0.776070I$ $a = -1.080170 + 0.676686I$ $b = -0.97715 - 1.08447I$	$-4.65604 - 3.86182I$	$-10.82806 + 0.38545I$
$u = 0.612959 + 1.043170I$ $a = 0.962565 - 0.342794I$ $b = 0.05830 + 1.99293I$	$3.55512 - 0.83534I$	$9.81400 + 1.40438I$
$u = 0.612959 - 1.043170I$ $a = 0.962565 + 0.342794I$ $b = 0.05830 - 1.99293I$	$3.55512 + 0.83534I$	$9.81400 - 1.40438I$
$u = -0.723449 + 0.979663I$ $a = -0.365626 + 0.036912I$ $b = 0.1026420 + 0.0070731I$	$4.74599 - 7.61395I$	$16.0976 + 11.9157I$
$u = -0.723449 - 0.979663I$ $a = -0.365626 - 0.036912I$ $b = 0.1026420 - 0.0070731I$	$4.74599 + 7.61395I$	$16.0976 - 11.9157I$
$u = -0.742190 + 0.969717I$ $a = 0.198042 + 1.073040I$ $b = 0.240406 - 0.653920I$	$-1.12954 - 7.16316I$	$-5.85834 + 6.29910I$
$u = -0.742190 - 0.969717I$ $a = 0.198042 - 1.073040I$ $b = 0.240406 + 0.653920I$	$-1.12954 + 7.16316I$	$-5.85834 - 6.29910I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.553386 + 1.139860I$ $a = -1.70072 - 0.96778I$ $b = 1.42008 - 1.01478I$	$-2.71117 + 7.84427I$	$0. - 5.76093I$
$u = 0.553386 - 1.139860I$ $a = -1.70072 + 0.96778I$ $b = 1.42008 + 1.01478I$	$-2.71117 - 7.84427I$	$0. + 5.76093I$
$u = 0.887815 + 0.911680I$ $a = 0.83701 + 1.66221I$ $b = -2.61727 - 0.28447I$	$8.09689 + 3.26807I$	$53.3811 + 19.4020I$
$u = 0.887815 - 0.911680I$ $a = 0.83701 - 1.66221I$ $b = -2.61727 + 0.28447I$	$8.09689 - 3.26807I$	$53.3811 - 19.4020I$
$u = 0.207425 + 0.637090I$ $a = -1.30575 + 0.57486I$ $b = 1.147320 - 0.323866I$	$-2.21902 + 2.96944I$	$3.33270 - 6.32139I$
$u = 0.207425 - 0.637090I$ $a = -1.30575 - 0.57486I$ $b = 1.147320 + 0.323866I$	$-2.21902 - 2.96944I$	$3.33270 + 6.32139I$
$u = -0.089778 + 0.568406I$ $a = 3.10698 - 0.29000I$ $b = -0.469094 + 0.710383I$	$2.38066 - 2.85884I$	$-1.45474 + 2.26695I$
$u = -0.089778 - 0.568406I$ $a = 3.10698 + 0.29000I$ $b = -0.469094 - 0.710383I$	$2.38066 + 2.85884I$	$-1.45474 - 2.26695I$
$u = -0.15100 + 1.58017I$ $a = -1.42744 + 0.17298I$ $b = 2.40956 - 0.16208I$	$-8.30527 - 1.95740I$	0
$u = -0.15100 - 1.58017I$ $a = -1.42744 - 0.17298I$ $b = 2.40956 + 0.16208I$	$-8.30527 + 1.95740I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.245695$		
$a = \quad 2.79945$	-1.26204	2.91860
$b = \quad 1.41605$		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{41}-22u^{40}+\cdots-5u+1)(u^{119}+59u^{118}+\cdots-926108u-44521)$
c_2	$(u^{41}+11u^{39}+\cdots+3u-1)(u^{119}+u^{118}+\cdots-366u+211)$
c_3	$(u^{41}+21u^{40}+\cdots+17u+1)(u^{119}-12u^{118}+\cdots-594u-503)$
c_4	$(u^{41}+10u^{39}+\cdots-u+1)(u^{119}+3u^{118}+\cdots+95214u-3293)$
c_5	$(u^{41}-3u^{38}+\cdots+84u-19)(u^{119}+u^{118}+\cdots+5201393u-364301)$
c_6	$(u^{41}-7u^{40}+\cdots+734u-97)$ $\cdot(u^{119}-4u^{118}+\cdots-2916191u-324667)$
c_7	$(u^{41}-5u^{39}+\cdots+2u-1)(u^{119}+u^{118}+\cdots-25u+1)$
c_8	$(u^{41}+11u^{39}+\cdots+3u+1)(u^{119}+u^{118}+\cdots-366u+211)$
c_9	$(u^{41}+u^{40}+\cdots-2u+1)(u^{119}+2u^{118}+\cdots+3981u+337)$
c_{10}	$(u^{41}+u^{40}+\cdots+34u+4)(u^{119}-3u^{117}+\cdots-1.41558\times10^{7}u-953372)$
c_{11}	$(u^{41}-5u^{39}+\cdots+2u+1)(u^{119}+u^{118}+\cdots-25u+1)$
c_{12}	$(u^{41}-13u^{40}+\cdots-11u+1)(u^{119}+6u^{118}+\cdots-6u-1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{41}+10y^{40}+\cdots+283y-1)$ $\cdot(y^{119}+19y^{118}+\cdots-89555795764y-1982119441)$
c_2, c_8	$(y^{41}+22y^{40}+\cdots-5y-1)(y^{119}+59y^{118}+\cdots-926108y-44521)$
c_3	$(y^{41}-25y^{40}+\cdots+21y-1)$ $\cdot(y^{119}-44y^{118}+\cdots-2126954y-253009)$
c_4	$(y^{41}+20y^{40}+\cdots-7y-1)$ $\cdot(y^{119}-11y^{118}+\cdots+2421268218y-10843849)$
c_5	$(y^{41}-24y^{39}+\cdots+17392y-361)$ $\cdot(y^{119}+y^{118}+\cdots+3889002396385y-132715218601)$
c_6	$(y^{41}+13y^{40}+\cdots+481138y-9409)$ $\cdot(y^{119}-22y^{118}+\cdots+24438543848191y-105408660889)$
c_7, c_{11}	$(y^{41}-10y^{40}+\cdots-26y-1)(y^{119}-81y^{118}+\cdots-153y-1)$
c_9	$(y^{41}+y^{40}+\cdots-34y-1)$ $\cdot(y^{119}+14y^{118}+\cdots-16141701y-113569)$
c_{10}	$(y^{41}+21y^{40}+\cdots+156y-16)$ $\cdot(y^{119}-6y^{118}+\cdots+61203268140316y-908918170384)$
c_{12}	$(y^{41}-15y^{40}+\cdots+3y-1)(y^{119}-26y^{118}+\cdots+8y-1)$