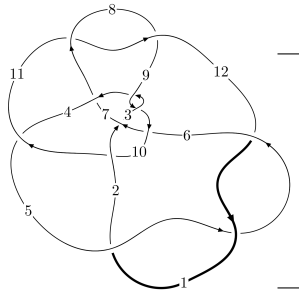
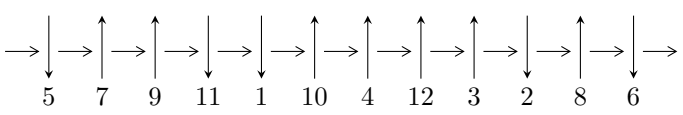
$12a_{1263}$ $(K12a_{1263})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 2.24929 \times 10^{783} u^{139} - 7.32075 \times 10^{782} u^{138} + \cdots + 1.05867 \times 10^{784} b - 2.31034 \times 10^{788}, \\
& 5.71289 \times 10^{786} u^{139} + 4.97855 \times 10^{788} u^{138} + \cdots + 1.01943 \times 10^{789} a - 5.83232 \times 10^{793}, \\
& u^{140} - u^{139} + \cdots + 332003u - 96293 \rangle \\
I_2^u = \langle & 8.39783 \times 10^{34} u^{34} - 2.36613 \times 10^{35} u^{33} + \cdots + 6.02662 \times 10^{35} b - 5.43593 \times 10^{34}, \\
& 8.27029 \times 10^{35} u^{34} - 1.98216 \times 10^{36} u^{33} + \cdots + 6.02662 \times 10^{35} a + 1.44049 \times 10^{36},\ u^{35} - 2u^{34} + \cdots + 2u + 1
\end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 175 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. $\boldsymbol{I_1^u = \langle 2.25 \times 10^{783} u^{139} - 7.32 \times 10^{782} u^{138} + \cdots + 1.06 \times 10^{784} b - 2.31 \times 10^{788},\ 5.71 \times 10^{786} u^{139} + 4.98 \times 10^{788} u^{138} + \cdots + 1.02 \times 10^{789} a - 5.83 \times 10^{793},\ u^{140} - u^{139} + \cdots + 332003u - 96293 \rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.00560401u^{139} - 0.488367u^{138} + \cdots - 203653.u + 57211.7 \\ -0.212463u^{139} + 0.0691502u^{138} + \cdots - 49005.2u + 21823.0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.628246u^{139} - 0.450621u^{138} + \cdots + 38726.8u - 29886.8 \\ -0.132909u^{139} + 0.180065u^{138} + \cdots + 23446.4u - 1954.86 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.761156u^{139} - 0.630686u^{138} + \cdots + 15280.4u - 27932.0 \\ -0.132909u^{139} + 0.180065u^{138} + \cdots + 23446.4u - 1954.86 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -1.68612u^{139} + 2.42121u^{138} + \cdots + 411384.u - 56520.7 \\ -0.223495u^{139} + 0.394283u^{138} + \cdots + 73568.9u - 13608.8 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.571880u^{139} - 0.475318u^{138} + \cdots + 10925.2u - 20445.9 \\ -0.166471u^{139} + 0.184555u^{138} + \cdots + 12122.7u + 2266.14 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1.28707u^{139} - 2.82130u^{138} + \cdots - 712550.u + 154932. \\ 0.294514u^{139} - 0.651470u^{138} + \cdots - 168867.u + 38137.4 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1.17734u^{139} - 0.393159u^{138} + \cdots + 290444.u - 116963. \\ -0.197733u^{139} + 0.442368u^{138} + \cdots + 127471.u - 28333.1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.618210u^{139} - 2.20677u^{138} + \cdots - 703965.u + 174816. \\ 0.0940340u^{139} - 0.645728u^{138} + \cdots - 253249.u + 68008.6 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2.55798u^{139} + 3.84011u^{138} + \cdots + 744153.u - 121938.$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_{12}	$u^{140} + u^{139} + \cdots + 111u - 19$
c_2	$u^{140} + u^{139} + \cdots - 47u^2 + 1$
c_3, c_9	$u^{140} - u^{139} + \cdots + 332003u - 96293$
c_4	$u^{140} - u^{139} + \cdots + 119685000u - 24250000$
c_6	$u^{140} - 7u^{139} + \cdots - 1123u - 3431$
c_7	$u^{140} - 2u^{139} + \cdots - 1204155u + 99181$
c_8, c_{11}	$u^{140} - 40u^{138} + \cdots - 17417u + 6031$
c_{10}	$u^{140} + 3u^{139} + \cdots + 206177531u - 17678239$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_{12}	$y^{140} + 141y^{139} + \cdots - 5101y + 361$
c_2	$y^{140} + 3y^{139} + \cdots - 94y + 1$
c_3, c_9	$y^{140} + 87y^{139} + \cdots + 397864600249y + 9272341849$
c_4	$y^{140} + 59y^{139} + \cdots + 5616721975000000y + 588062500000000$
c_6	$y^{140} + 13y^{139} + \cdots + 1031428699y + 11771761$
c_7	$y^{140} - 10y^{139} + \cdots - 3523667595645y + 9836870761$
c_8, c_{11}	$y^{140} - 80y^{139} + \cdots - 39061407y + 36372961$
c_{10}	$y^{140} + 33y^{139} + \cdots + 7961914991781171y + 312520134141121$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.011537+0.987635I$ $a=\ 0.222111-0.976015I$ $b=\ 1.82042+1.89873I$	$-1.68718-2.05562I$	0
$u=-0.011537-0.987635I$ $a=\ 0.222111+0.976015I$ $b=\ 1.82042-1.89873I$	$-1.68718+2.05562I$	0
$u=\ 0.405869+0.898266I$ $a=-0.951671+0.982656I$ $b=-1.92746-1.43023I$	$9.48776+8.70726I$	0
$u=\ 0.405869-0.898266I$ $a=-0.951671-0.982656I$ $b=-1.92746+1.43023I$	$9.48776-8.70726I$	0
$u=-0.156458+0.969455I$ $a=\ 0.844811+0.856989I$ $b=\ 1.72553+0.12040I$	$2.01558-2.72630I$	0
$u=-0.156458-0.969455I$ $a=\ 0.844811-0.856989I$ $b=\ 1.72553-0.12040I$	$2.01558+2.72630I$	0
$u=-0.641523+0.803274I$ $a=\ 0.88850+1.25660I$ $b=\ 0.874773-0.310547I$	$10.79060-6.91824I$	0
$u=-0.641523-0.803274I$ $a=\ 0.88850-1.25660I$ $b=\ 0.874773+0.310547I$	$10.79060+6.91824I$	0
$u=\ 0.700876+0.755275I$ $a=\ 0.512080-1.064610I$ $b=\ 1.65141+0.13872I$	$9.90388-4.32846I$	0
$u=\ 0.700876-0.755275I$ $a=\ 0.512080+1.064610I$ $b=\ 1.65141-0.13872I$	$9.90388+4.32846I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.187098+1.021840I$ $a=-1.02875-1.27389I$ $b=-1.015880+0.571526I$	$0.72184-4.97808I$	0
$u=-0.187098-1.021840I$ $a=-1.02875+1.27389I$ $b=-1.015880-0.571526I$	$0.72184+4.97808I$	0
$u=-0.153195+1.028200I$ $a=-0.419501-1.118080I$ $b=-1.34514+1.55158I$	$-0.18814-3.46918I$	0
$u=-0.153195-1.028200I$ $a=-0.419501+1.118080I$ $b=-1.34514-1.55158I$	$-0.18814+3.46918I$	0
$u=0.877951+0.372977I$ $a=-1.220480+0.674116I$ $b=-1.72276+0.15302I$	$12.61210-0.31082I$	0
$u=0.877951-0.372977I$ $a=-1.220480-0.674116I$ $b=-1.72276-0.15302I$	$12.61210+0.31082I$	0
$u=-0.140661+0.939802I$ $a=1.65903+0.01008I$ $b=0.409488-0.265370I$	$4.19870+0.63853I$	0
$u=-0.140661-0.939802I$ $a=1.65903-0.01008I$ $b=0.409488+0.265370I$	$4.19870-0.63853I$	0
$u=-1.050570+0.009869I$ $a=-0.801497-0.505577I$ $b=-1.154160-0.034165I$	$5.42694+0.57047I$	0
$u=-1.050570-0.009869I$ $a=-0.801497+0.505577I$ $b=-1.154160+0.034165I$	$5.42694-0.57047I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.143741 + 0.924003I$ $a = -0.065572 - 0.820566I$ $b = -2.15051 + 1.91540I$	$4.04098 + 6.51042I$	0
$u = 0.143741 - 0.924003I$ $a = -0.065572 + 0.820566I$ $b = -2.15051 - 1.91540I$	$4.04098 - 6.51042I$	0
$u = 0.094362 + 1.068730I$ $a = -0.472202 + 0.753145I$ $b = -1.54429 - 0.35899I$	$-2.22225 + 1.94956I$	0
$u = 0.094362 - 1.068730I$ $a = -0.472202 - 0.753145I$ $b = -1.54429 + 0.35899I$	$-2.22225 - 1.94956I$	0
$u = 0.898465 + 0.185846I$ $a = -0.114352 - 1.149320I$ $b = -0.536254 - 0.029927I$	$6.90454 - 7.30067I$	0
$u = 0.898465 - 0.185846I$ $a = -0.114352 + 1.149320I$ $b = -0.536254 + 0.029927I$	$6.90454 + 7.30067I$	0
$u = -0.915340 + 0.038321I$ $a = 1.309630 + 0.375668I$ $b = 1.82440 + 0.12523I$	$5.38284 + 3.73171I$	0
$u = -0.915340 - 0.038321I$ $a = 1.309630 - 0.375668I$ $b = 1.82440 - 0.12523I$	$5.38284 - 3.73171I$	0
$u = 0.169611 + 1.070680I$ $a = 0.502450 + 0.303642I$ $b = 0.223502 + 0.628809I$	$-1.02611 + 2.08336I$	0
$u = 0.169611 - 1.070680I$ $a = 0.502450 - 0.303642I$ $b = 0.223502 - 0.628809I$	$-1.02611 - 2.08336I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.294666 + 0.864535I$ $a = -0.27867 + 1.68063I$ $b = -0.334751 - 0.362191I$	$2.69684 + 3.35862I$	0
$u = 0.294666 - 0.864535I$ $a = -0.27867 - 1.68063I$ $b = -0.334751 + 0.362191I$	$2.69684 - 3.35862I$	0
$u = -0.231556 + 0.874410I$ $a = -0.975800 + 0.165966I$ $b = 0.120729 + 0.561763I$	$5.44719 - 3.98531I$	0
$u = -0.231556 - 0.874410I$ $a = -0.975800 - 0.165966I$ $b = 0.120729 - 0.561763I$	$5.44719 + 3.98531I$	0
$u = -0.065020 + 0.897114I$ $a = 1.51821 - 1.25622I$ $b = 0.670900 - 0.018761I$	$4.57064 - 1.80015I$	0
$u = -0.065020 - 0.897114I$ $a = 1.51821 + 1.25622I$ $b = 0.670900 + 0.018761I$	$4.57064 + 1.80015I$	0
$u = 0.799749 + 0.398247I$ $a = 1.45231 - 0.10925I$ $b = 1.48892 - 0.09727I$	$4.27786 + 0.58183I$	0
$u = 0.799749 - 0.398247I$ $a = 1.45231 + 0.10925I$ $b = 1.48892 + 0.09727I$	$4.27786 - 0.58183I$	0
$u = -0.052220 + 0.881872I$ $a = -0.793012 + 0.905251I$ $b = -1.77670 + 0.20269I$	$6.15723 + 2.41016I$	0
$u = -0.052220 - 0.881872I$ $a = -0.793012 - 0.905251I$ $b = -1.77670 - 0.20269I$	$6.15723 - 2.41016I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.167820+1.114280I$ $a=-0.979020+0.073672I$ $b=-0.400462-0.248542I$	$-4.75498-1.11662I$	0
$u=-0.167820-1.114280I$ $a=-0.979020-0.073672I$ $b=-0.400462+0.248542I$	$-4.75498+1.11662I$	0
$u=0.246499+1.106460I$ $a=-0.844702+0.839946I$ $b=-1.66854+0.12869I$	$7.35460+3.46036I$	0
$u=0.246499-1.106460I$ $a=-0.844702-0.839946I$ $b=-1.66854-0.12869I$	$7.35460-3.46036I$	0
$u=-0.287523+1.138690I$ $a=0.607268+0.763293I$ $b=2.31245-0.89941I$	$1.18368-6.23016I$	0
$u=-0.287523-1.138690I$ $a=0.607268-0.763293I$ $b=2.31245+0.89941I$	$1.18368+6.23016I$	0
$u=1.174660+0.059863I$ $a=-1.087820-0.304684I$ $b=-1.83072-0.04808I$	$4.97822+8.70685I$	0
$u=1.174660-0.059863I$ $a=-1.087820+0.304684I$ $b=-1.83072+0.04808I$	$4.97822-8.70685I$	0
$u=0.312269+1.146040I$ $a=0.957741-0.934799I$ $b=1.39662+0.54936I$	$6.89246+10.15580I$	0
$u=0.312269-1.146040I$ $a=0.957741+0.934799I$ $b=1.39662-0.54936I$	$6.89246-10.15580I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.701160 + 0.407268I$ $a = -0.022196 - 0.838092I$ $b = 0.789725 + 0.586023I$	$4.29608 - 3.62129I$	0
$u = 0.701160 - 0.407268I$ $a = -0.022196 + 0.838092I$ $b = 0.789725 - 0.586023I$	$4.29608 + 3.62129I$	0
$u = 0.492849 + 1.098340I$ $a = 0.766549 - 0.970497I$ $b = 1.57889 + 1.06006I$	$10.35320 + 5.26435I$	0
$u = 0.492849 - 1.098340I$ $a = 0.766549 + 0.970497I$ $b = 1.57889 - 1.06006I$	$10.35320 - 5.26435I$	0
$u = 0.640906 + 1.022450I$ $a = 0.798021 + 0.849710I$ $b = 0.548648 - 0.094329I$	$-0.15576 + 2.61346I$	0
$u = 0.640906 - 1.022450I$ $a = 0.798021 - 0.849710I$ $b = 0.548648 + 0.094329I$	$-0.15576 - 2.61346I$	0
$u = 0.051379 + 1.213250I$ $a = -0.371063 + 0.594846I$ $b = -1.48959 + 0.46011I$	$-2.39167 + 1.84256I$	0
$u = 0.051379 - 1.213250I$ $a = -0.371063 - 0.594846I$ $b = -1.48959 - 0.46011I$	$-2.39167 - 1.84256I$	0
$u = -0.782871 + 0.017311I$ $a = -0.127947 + 1.063560I$ $b = 0.340612 + 0.087435I$	$0.94567 - 4.26277I$	0
$u = -0.782871 - 0.017311I$ $a = -0.127947 - 1.063560I$ $b = 0.340612 - 0.087435I$	$0.94567 + 4.26277I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.925571+0.792888I$ $a=-1.187970-0.445763I$ $b=-1.52685+0.07931I$	$11.07510+1.17585I$	0
$u=-0.925571-0.792888I$ $a=-1.187970+0.445763I$ $b=-1.52685-0.07931I$	$11.07510-1.17585I$	0
$u=-0.435943+1.140640I$ $a=-0.772650+0.612774I$ $b=-0.455704-0.068920I$	$-4.67657-1.62301I$	0
$u=-0.435943-1.140640I$ $a=-0.772650-0.612774I$ $b=-0.455704+0.068920I$	$-4.67657+1.62301I$	0
$u=-0.614746+0.440691I$ $a=-0.79789-1.20423I$ $b=-1.61761+0.37966I$	$3.52548+2.60478I$	0
$u=-0.614746-0.440691I$ $a=-0.79789+1.20423I$ $b=-1.61761-0.37966I$	$3.52548-2.60478I$	0
$u=0.239799+1.244230I$ $a=-0.793245-0.000926I$ $b=-0.449204-0.319002I$	$-2.96141+3.64464I$	0
$u=0.239799-1.244230I$ $a=-0.793245+0.000926I$ $b=-0.449204+0.319002I$	$-2.96141-3.64464I$	0
$u=-0.423563+1.196600I$ $a=0.617832+0.534941I$ $b=1.72496-0.25801I$	$1.74294-5.86036I$	0
$u=-0.423563-1.196600I$ $a=0.617832-0.534941I$ $b=1.72496+0.25801I$	$1.74294+5.86036I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.391316 + 0.615681I$ $a = -0.005074 + 0.785772I$ $b = 0.609220 - 0.167133I$	$1.08747 + 1.96716I$	0
$u = 0.391316 - 0.615681I$ $a = -0.005074 - 0.785772I$ $b = 0.609220 + 0.167133I$	$1.08747 - 1.96716I$	0
$u = -0.297557 + 0.663459I$ $a = -0.20708 - 1.54565I$ $b = -0.634283 + 0.732791I$	$2.53074 + 0.69111I$	0
$u = -0.297557 - 0.663459I$ $a = -0.20708 + 1.54565I$ $b = -0.634283 - 0.732791I$	$2.53074 - 0.69111I$	0
$u = 0.065883 + 1.276710I$ $a = 0.093199 - 0.692628I$ $b = 0.44202 - 2.04902I$	$-2.39391 + 3.45836I$	0
$u = 0.065883 - 1.276710I$ $a = 0.093199 + 0.692628I$ $b = 0.44202 + 2.04902I$	$-2.39391 - 3.45836I$	0
$u = 1.155320 + 0.568138I$ $a = 0.688006 - 0.521058I$ $b = 1.349150 + 0.399091I$	$1.66994 - 0.75450I$	0
$u = 1.155320 - 0.568138I$ $a = 0.688006 + 0.521058I$ $b = 1.349150 - 0.399091I$	$1.66994 + 0.75450I$	0
$u = -0.183980 + 1.289640I$ $a = -0.269993 - 0.750699I$ $b = -1.10677 - 1.35496I$	$5.00104 - 8.35199I$	0
$u = -0.183980 - 1.289640I$ $a = -0.269993 + 0.750699I$ $b = -1.10677 + 1.35496I$	$5.00104 + 8.35199I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.413970+1.279440I$ $a=\ 0.747270-0.382358I$ $b=\ 0.468775-0.274005I$	$-3.05520-8.65793I$	0
$u=-0.413970-1.279440I$ $a=\ 0.747270+0.382358I$ $b=\ 0.468775+0.274005I$	$-3.05520+8.65793I$	0
$u=-1.346110+0.008859I$ $a=\ 0.988115+0.364296I$ $b=\ 1.80033+0.00411I$	$11.3681+12.5760I$	0
$u=-1.346110-0.008859I$ $a=\ 0.988115-0.364296I$ $b=\ 1.80033-0.00411I$	$11.3681-12.5760I$	0
$u=\ 0.242468+0.598436I$ $a=\ 0.01998-2.17788I$ $b=\ 0.660323+0.657001I$	$9.09793-1.29365I$	0
$u=\ 0.242468-0.598436I$ $a=\ 0.01998+2.17788I$ $b=\ 0.660323-0.657001I$	$9.09793+1.29365I$	0
$u=\ 0.523413+1.256520I$ $a=-0.783283-0.549300I$ $b=-0.454010-0.250245I$	$3.54604+12.51540I$	0
$u=\ 0.523413-1.256520I$ $a=-0.783283+0.549300I$ $b=-0.454010+0.250245I$	$3.54604-12.51540I$	0
$u=\ 0.205210+1.348560I$ $a=\ 0.219356-0.034860I$ $b=-0.054733-0.468255I$	$-4.29344+3.91195I$	0
$u=\ 0.205210-1.348560I$ $a=\ 0.219356+0.034860I$ $b=-0.054733+0.468255I$	$-4.29344-3.91195I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.585084 + 1.241720I$ $a = -0.447507 + 0.654590I$ $b = -1.20701 - 1.36254I$	$0.48517 + 4.24584I$	0
$u = 0.585084 - 1.241720I$ $a = -0.447507 - 0.654590I$ $b = -1.20701 + 1.36254I$	$0.48517 - 4.24584I$	0
$u = -0.528752 + 0.319678I$ $a = -0.711874 + 0.282100I$ $b = -0.322250 + 1.315670I$	$7.08929 + 1.18184I$	0
$u = -0.528752 - 0.319678I$ $a = -0.711874 - 0.282100I$ $b = -0.322250 - 1.315670I$	$7.08929 - 1.18184I$	0
$u = 0.613558$ $a = 1.26487$ $b = 0.717996$	1.26191	0
$u = 0.584606 + 0.179952I$ $a = 0.511392 + 0.689265I$ $b = 0.073512 + 0.407951I$	$1.44086 + 0.82035I$	0
$u = 0.584606 - 0.179952I$ $a = 0.511392 - 0.689265I$ $b = 0.073512 - 0.407951I$	$1.44086 - 0.82035I$	0
$u = -0.483224 + 1.305820I$ $a = -0.661511 - 0.763527I$ $b = -1.89258 + 1.10493I$	$1.42620 - 8.79154I$	0
$u = -0.483224 - 1.305820I$ $a = -0.661511 + 0.763527I$ $b = -1.89258 - 1.10493I$	$1.42620 + 8.79154I$	0
$u = -0.411620 + 1.332090I$ $a = 0.656600 + 0.594023I$ $b = 2.01565 - 0.86780I$	$0.87206 - 6.09624I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.411620-1.332090I$ $a=\ 0.656600-0.594023I$ $b=\ 2.01565+0.86780I$	$0.87206+6.09624I$	0
$u=\ 0.365065+1.358440I$ $a=\ 0.541423+0.621107I$ $b=\ 0.503999+0.062949I$	$-0.568796+0.310464I$	0
$u=\ 0.365065-1.358440I$ $a=\ 0.541423-0.621107I$ $b=\ 0.503999-0.062949I$	$-0.568796-0.310464I$	0
$u=-0.003719+0.586872I$ $a=\ 0.219262+1.358200I$ $b=\ 1.071410+0.136796I$	$1.11058+2.05304I$	0
$u=-0.003719-0.586872I$ $a=\ 0.219262-1.358200I$ $b=\ 1.071410-0.136796I$	$1.11058-2.05304I$	0
$u=-0.63387+1.27601I$ $a=\ 0.575994+0.502782I$ $b=\ 1.73639-1.32125I$	$-2.69508-7.22734I$	0
$u=-0.63387-1.27601I$ $a=\ 0.575994-0.502782I$ $b=\ 1.73639+1.32125I$	$-2.69508+7.22734I$	0
$u=-0.49525+1.33974I$ $a=-0.299030+0.620889I$ $b=\ 0.145215+0.065094I$	$1.16063-4.89042I$	0
$u=-0.49525-1.33974I$ $a=-0.299030-0.620889I$ $b=\ 0.145215-0.065094I$	$1.16063+4.89042I$	0
$u=\ 0.31643+1.40101I$ $a=\ 0.146091+0.371104I$ $b=-0.173872-0.144118I$	$-4.32016+3.69659I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.31643 - 1.40101I$ $a = 0.146091 - 0.371104I$ $b = -0.173872 + 0.144118I$	$-4.32016 - 3.69659I$	0
$u = 0.67157 + 1.27024I$ $a = -0.658319 + 0.390212I$ $b = -2.02814 - 1.24383I$	$1.95043 + 9.81542I$	0
$u = 0.67157 - 1.27024I$ $a = -0.658319 - 0.390212I$ $b = -2.02814 + 1.24383I$	$1.95043 - 9.81542I$	0
$u = 0.55343 + 1.38472I$ $a = 0.699311 - 0.664007I$ $b = 1.98692 + 0.98624I$	$0.4946 + 14.7294I$	0
$u = 0.55343 - 1.38472I$ $a = 0.699311 + 0.664007I$ $b = 1.98692 - 0.98624I$	$0.4946 - 14.7294I$	0
$u = -1.40490 + 0.50158I$ $a = -0.802748 - 0.433829I$ $b = -1.52071 + 0.17854I$	$6.86497 + 1.93649I$	0
$u = -1.40490 - 0.50158I$ $a = -0.802748 + 0.433829I$ $b = -1.52071 - 0.17854I$	$6.86497 - 1.93649I$	0
$u = -0.348939 + 0.352065I$ $a = 0.563322 - 0.410908I$ $b = -0.515348 + 0.471545I$	$-1.07403 + 1.07754I$	$-3.76642 - 2.48659I$
$u = -0.348939 - 0.352065I$ $a = 0.563322 + 0.410908I$ $b = -0.515348 - 0.471545I$	$-1.07403 - 1.07754I$	$-3.76642 + 2.48659I$
$u = 0.62757 + 1.37043I$ $a = -0.709923 + 0.573179I$ $b = -1.80294 - 0.83151I$	$-1.75463 + 7.73156I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.62757 - 1.37043I$ $a = -0.709923 - 0.573179I$ $b = -1.80294 + 0.83151I$	$-1.75463 - 7.73156I$	0
$u = -0.62231 + 1.41409I$ $a = -0.749592 - 0.616048I$ $b = -2.00179 + 0.89372I$	$6.9671 - 19.3237I$	0
$u = -0.62231 - 1.41409I$ $a = -0.749592 + 0.616048I$ $b = -2.00179 - 0.89372I$	$6.9671 + 19.3237I$	0
$u = -0.74089 + 1.40889I$ $a = 0.757317 + 0.584635I$ $b = 1.72516 - 0.69190I$	$3.54891 - 9.65312I$	0
$u = -0.74089 - 1.40889I$ $a = 0.757317 - 0.584635I$ $b = 1.72516 + 0.69190I$	$3.54891 + 9.65312I$	0
$u = -0.27253 + 1.58592I$ $a = 0.087008 + 0.551447I$ $b = 0.361102 - 0.065629I$	$-0.54349 - 3.59963I$	0
$u = -0.27253 - 1.58592I$ $a = 0.087008 - 0.551447I$ $b = 0.361102 + 0.065629I$	$-0.54349 + 3.59963I$	0
$u = -0.139327 + 0.358900I$ $a = 0.76393 + 3.39639I$ $b = 0.374926 + 0.446284I$	$2.34558 + 3.11822I$	$10.49138 - 5.66384I$
$u = -0.139327 - 0.358900I$ $a = 0.76393 - 3.39639I$ $b = 0.374926 - 0.446284I$	$2.34558 - 3.11822I$	$10.49138 + 5.66384I$
$u = 0.18937 + 1.61837I$ $a = 0.113274 - 0.449031I$ $b = 1.10614 + 1.72672I$	$3.79969 - 2.71090I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.18937 - 1.61837I$ $a = 0.113274 + 0.449031I$ $b = 1.10614 - 1.72672I$	$3.79969 + 2.71090I$	0
$u = 0.263954 + 0.206640I$ $a = -2.50262 + 3.57723I$ $b = -0.607680 + 0.445254I$	$9.70279 - 7.40590I$	$8.34000 + 2.94862I$
$u = 0.263954 - 0.206640I$ $a = -2.50262 - 3.57723I$ $b = -0.607680 - 0.445254I$	$9.70279 + 7.40590I$	$8.34000 - 2.94862I$
$u = -0.29643 + 1.85093I$ $a = -0.138716 - 0.481053I$ $b = -1.01693 + 1.32163I$	$0.119130 - 0.579594I$	0
$u = -0.29643 - 1.85093I$ $a = -0.138716 + 0.481053I$ $b = -1.01693 - 1.32163I$	$0.119130 + 0.579594I$	0
$u = 0.07527 + 1.98129I$ $a = 0.110829 - 0.531918I$ $b = 0.682499 + 0.931502I$	$5.02419 + 4.09928I$	0
$u = 0.07527 - 1.98129I$ $a = 0.110829 + 0.531918I$ $b = 0.682499 - 0.931502I$	$5.02419 - 4.09928I$	0
$u = 2.24887 + 0.78714I$ $a = 0.316485 - 0.153968I$ $b = 2.87562 + 1.10900I$	$4.20472 - 2.95610I$	0
$u = 2.24887 - 0.78714I$ $a = 0.316485 + 0.153968I$ $b = 2.87562 - 1.10900I$	$4.20472 + 2.95610I$	0
$u = -2.49965$ $a = -0.358485$ $b = -3.12737$	0.200357	0

II.

$\boldsymbol{I_2^u = \langle 8.40\times 10^{34}u^{34} - 2.37\times 10^{35}u^{33} + \cdots + 6.03\times 10^{35}b - 5.44\times 10^{34},\ 8.27\times 10^{35}u^{34} - 1.98\times 10^{36}u^{33} + \cdots + 6.03\times 10^{35}a + 1.44\times 10^{36},\ u^{35} - 2u^{34} + \cdots + 2u + 1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -1.37229u^{34} + 3.28901u^{33} + \cdots - 0.292527u - 2.39021 \\ -0.139346u^{34} + 0.392614u^{33} + \cdots + 2.89375u + 0.0901987 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.721576u^{34} - 1.37561u^{33} + \cdots + 4.94258u + 3.74218 \\ 0.452170u^{34} - 0.676097u^{33} + \cdots - 0.413976u + 0.981183 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.269406u^{34} - 0.699517u^{33} + \cdots + 5.35656u + 2.76100 \\ 0.452170u^{34} - 0.676097u^{33} + \cdots - 0.413976u + 0.981183 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.214303u^{34} + 0.420139u^{33} + \cdots - 1.46325u + 2.10936 \\ -0.0801841u^{34} + 0.124464u^{33} + \cdots - 1.37260u + 0.645466 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.625754u^{34} - 1.37039u^{33} + \cdots + 5.87743u + 3.36004 \\ 0.689828u^{34} - 1.15584u^{33} + \cdots - 0.333111u + 1.53840 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1.42285u^{34} - 2.56716u^{33} + \cdots + 11.1687u + 0.473402 \\ 0.408484u^{34} - 0.931290u^{33} + \cdots + 2.30772u + 1.10902 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -1.20124u^{34} + 1.57525u^{33} + \cdots + 4.28666u - 6.48527 \\ 0.0933680u^{34} - 0.360185u^{33} + \cdots + 2.66323u - 1.18203 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1.30933u^{34} - 1.76370u^{33} + \cdots - 5.93293u + 4.02311 \\ -0.00433909u^{34} + 0.227435u^{33} + \cdots - 1.14457u + 0.243304 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -0.270917u^{34} + 2.22217u^{33} + \cdots - 2.12074u + 10.2724$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{12}	$u^{35} + 2u^{34} + \cdots - 28u^2 - 1$
c_2	$u^{35} + u^{32} + \cdots - 3u + 1$
c_3	$u^{35} - 2u^{34} + \cdots + 2u + 1$
c_4	$u^{35} - 2u^{34} + \cdots - 48u + 16$
c_5	$u^{35} - 2u^{34} + \cdots + 28u^2 + 1$
c_6	$u^{35} + 3u^{33} + \cdots + 14u + 1$
c_7	$u^{35} + u^{34} + \cdots - 16u^2 + 1$
c_8	$u^{35} - 5u^{34} + \cdots - 8u + 1$
c_9	$u^{35} + 2u^{34} + \cdots + 2u - 1$
c_{10}	$u^{35} + 4u^{34} + \cdots - 8u - 1$
c_{11}	$u^{35} + 5u^{34} + \cdots - 8u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_{12}	$y^{35} + 38y^{34} + \cdots - 56y - 1$
c_2	$y^{35} + 36y^{33} + \cdots + 101y - 1$
c_3, c_9	$y^{35} + 20y^{34} + \cdots + 6y - 1$
c_4	$y^{35} + 4y^{34} + \cdots - 2304y - 256$
c_6	$y^{35} + 6y^{34} + \cdots + 24y - 1$
c_7	$y^{35} + 15y^{34} + \cdots + 32y - 1$
c_8, c_{11}	$y^{35} - 15y^{34} + \cdots + 30y - 1$
c_{10}	$y^{35} - 14y^{34} + \cdots + 12y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.148003 + 1.004390I$ $a = -0.75689 + 1.24026I$ $b = -1.29858 - 0.87820I$	$0.85748 + 4.39942I$	$5.27829 - 2.07733I$
$u = 0.148003 - 1.004390I$ $a = -0.75689 - 1.24026I$ $b = -1.29858 + 0.87820I$	$0.85748 - 4.39942I$	$5.27829 + 2.07733I$
$u = -0.303221 + 0.886290I$ $a = 0.94491 + 1.23519I$ $b = 1.32907 - 1.29342I$	$8.73847 - 8.43169I$	$2.93507 + 6.12768I$
$u = -0.303221 - 0.886290I$ $a = 0.94491 - 1.23519I$ $b = 1.32907 + 1.29342I$	$8.73847 + 8.43169I$	$2.93507 - 6.12768I$
$u = -0.005324 + 0.878041I$ $a = 1.67072 + 0.80863I$ $b = 0.611455 + 0.217078I$	$4.59920 + 1.36724I$	$11.13802 + 3.10936I$
$u = -0.005324 - 0.878041I$ $a = 1.67072 - 0.80863I$ $b = 0.611455 - 0.217078I$	$4.59920 - 1.36724I$	$11.13802 - 3.10936I$
$u = -0.338383 + 1.081360I$ $a = -0.966522 + 0.488367I$ $b = -0.496408 - 0.044288I$	$-4.35103 - 1.49139I$	$11.02078 + 2.56737I$
$u = -0.338383 - 1.081360I$ $a = -0.966522 - 0.488367I$ $b = -0.496408 + 0.044288I$	$-4.35103 + 1.49139I$	$11.02078 - 2.56737I$
$u = 0.291324 + 1.124290I$ $a = -0.290551 + 0.421121I$ $b = -2.09047 + 1.20229I$	$3.61617 + 7.46467I$	$4.21271 - 8.74836I$
$u = 0.291324 - 1.124290I$ $a = -0.290551 - 0.421121I$ $b = -2.09047 - 1.20229I$	$3.61617 - 7.46467I$	$4.21271 + 8.74836I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.255613+1.196070I$ $a=\ 0.339140-0.805322I$ $b=\ 0.092821+0.890957I$	$3.25657-2.03781I$	$6.93247+1.13617I$
$u=-0.255613-1.196070I$ $a=\ 0.339140+0.805322I$ $b=\ 0.092821-0.890957I$	$3.25657+2.03781I$	$6.93247-1.13617I$
$u=-0.104056+1.228420I$ $a=\ 0.079941+0.566828I$ $b=\ 0.86197+2.07781I$	$-2.88617-3.22155I$	$-7.56200+3.69125I$
$u=-0.104056-1.228420I$ $a=\ 0.079941-0.566828I$ $b=\ 0.86197-2.07781I$	$-2.88617+3.22155I$	$-7.56200-3.69125I$
$u=\ 0.581580+1.131140I$ $a=\ 0.591143+0.662292I$ $b=\ 0.415068-0.372517I$	$-1.03732+2.41221I$	$-2.23754-2.30105I$
$u=\ 0.581580-1.131140I$ $a=\ 0.591143-0.662292I$ $b=\ 0.415068+0.372517I$	$-1.03732-2.41221I$	$-2.23754+2.30105I$
$u=\ 0.523852+1.257030I$ $a=-0.678662+0.657200I$ $b=-1.75948-1.07982I$	$-0.71919+6.83880I$	$2.00000-5.93106I$
$u=\ 0.523852-1.257030I$ $a=-0.678662-0.657200I$ $b=-1.75948+1.07982I$	$-0.71919-6.83880I$	$2.00000+5.93106I$
$u=-0.23742+1.42449I$ $a=-0.008709+0.407983I$ $b=\ 0.211134+0.239244I$	$-3.83992-3.71939I$	$11.25915+0.I$
$u=-0.23742-1.42449I$ $a=-0.008709-0.407983I$ $b=\ 0.211134-0.239244I$	$-3.83992+3.71939I$	$11.25915+0.I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.34115 + 1.47649I$ $a = 0.036329 + 0.319624I$ $b = -0.300089 - 0.780469I$	$-1.57293 + 3.49417I$	0
$u = 0.34115 - 1.47649I$ $a = 0.036329 - 0.319624I$ $b = -0.300089 + 0.780469I$	$-1.57293 - 3.49417I$	0
$u = 0.298932 + 0.378191I$ $a = 1.21759 - 1.92403I$ $b = 0.899581 - 0.238874I$	$1.86755 - 2.21323I$	$7.82166 + 1.60507I$
$u = 0.298932 - 0.378191I$ $a = 1.21759 + 1.92403I$ $b = 0.899581 + 0.238874I$	$1.86755 + 2.21323I$	$7.82166 - 1.60507I$
$u = -0.397223 + 0.231309I$ $a = -0.82997 - 1.63003I$ $b = -1.64476 + 0.92846I$	$7.38348 + 2.40004I$	$12.85885 - 3.53595I$
$u = -0.397223 - 0.231309I$ $a = -0.82997 + 1.63003I$ $b = -1.64476 - 0.92846I$	$7.38348 - 2.40004I$	$12.85885 + 3.53595I$
$u = -0.72902 + 1.41948I$ $a = 0.633505 + 0.450188I$ $b = 1.90756 - 0.89343I$	$1.34373 - 7.81175I$	0
$u = -0.72902 - 1.41948I$ $a = 0.633505 - 0.450188I$ $b = 1.90756 + 0.89343I$	$1.34373 + 7.81175I$	0
$u = 0.344815 + 0.186697I$ $a = 1.65004 - 2.12266I$ $b = 1.42141 + 0.44959I$	$3.47901 - 1.82814I$	$9.04456 - 0.49479I$
$u = 0.344815 - 0.186697I$ $a = 1.65004 + 2.12266I$ $b = 1.42141 - 0.44959I$	$3.47901 + 1.82814I$	$9.04456 + 0.49479I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.304839+0.148400I$ $a=-2.69539-2.93324I$ $b=-1.106190+0.314015I$	$9.52500+1.85705I$	$11.27579-3.57757I$
$u=-0.304839-0.148400I$ $a=-2.69539+2.93324I$ $b=-1.106190-0.314015I$	$9.52500-1.85705I$	$11.27579+3.57757I$
$u=-1.96080$ $a=-0.442320$ $b=-2.57571$	0.159689	0
$u=2.12584+1.15390I$ $a=0.284547-0.184165I$ $b=2.73378+1.49880I$	$4.20365-2.92004I$	0
$u=2.12584-1.15390I$ $a=0.284547+0.184165I$ $b=2.73378-1.49880I$	$4.20365+2.92004I$	0

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_{12}	$(u^{35}+2u^{34}+\cdots-28u^2-1)(u^{140}+u^{139}+\cdots+111u-19)$
c_2	$(u^{35}+u^{32}+\cdots-3u+1)(u^{140}+u^{139}+\cdots-47u^2+1)$
c_3	$(u^{35}-2u^{34}+\cdots+2u+1)(u^{140}-u^{139}+\cdots+332003u-96293)$
c_4	$(u^{35}-2u^{34}+\cdots-48u+16)$ $\cdot(u^{140}-u^{139}+\cdots+119685000u-24250000)$
c_5	$(u^{35}-2u^{34}+\cdots+28u^2+1)(u^{140}+u^{139}+\cdots+111u-19)$
c_6	$(u^{35}+3u^{33}+\cdots+14u+1)(u^{140}-7u^{139}+\cdots-1123u-3431)$
c_7	$(u^{35}+u^{34}+\cdots-16u^2+1)(u^{140}-2u^{139}+\cdots-1204155u+99181)$
c_8	$(u^{35}-5u^{34}+\cdots-8u+1)(u^{140}-40u^{138}+\cdots-17417u+6031)$
c_9	$(u^{35}+2u^{34}+\cdots+2u-1)(u^{140}-u^{139}+\cdots+332003u-96293)$
c_{10}	$(u^{35}+4u^{34}+\cdots-8u-1)$ $\cdot(u^{140}+3u^{139}+\cdots+206177531u-17678239)$
c_{11}	$(u^{35}+5u^{34}+\cdots-8u-1)(u^{140}-40u^{138}+\cdots-17417u+6031)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_{12}	$(y^{35}+38y^{34}+\cdots-56y-1)(y^{140}+141y^{139}+\cdots-5101y+361)$
c_2	$(y^{35}+36y^{33}+\cdots+101y-1)(y^{140}+3y^{139}+\cdots-94y+1)$
c_3, c_9	$(y^{35}+20y^{34}+\cdots+6y-1)$ $\cdot(y^{140}+87y^{139}+\cdots+397864600249y+9272341849)$
c_4	$(y^{35}+4y^{34}+\cdots-2304y-256)$ $\cdot(y^{140}+59y^{139}+\cdots+5616721975000000y+588062500000000)$
c_6	$(y^{35}+6y^{34}+\cdots+24y-1)$ $\cdot(y^{140}+13y^{139}+\cdots+1031428699y+11771761)$
c_7	$(y^{35}+15y^{34}+\cdots+32y-1)$ $\cdot(y^{140}-10y^{139}+\cdots-3523667595645y+9836870761)$
c_8, c_{11}	$(y^{35}-15y^{34}+\cdots+30y-1)$ $\cdot(y^{140}-80y^{139}+\cdots-39061407y+36372961)$
c_{10}	$(y^{35}-14y^{34}+\cdots+12y-1)$ $\cdot(y^{140}+33y^{139}+\cdots+7961914991781171y+312520134141121)$