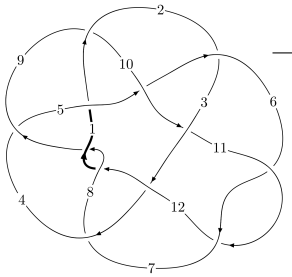
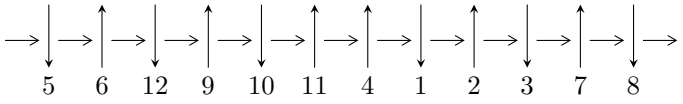
$12a_{1249}$ $(K12a_{1249})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 1.05880 \times 10^{1211} u^{151} + 2.26006 \times 10^{1211} u^{150} + \cdots + 1.94891 \times 10^{1209} b - 1.10493 \times 10^{1216}, \\ & 1.10741 \times 10^{1217} u^{151} + 1.41825 \times 10^{1217} u^{150} + \cdots + 7.44939 \times 10^{1212} a - 5.29595 \times 10^{1221}, \\ & 3u^{152} + 6u^{151} + \cdots - 1329546u - 103203 \rangle \\ I_2^u = \langle & 3.30965 \times 10^{20} u^{23} + 5.28416 \times 10^{20} u^{22} + \cdots + 1.04360 \times 10^{20} b - 5.11134 \times 10^{20}, \\ & - 1.66263 \times 10^{21} u^{23} - 5.94003 \times 10^{21} u^{22} + \cdots + 1.04360 \times 10^{20} a - 2.53190 \times 10^{21}, \\ & 3u^{24} + 9u^{23} + \cdots + 2u - 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 176 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. $I_1^u = \langle 1.06 \times 10^{1211} u^{151} + 2.26 \times 10^{1211} u^{150} + \cdots + 1.95 \times 10^{1209} b - 1.10 \times 10^{1216},\ 1.11 \times 10^{1217} u^{151} + 1.42 \times 10^{1217} u^{150} + \cdots + 7.45 \times 10^{1212} a - 5.30 \times 10^{1221},\ 3u^{152} + 6u^{151} + \cdots - 1329546u - 103203 \rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -14865.8u^{151} - 19038.5u^{150} + \cdots + 8.17045 \times 10^9 u + 7.10924 \times 10^8 \\ -54.3277u^{151} - 115.965u^{150} + \cdots + 6.09045 \times 10^7 u + 5.66945 \times 10^6 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -7228.80u^{151} - 9303.61u^{150} + \cdots + 4.00373 \times 10^9 u + 3.48737 \times 10^8 \\ 3962.88u^{151} + 5005.33u^{150} + \cdots - 2.13124 \times 10^9 u - 1.84884 \times 10^8 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -20077.4u^{151} - 25717.6u^{150} + \cdots + 1.10380 \times 10^{10} u + 9.60477 \times 10^8 \\ -4996.99u^{151} - 6399.33u^{150} + \cdots + 2.74640 \times 10^9 u + 2.38970 \times 10^8 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -23946.1u^{151} - 30673.4u^{150} + \cdots + 1.31647 \times 10^{10} u + 1.14552 \times 10^9 \\ -13896.0u^{151} - 17802.5u^{150} + \cdots + 7.64182 \times 10^9 u + 6.64983 \times 10^8 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -14920.1u^{151} - 19154.4u^{150} + \cdots + 8.23135 \times 10^9 u + 7.16593 \times 10^8 \\ -54.3277u^{151} - 115.965u^{150} + \cdots + 6.09045 \times 10^7 u + 5.66945 \times 10^6 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 18958.2u^{151} + 24196.5u^{150} + \cdots - 1.03636 \times 10^{10} u - 9.01066 \times 10^8 \\ 8191.77u^{151} + 10493.9u^{150} + \cdots - 4.50345 \times 10^9 u - 3.91854 \times 10^8 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 20806.2u^{151} + 26652.5u^{150} + \cdots - 1.14400 \times 10^{10} u - 9.95476 \times 10^8 \\ 1475.88u^{151} + 1887.91u^{150} + \cdots - 8.09724 \times 10^8 u - 7.04389 \times 10^7 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 9044.11u^{151} + 11595.5u^{150} + \cdots - 4.98013 \times 10^9 u - 4.33451 \times 10^8 \\ -5100.12u^{151} - 6533.52u^{150} + \cdots + 2.80406 \times 10^9 u + 2.43992 \times 10^8 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 17725.7u^{151} + 22622.6u^{150} + \cdots - 9.68954 \times 10^9 u - 8.42479 \times 10^8 \\ 6973.18u^{151} + 8921.17u^{150} + \cdots - 3.82539 \times 10^9 u - 3.32753 \times 10^8 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= -43987.3u^{151} - 56280.9u^{150} + \cdots + 2.41418 \times 10^{10} u + 2.10022 \times 10^9$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$3(3u^{152} - 6u^{151} + \cdots + 1329546u - 103203)$
c_2	$3(3u^{152} + 6u^{151} + \cdots - 1329546u - 103203)$
c_3	$u^{152} + 2u^{151} + \cdots - 654u + 423$
c_4	$u^{152} + 3u^{151} + \cdots + 13u + 1$
c_5	$u^{152} - 9u^{151} + \cdots + 47757u + 7809$
c_6, c_{11}	$3(3u^{152} - 167u^{150} + \cdots - 6u + 1)$
c_7	$u^{152} - 2u^{151} + \cdots + 654u + 423$
c_8, c_{12}	$3(3u^{152} - 167u^{150} + \cdots + 6u + 1)$
c_9	$u^{152} + 9u^{151} + \cdots - 47757u + 7809$
c_{10}	$u^{152} - 3u^{151} + \cdots - 13u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2	$9(9y^{152} - 336y^{151} + \cdots - 7.13600 \times 10^{11}y + 1.06509 \times 10^{10})$
c_3, c_7	$y^{152} - 42y^{151} + \cdots + 3035808y + 178929$
c_4, c_{10}	$y^{152} - 51y^{151} + \cdots - 1445y + 1$
c_5, c_9	$y^{152} - 57y^{151} + \cdots - 11081005509y + 60980481$
c_6, c_8, c_{11} c_{12}	$9(9y^{152} - 1002y^{151} + \cdots - 342y + 1)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.636691+0.751895I$ $a=\ \ 0.25274-1.64629I$ $b=-1.199820+0.107197I$	$-1.45660+1.48786I$	0
$u=-0.636691-0.751895I$ $a=\ \ 0.25274+1.64629I$ $b=-1.199820-0.107197I$	$-1.45660-1.48786I$	0
$u=-0.731220+0.713701I$ $a=-0.664353-0.881719I$ $b=\ \ 0.058799+0.702942I$	$7.30912-0.08952I$	0
$u=-0.731220-0.713701I$ $a=-0.664353+0.881719I$ $b=\ \ 0.058799-0.702942I$	$7.30912+0.08952I$	0
$u=-0.789031+0.535245I$ $a=-1.18743-0.96116I$ $b=-0.618641+0.493754I$	$5.14963-0.61657I$	0
$u=-0.789031-0.535245I$ $a=-1.18743+0.96116I$ $b=-0.618641-0.493754I$	$5.14963+0.61657I$	0
$u=\ \ 0.084639+0.948996I$ $a=\ \ 0.397571+0.845487I$ $b=\ \ 0.161590-0.798278I$	$1.47653-1.54111I$	0
$u=\ \ 0.084639-0.948996I$ $a=\ \ 0.397571-0.845487I$ $b=\ \ 0.161590+0.798278I$	$1.47653+1.54111I$	0
$u=\ \ 0.805693+0.672336I$ $a=-0.458714-0.915392I$ $b=\ \ 1.076740+0.628879I$	$0.04971-3.50428I$	0
$u=\ \ 0.805693-0.672336I$ $a=-0.458714+0.915392I$ $b=\ \ 1.076740-0.628879I$	$0.04971+3.50428I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.945821 + 0.056351I$ $a = -1.15996 + 1.37999I$ $b = -1.171130 + 0.127953I$	$-3.38143 + 3.80820I$	0
$u = 0.945821 - 0.056351I$ $a = -1.15996 - 1.37999I$ $b = -1.171130 - 0.127953I$	$-3.38143 - 3.80820I$	0
$u = -0.852982 + 0.617291I$ $a = 0.57651 + 1.53519I$ $b = 1.163850 - 0.350561I$	$4.05943 + 3.77468I$	0
$u = -0.852982 - 0.617291I$ $a = 0.57651 - 1.53519I$ $b = 1.163850 + 0.350561I$	$4.05943 - 3.77468I$	0
$u = 1.009200 + 0.310926I$ $a = 0.045338 + 1.054200I$ $b = -1.332530 - 0.121288I$	$-4.05943 - 3.77468I$	0
$u = 1.009200 - 0.310926I$ $a = 0.045338 - 1.054200I$ $b = -1.332530 + 0.121288I$	$-4.05943 + 3.77468I$	0
$u = -0.913241 + 0.236199I$ $a = -0.29195 - 1.63189I$ $b = -1.39666 + 0.47368I$	$-2.60387 + 11.50010I$	0
$u = -0.913241 - 0.236199I$ $a = -0.29195 + 1.63189I$ $b = -1.39666 - 0.47368I$	$-2.60387 - 11.50010I$	0
$u = 0.928790 + 0.154523I$ $a = 0.43162 - 3.30454I$ $b = 0.993981 + 0.166281I$	$1.58030 - 0.46294I$	0
$u = 0.928790 - 0.154523I$ $a = 0.43162 + 3.30454I$ $b = 0.993981 - 0.166281I$	$1.58030 + 0.46294I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.066520 + 0.152455I$ $a = 0.555153 - 0.959621I$ $b = 1.294750 - 0.030630I$	$-7.30912 + 0.08952I$	0
$u = 1.066520 - 0.152455I$ $a = 0.555153 + 0.959621I$ $b = 1.294750 + 0.030630I$	$-7.30912 - 0.08952I$	0
$u = 0.495469 + 0.774065I$ $a = 0.010206 - 0.369341I$ $b = -0.96174 + 1.12426I$	$3.39442 - 6.97676I$	0
$u = 0.495469 - 0.774065I$ $a = 0.010206 + 0.369341I$ $b = -0.96174 - 1.12426I$	$3.39442 + 6.97676I$	0
$u = 0.516183 + 0.952324I$ $a = 0.096371 - 1.136120I$ $b = 0.171266 + 0.931919I$	$7.58787 - 6.67654I$	0
$u = 0.516183 - 0.952324I$ $a = 0.096371 + 1.136120I$ $b = 0.171266 - 0.931919I$	$7.58787 + 6.67654I$	0
$u = 0.759634 + 0.512391I$ $a = -0.70862 - 2.12763I$ $b = 1.164990 - 0.017764I$	$-1.02020I$	0
$u = 0.759634 - 0.512391I$ $a = -0.70862 + 2.12763I$ $b = 1.164990 + 0.017764I$	$1.02020I$	0
$u = 1.08633$ $a = 6.50562$ $b = 1.05342$	1.48784	0
$u = -0.880859 + 0.241700I$ $a = 0.39390 + 1.42044I$ $b = 1.45856 - 0.42854I$	$-7.58787 + 6.67654I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.880859-0.241700I$ $a=\ \ 0.39390-1.42044I$ $b=\ \ 1.45856+0.42854I$	$-7.58787-6.67654I$	0
$u=-0.807025+0.728809I$ $a=-0.164578-0.800281I$ $b=-0.106801+1.283040I$	$1.39846+5.82902I$	0
$u=-0.807025-0.728809I$ $a=-0.164578+0.800281I$ $b=-0.106801-1.283040I$	$1.39846-5.82902I$	0
$u=\ \ 0.498989+0.749781I$ $a=\ \ 0.405769+0.535961I$ $b=\ \ 0.159058-0.589326I$	$-1.79018I$	0
$u=\ \ 0.498989-0.749781I$ $a=\ \ 0.405769-0.535961I$ $b=\ \ 0.159058+0.589326I$	$1.79018I$	0
$u=-0.890726+0.645966I$ $a=\ \ 0.425517-1.074820I$ $b=-0.1035150+0.0576443I$	$1.72248+9.63955I$	0
$u=-0.890726-0.645966I$ $a=\ \ 0.425517+1.074820I$ $b=-0.1035150-0.0576443I$	$1.72248-9.63955I$	0
$u=\ \ 1.10899$ $a=\ \ 0.611931$ $b=-0.365730$	-2.37631	0
$u=-0.891587+0.661946I$ $a=\ \ 0.279865+0.850269I$ $b=-0.390414-1.050390I$	$4.91380+5.50279I$	0
$u=-0.891587-0.661946I$ $a=\ \ 0.279865-0.850269I$ $b=-0.390414+1.050390I$	$4.91380-5.50279I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.721286+0.512414I$ $a=-0.226659-0.405159I$ $b=\ \ 1.039650+0.476428I$	$4.19522+0.69390I$	0
$u=-0.721286-0.512414I$ $a=-0.226659+0.405159I$ $b=\ \ 1.039650-0.476428I$	$4.19522-0.69390I$	0
$u=\ \ 0.933420+0.646785I$ $a=\ \ 0.403691+0.631654I$ $b=-0.253039-0.049643I$	$-0.61911-2.78150I$	0
$u=\ \ 0.933420-0.646785I$ $a=\ \ 0.403691-0.631654I$ $b=-0.253039+0.049643I$	$-0.61911+2.78150I$	0
$u=-0.899372+0.694857I$ $a=-0.230688-0.889354I$ $b=\ \ 0.059423+0.929752I$	$2.15753+4.93327I$	0
$u=-0.899372-0.694857I$ $a=-0.230688+0.889354I$ $b=\ \ 0.059423-0.929752I$	$2.15753-4.93327I$	0
$u=\ \ 0.854268+0.758556I$ $a=\ \ 0.285556+0.876813I$ $b=-0.695108-0.641861I$	$-0.22990-2.73957I$	0
$u=\ \ 0.854268-0.758556I$ $a=\ \ 0.285556-0.876813I$ $b=-0.695108+0.641861I$	$-0.22990+2.73957I$	0
$u=-0.816605+0.243167I$ $a=-0.634800-1.109670I$ $b=-1.51259+0.33584I$	$-4.64789+1.50476I$	0
$u=-0.816605-0.243167I$ $a=-0.634800+1.109670I$ $b=-1.51259-0.33584I$	$-4.64789-1.50476I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.843788$ $a=\ \ 0.0325475$ $b=\ \ 1.84418$	-3.40001	0
$u=-0.897255+0.740465I$ $a=-0.393272+0.603493I$ $b=-0.241623+0.009695I$	$-2.15753+4.93327I$	0
$u=-0.897255-0.740465I$ $a=-0.393272-0.603493I$ $b=-0.241623-0.009695I$	$-2.15753-4.93327I$	0
$u=\ \ 0.800657+0.211797I$ $a=-0.01681+2.46647I$ $b=-1.124590-0.178093I$	$-3.05517-0.85011I$	0
$u=\ \ 0.800657-0.211797I$ $a=-0.01681-2.46647I$ $b=-1.124590+0.178093I$	$-3.05517+0.85011I$	0
$u=\ \ 1.160810+0.178463I$ $a=\ \ 0.247574-0.306571I$ $b=-0.282293+0.050532I$	$-2.38361-0.03883I$	0
$u=\ \ 1.160810-0.178463I$ $a=\ \ 0.247574+0.306571I$ $b=-0.282293-0.050532I$	$-2.38361+0.03883I$	0
$u=-0.485978+1.071620I$ $a=\ \ 0.448650+0.443440I$ $b=-0.730761-0.451693I$	$4.84181-4.51668I$	0
$u=-0.485978-1.071620I$ $a=\ \ 0.448650-0.443440I$ $b=-0.730761+0.451693I$	$4.84181+4.51668I$	0
$u=\ \ 0.819600+0.063753I$ $a=-0.249531+1.353600I$ $b=\ \ 0.438924-0.619311I$	$1.45660+1.48786I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.819600 - 0.063753I$ $a = -0.249531 - 1.353600I$ $b = 0.438924 + 0.619311I$	$1.45660 - 1.48786I$	0
$u = -0.925365 + 0.737997I$ $a = 0.344697 + 1.021700I$ $b = 0.188307 - 0.905744I$	$6.86103 + 5.62133I$	0
$u = -0.925365 - 0.737997I$ $a = 0.344697 - 1.021700I$ $b = 0.188307 + 0.905744I$	$6.86103 - 5.62133I$	0
$u = -0.809191$ $a = -1.80913$ $b = 0.118236$	8.08455	0
$u = -0.726709 + 0.354257I$ $a = 1.20067 + 0.75389I$ $b = 0.297738 - 0.279599I$	$2.38361 - 0.03883I$	0
$u = -0.726709 - 0.354257I$ $a = 1.20067 - 0.75389I$ $b = 0.297738 + 0.279599I$	$2.38361 + 0.03883I$	0
$u = -0.787310$ $a = -0.370932$ $b = -1.68866$	-4.12835	0
$u = -0.648727 + 1.033260I$ $a = 0.426711 + 0.104654I$ $b = -1.246010 - 0.324832I$	$3.38143 - 3.80820I$	0
$u = -0.648727 - 1.033260I$ $a = 0.426711 - 0.104654I$ $b = -1.246010 + 0.324832I$	$3.38143 + 3.80820I$	0
$u = -0.737557 + 0.032144I$ $a = -0.84339 - 2.51654I$ $b = -1.236740 - 0.108960I$	$-1.82737 - 10.33300I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.737557-0.032144I$ $a=-0.84339+2.51654I$ $b=-1.236740+0.108960I$	$-1.82737+10.33300I$	0
$u=-0.720495+0.002427I$ $a=\ \ 1.12155+2.01585I$ $b=\ \ 1.288740+0.078429I$	$-6.86103-5.62133I$	0
$u=-0.720495-0.002427I$ $a=\ \ 1.12155-2.01585I$ $b=\ \ 1.288740-0.078429I$	$-6.86103+5.62133I$	0
$u=-0.428344+1.214070I$ $a=-0.287209-0.158425I$ $b=\ \ 1.011590+0.209467I$	$0.61911-2.78150I$	0
$u=-0.428344-1.214070I$ $a=-0.287209+0.158425I$ $b=\ \ 1.011590-0.209467I$	$0.61911+2.78150I$	0
$u=-0.710358+0.032872I$ $a=-1.14133+1.08383I$ $b=-1.372780+0.004924I$	$-4.19522+0.69390I$	0
$u=-0.710358-0.032872I$ $a=-1.14133-1.08383I$ $b=-1.372780-0.004924I$	$-4.19522-0.69390I$	0
$u=\ \ 0.858181+0.965391I$ $a=\ \ 0.001584+1.267320I$ $b=-1.40518-0.41108I$	$2.60387-11.50010I$	0
$u=\ \ 0.858181-0.965391I$ $a=\ \ 0.001584-1.267320I$ $b=-1.40518+0.41108I$	$2.60387+11.50010I$	0
$u=-1.31401$ $a=-0.330378$ $b=\ \ 0.870071$	4.12835	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.350825+0.587374I$ $a=\ \ 1.049160+0.590441I$ $b=\ \ 0.281515-0.543907I$	$1.52906-1.26531I$	0
$u=-0.350825-0.587374I$ $a=\ \ 1.049160-0.590441I$ $b=\ \ 0.281515+0.543907I$	$1.52906+1.26531I$	0
$u=\ \ 0.661940+0.064824I$ $a=-0.32617-1.44844I$ $b=-1.39529+0.73494I$	$-2.13670+3.65468I$	0
$u=\ \ 0.661940-0.064824I$ $a=-0.32617+1.44844I$ $b=-1.39529-0.73494I$	$-2.13670-3.65468I$	0
$u=\ \ 0.043716+0.662779I$ $a=-0.093280+1.139950I$ $b=\ \ 1.138900-0.538085I$	$4.64789-1.50476I$	0
$u=\ \ 0.043716-0.662779I$ $a=-0.093280-1.139950I$ $b=\ \ 1.138900+0.538085I$	$4.64789+1.50476I$	0
$u=\ \ 1.34295$ $a=\ \ 0.560443$ $b=\ \ 1.42045$	-8.08455	0
$u=-1.128690+0.768112I$ $a=-0.249179-1.375290I$ $b=-1.40484+0.40131I$	$1.82737+10.33300I$	0
$u=-1.128690-0.768112I$ $a=-0.249179+1.375290I$ $b=-1.40484-0.40131I$	$1.82737-10.33300I$	0
$u=-0.577775+0.209403I$ $a=\ \ 0.800729-0.650904I$ $b=\ \ 0.104817+1.030250I$	$2.16133-6.12521I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.577775-0.209403I$ $a=\ \ 0.800729+0.650904I$ $b=\ \ 0.104817-1.030250I$	$2.16133+6.12521I$	0
$u=-1.184700+0.730411I$ $a=-0.257040-1.243740I$ $b=-1.083630+0.502462I$	$2.67378+10.96210I$	0
$u=-1.184700-0.730411I$ $a=-0.257040+1.243740I$ $b=-1.083630-0.502462I$	$2.67378-10.96210I$	0
$u=\ \ 1.051740+0.918641I$ $a=-0.241001+0.803338I$ $b=-0.283863-1.172900I$	$5.4746-14.2754I$	0
$u=\ \ 1.051740-0.918641I$ $a=-0.241001-0.803338I$ $b=-0.283863+1.172900I$	$5.4746+14.2754I$	0
$u=\ \ 1.00309+1.01079I$ $a=\ \ 0.143887-0.716339I$ $b=\ \ 0.321664+1.158560I$	$-8.49285I$	0
$u=\ \ 1.00309-1.01079I$ $a=\ \ 0.143887+0.716339I$ $b=\ \ 0.321664-1.158560I$	$8.49285I$	0
$u=-1.20876+0.76953I$ $a=\ \ 0.236739+1.208780I$ $b=\ \ 1.288130-0.403420I$	$-1.72248+9.63955I$	0
$u=-1.20876-0.76953I$ $a=\ \ 0.236739-1.208780I$ $b=\ \ 1.288130+0.403420I$	$-1.72248-9.63955I$	0
$u=\ \ 0.79111+1.20705I$ $a=\ \ 0.361988-0.605250I$ $b=\ \ 0.241067+1.026750I$	$6.32408+6.86986I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.79111 - 1.20705I$ $a = 0.361988 + 0.605250I$ $b = 0.241067 - 1.026750I$	$6.32408 - 6.86986I$	0
$u = 0.245134 + 0.497972I$ $a = 4.11437 + 3.18869I$ $b = -1.368890 - 0.032325I$	$-1.58030 + 0.46294I$	0
$u = 0.245134 - 0.497972I$ $a = 4.11437 - 3.18869I$ $b = -1.368890 + 0.032325I$	$-1.58030 - 0.46294I$	0
$u = 0.93457 + 1.12100I$ $a = -0.090695 - 0.901901I$ $b = 1.284930 + 0.421779I$	$-2.16133 - 6.12521I$	0
$u = 0.93457 - 1.12100I$ $a = -0.090695 + 0.901901I$ $b = 1.284930 - 0.421779I$	$-2.16133 + 6.12521I$	0
$u = 0.04389 + 1.47330I$ $a = -0.294729 - 0.207666I$ $b = 0.962214 + 0.418918I$	$-4.81270I$	0
$u = 0.04389 - 1.47330I$ $a = -0.294729 + 0.207666I$ $b = 0.962214 - 0.418918I$	$4.81270I$	0
$u = 0.519830 + 0.015541I$ $a = 1.24237 + 1.09659I$ $b = 1.73677 - 0.38370I$	$-4.61027 + 0.46725I$	0
$u = 0.519830 - 0.015541I$ $a = 1.24237 - 1.09659I$ $b = 1.73677 + 0.38370I$	$-4.61027 - 0.46725I$	0
$u = -1.28521 + 0.79379I$ $a = 0.226798 + 0.997773I$ $b = 1.43430 - 0.56296I$	$-3.41653 + 12.20260I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.28521-0.79379I$ $a=\ \ 0.226798-0.997773I$ $b=\ \ 1.43430+0.56296I$	$-3.41653-12.20260I$	0
$u=\ \ 0.19157+1.50400I$ $a=-0.212998+0.313651I$ $b=\ \ 1.169330-0.495890I$	$3.41653+12.20260I$	0
$u=\ \ 0.19157-1.50400I$ $a=-0.212998-0.313651I$ $b=\ \ 1.169330+0.495890I$	$3.41653-12.20260I$	0
$u=-0.480973$ $a=\ \ 2.88668$ $b=\ \ 0.106217$	2.37631	0
$u=\ \ 0.117245+0.451249I$ $a=\ \ 0.927082-0.011692I$ $b=-0.996224-0.461130I$	$-1.52906-1.26531I$	0
$u=\ \ 0.117245-0.451249I$ $a=\ \ 0.927082+0.011692I$ $b=-0.996224+0.461130I$	$-1.52906+1.26531I$	0
$u=-0.21205+1.54918I$ $a=-0.0959004-0.0643419I$ $b=\ \ 0.971988-0.072297I$	$0.22990-2.73957I$	0
$u=-0.21205-1.54918I$ $a=-0.0959004+0.0643419I$ $b=\ \ 0.971988+0.072297I$	$0.22990+2.73957I$	0
$u=-0.13587+1.55785I$ $a=\ \ 0.034728-0.286631I$ $b=-1.042460+0.483852I$	$-1.39846+5.82902I$	0
$u=-0.13587-1.55785I$ $a=\ \ 0.034728+0.286631I$ $b=-1.042460-0.483852I$	$-1.39846-5.82902I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.371066+0.192427I$ $a=-0.656278+0.113641I$ $b=-0.661992-0.953986I$	$-1.47653-1.54111I$	0
$u=-0.371066-0.192427I$ $a=-0.656278-0.113641I$ $b=-0.661992+0.953986I$	$-1.47653+1.54111I$	0
$u=0.294221+0.296647I$ $a=-2.84996-2.89345I$ $b=0.098650+0.103619I$	$3.05517+0.85011I$	0
$u=0.294221-0.296647I$ $a=-2.84996+2.89345I$ $b=0.098650-0.103619I$	$3.05517-0.85011I$	0
$u=-1.30497+0.90505I$ $a=0.072952+1.005450I$ $b=1.288790-0.163229I$	$-2.67378+10.96210I$	0
$u=-1.30497-0.90505I$ $a=0.072952-1.005450I$ $b=1.288790+0.163229I$	$-2.67378-10.96210I$	0
$u=1.54013+0.38949I$ $a=-0.693517+0.608948I$ $b=-1.186680-0.066736I$	$-5.14963-0.61657I$	0
$u=1.54013-0.38949I$ $a=-0.693517-0.608948I$ $b=-1.186680+0.066736I$	$-5.14963+0.61657I$	0
$u=-1.39496+0.76782I$ $a=-0.344955-0.821891I$ $b=-1.49499+0.53977I$	$-6.32408+6.86986I$	0
$u=-1.39496-0.76782I$ $a=-0.344955+0.821891I$ $b=-1.49499-0.53977I$	$-6.32408-6.86986I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.41047 + 0.78228I$ $a = 0.211639 - 0.770568I$ $b = 1.229280 + 0.183981I$	$-4.84181 - 4.51668I$	0
$u = 1.41047 - 0.78228I$ $a = 0.211639 + 0.770568I$ $b = 1.229280 - 0.183981I$	$-4.84181 + 4.51668I$	0
$u = 1.37417 + 0.85139I$ $a = 0.320094 - 1.045550I$ $b = 1.47594 + 0.50449I$	$-20.1979I$	0
$u = 1.37417 - 0.85139I$ $a = 0.320094 + 1.045550I$ $b = 1.47594 - 0.50449I$	$20.1979I$	0
$u = -1.05442 + 1.29195I$ $a = -0.182324 + 0.538255I$ $b = 1.077050 + 0.072290I$	$-0.04971 - 3.50428I$	0
$u = -1.05442 - 1.29195I$ $a = -0.182324 - 0.538255I$ $b = 1.077050 - 0.072290I$	$-0.04971 + 3.50428I$	0
$u = 1.42501 + 0.89434I$ $a = -0.291876 + 0.922800I$ $b = -1.45902 - 0.48962I$	$-5.4746 - 14.2754I$	0
$u = 1.42501 - 0.89434I$ $a = -0.291876 - 0.922800I$ $b = -1.45902 + 0.48962I$	$-5.4746 + 14.2754I$	0
$u = 1.60799 + 0.62808I$ $a = -0.464146 + 0.326138I$ $b = -0.298446 - 0.470514I$	$4.61027 + 0.46725I$	0
$u = 1.60799 - 0.62808I$ $a = -0.464146 - 0.326138I$ $b = -0.298446 + 0.470514I$	$4.61027 - 0.46725I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.18179+1.30606I$ $a=\ 0.217129+0.434328I$ $b=\ 0.97255-1.43492I$	$-0.186585-0.003104I$	0
$u=-1.18179-1.30606I$ $a=\ 0.217129-0.434328I$ $b=\ 0.97255+1.43492I$	$-0.186585+0.003104I$	0
$u=-0.235257$ $a=\ 28.2846$ $b=\ 1.43694$	-1.48784	-214.430
$u=\ 1.09372+1.42524I$ $a=\ 0.0429520-0.0111718I$ $b=-1.125440+0.291405I$	$2.13670+3.65468I$	0
$u=\ 1.09372-1.42524I$ $a=\ 0.0429520+0.0111718I$ $b=-1.125440-0.291405I$	$2.13670-3.65468I$	0
$u=-1.56104+0.91702I$ $a=-0.199223-0.718712I$ $b=-1.178620+0.072627I$	$-4.91380+5.50279I$	0
$u=-1.56104-0.91702I$ $a=-0.199223+0.718712I$ $b=-1.178620-0.072627I$	$-4.91380-5.50279I$	0
$u=\ 1.49264+1.04186I$ $a=\ 0.218003-0.701350I$ $b=\ 1.34324+0.52436I$	$-3.39442-6.97676I$	0
$u=\ 1.49264-1.04186I$ $a=\ 0.218003+0.701350I$ $b=\ 1.34324-0.52436I$	$-3.39442+6.97676I$	0
$u=\ 1.15176+1.56674I$ $a=-0.185760+0.438799I$ $b=-1.01883-1.28747I$	$0.186585-0.003104I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.15176 - 1.56674I$ $a = -0.185760 - 0.438799I$ $b = -1.01883 + 1.28747I$	$0.186585 + 0.003104I$	0
$u = -2.00429$ $a = 0.655453$ $b = 1.06906$	3.40001	0

II. $I_2^u = \langle 3.31\times 10^{20}u^{23} + 5.28\times 10^{20}u^{22} + \cdots + 1.04\times 10^{20}b - 5.11\times 10^{20},\ -1.66\times 10^{21}u^{23} - 5.94\times 10^{21}u^{22} + \cdots + 1.04\times 10^{20}a - 2.53\times 10^{21},\ 3u^{24} + 9u^{23} + \cdots + 2u - 1\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 15.9317u^{23} + 56.9188u^{22} + \cdots + 50.9349u + 24.2612 \\ -3.17139u^{23} - 5.06341u^{22} + \cdots - 7.79170u + 4.89781 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 12.1667u^{23} + 46.7699u^{22} + \cdots + 43.9151u + 26.1178 \\ -5.35993u^{23} - 11.5619u^{22} + \cdots - 9.81087u + 5.27989 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -84.1044u^{23} - 268.257u^{22} + \cdots - 263.109u - 112.887 \\ -12.3774u^{23} - 31.9429u^{22} + \cdots - 27.4410u - 3.91123 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -78.1968u^{23} - 259.494u^{22} + \cdots - 248.256u - 114.772 \\ -2.80662u^{23} - 9.38843u^{22} + \cdots - 12.2811u - 7.81972 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 12.7603u^{23} + 51.8554u^{22} + \cdots + 43.1432u + 29.1590 \\ -3.17139u^{23} - 5.06341u^{22} + \cdots - 7.79170u + 4.89781 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 429.521u^{23} + 1390.96u^{22} + \cdots + 1349.20u + 600.421 \\ 22.3874u^{23} + 79.4556u^{22} + \cdots + 71.7367u + 44.7039 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -16.8085u^{23} - 58.6731u^{22} + \cdots - 76.3822u - 33.7916 \\ 6.65068u^{23} + 14.5110u^{22} + \cdots + 10.5808u - 5.87098 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -77.3125u^{23} - 263.827u^{22} + \cdots - 267.815u - 134.829 \\ 5.87064u^{23} + 7.58330u^{22} + \cdots + 1.87252u - 14.4510 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -467.874u^{23} - 1518.35u^{22} + \cdots - 1480.70u - 676.607 \\ -27.2142u^{23} - 92.5923u^{22} + \cdots - 98.1327u - 45.7951 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{15567420443266398355}{8484533307115783 63}u^{23} + \frac{65978204663978426720}{848453330711578363}u^{22} + \cdots + \frac{2549471203821312855 22}{2545359992134735089}u + \frac{744549495888760097 60}{848453330711578363}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$3(3u^{24}+9u^{23}+\cdots+2u-1)$
c_2	$3(3u^{24}-9u^{23}+\cdots-2u-1)$
c_3	$u^{24}-u^{23}+\cdots-18u-9$
c_4	$u^{24}+10u^{23}+\cdots+9u-1$
c_5	$u^{24}+6u^{23}+\cdots-9u+3$
c_6, c_{12}	$3(3u^{24}+3u^{23}+\cdots+8u+1)$
c_7	$u^{24}+u^{23}+\cdots+18u-9$
c_8, c_{11}	$3(3u^{24}-3u^{23}+\cdots-8u+1)$
c_9	$u^{24}-6u^{23}+\cdots+9u+3$
c_{10}	$u^{24}-10u^{23}+\cdots-9u-1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2	$9(9y^{24} - 81y^{23} + \cdots - 44y + 1)$
c_3, c_7	$y^{24} - 31y^{23} + \cdots - 1836y + 81$
c_4, c_{10}	$y^{24} - 52y^{23} + \cdots - 45y + 1$
c_5, c_9	$y^{24} - 34y^{23} + \cdots - 333y + 9$
c_6, c_8, c_{11} c_{12}	$9(9y^{24} - 207y^{23} + \cdots - 66y + 1)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.04789$ $a = -0.925033$ $b = -1.53325$	-5.45173	-9.59660
$u = 0.546418 + 0.906679I$ $a = 0.596614 + 0.410769I$ $b = -0.904773 - 0.576576I$	$-0.53851 - 4.24994I$	$-5.32479 + 8.26548I$
$u = 0.546418 - 0.906679I$ $a = 0.596614 - 0.410769I$ $b = -0.904773 + 0.576576I$	$-0.53851 + 4.24994I$	$-5.32479 - 8.26548I$
$u = 1.12745$ $a = 4.80711$ $b = 1.06362$	1.45673	-68.9920
$u = -0.578836 + 0.635036I$ $a = -0.180197 + 0.891009I$ $b = -0.452678 - 1.180190I$	$2.77736 + 7.43256I$	$0.14610 - 11.47542I$
$u = -0.578836 - 0.635036I$ $a = -0.180197 - 0.891009I$ $b = -0.452678 + 1.180190I$	$2.77736 - 7.43256I$	$0.14610 + 11.47542I$
$u = -1.18493$ $a = 1.42839$ $b = 0.831797$	7.07081	3.06130
$u = -0.935868 + 0.811428I$ $a = 0.28657 - 1.38912I$ $b = -1.262640 + 0.383347I$	$12.3496I$	$0. - 10.50236I$
$u = -0.935868 - 0.811428I$ $a = 0.28657 + 1.38912I$ $b = -1.262640 - 0.383347I$	$-12.3496I$	$0. + 10.50236I$
$u = 1.23939$ $a = 0.513474$ $b = -0.172421$	-2.21492	24.7010

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.720101$ $a=\ \ 0.181109$ $b=\ \ 1.91865$	-5.22254	-15.1140
$u=-0.706085$ $a=-1.91610$ $b=-0.400432$	2.21492	-24.7010
$u=\ \ 0.654088+0.146391I$ $a=-0.30593+2.16296I$ $b=-1.235470-0.282184I$	$-2.75396-0.98283I$	$0.959986-0.433541I$
$u=\ \ 0.654088-0.146391I$ $a=-0.30593-2.16296I$ $b=-1.235470+0.282184I$	$-2.75396+0.98283I$	$0.959986+0.433541I$
$u=\ \ 0.514095+0.366995I$ $a=\ \ 1.10106+1.32645I$ $b=\ \ 0.453363+0.040651I$	$2.75396+0.98283I$	$-0.959986+0.433541I$
$u=\ \ 0.514095-0.366995I$ $a=\ \ 1.10106-1.32645I$ $b=\ \ 0.453363-0.040651I$	$2.75396-0.98283I$	$-0.959986-0.433541I$
$u=\ \ 1.53908$ $a=\ \ 0.460925$ $b=\ \ 1.39354$	-7.07081	-3.06130
$u=-0.60614+1.60306I$ $a=\ \ 0.157800+0.018712I$ $b=-1.027200-0.271189I$	$0.53851-4.24994I$	$5.32479+8.26548I$
$u=-0.60614-1.60306I$ $a=\ \ 0.157800-0.018712I$ $b=-1.027200+0.271189I$	$0.53851+4.24994I$	$5.32479-8.26548I$
$u=-0.265637$ $a=-3.45975$ $b=\ \ 1.26748$	5.45173	9.59660

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.29290+1.17328I$ $a=\ 0.024853+0.716678I$ $b=\ 1.199880-0.480769I$	$-2.77736+7.43256I$	$0.-11.47542I$
$u=-1.29290-1.17328I$ $a=\ 0.024853-0.716678I$ $b=\ 1.199880+0.480769I$	$-2.77736-7.43256I$	$0.+11.47542I$
$u=\ 0.236826$ $a=\ 21.0401$ $b=\ 1.45039$	-1.45673	68.9920
$u=-1.91558$ $a=-0.491834$ $b=-0.360339$	5.22254	15.1140

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$9(3u^{24}+9u^{23}+\cdots+2u-1)$ $\cdot(3u^{152}-6u^{151}+\cdots+1329546u-103203)$
c_2	$9(3u^{24}-9u^{23}+\cdots-2u-1)$ $\cdot(3u^{152}+6u^{151}+\cdots-1329546u-103203)$
c_3	$(u^{24}-u^{23}+\cdots-18u-9)(u^{152}+2u^{151}+\cdots-654u+423)$
c_4	$(u^{24}+10u^{23}+\cdots+9u-1)(u^{152}+3u^{151}+\cdots+13u+1)$
c_5	$(u^{24}+6u^{23}+\cdots-9u+3)(u^{152}-9u^{151}+\cdots+47757u+7809)$
c_6	$9(3u^{24}+3u^{23}+\cdots+8u+1)(3u^{152}-167u^{150}+\cdots-6u+1)$
c_7	$(u^{24}+u^{23}+\cdots+18u-9)(u^{152}-2u^{151}+\cdots+654u+423)$
c_8	$9(3u^{24}-3u^{23}+\cdots-8u+1)(3u^{152}-167u^{150}+\cdots+6u+1)$
c_9	$(u^{24}-6u^{23}+\cdots+9u+3)(u^{152}+9u^{151}+\cdots-47757u+7809)$
c_{10}	$(u^{24}-10u^{23}+\cdots-9u-1)(u^{152}-3u^{151}+\cdots-13u+1)$
c_{11}	$9(3u^{24}-3u^{23}+\cdots-8u+1)(3u^{152}-167u^{150}+\cdots-6u+1)$
c_{12}	$9(3u^{24}+3u^{23}+\cdots+8u+1)(3u^{152}-167u^{150}+\cdots+6u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2	$81(9y^{24} - 81y^{23} + \cdots - 44y + 1)$ $\cdot (9y^{152} - 336y^{151} + \cdots - 713599828776y + 10650859209)$
c_3, c_7	$(y^{24} - 31y^{23} + \cdots - 1836y + 81)$ $\cdot (y^{152} - 42y^{151} + \cdots + 3035808y + 178929)$
c_4, c_{10}	$(y^{24} - 52y^{23} + \cdots - 45y + 1)(y^{152} - 51y^{151} + \cdots - 1445y + 1)$
c_5, c_9	$(y^{24} - 34y^{23} + \cdots - 333y + 9)$ $\cdot (y^{152} - 57y^{151} + \cdots - 11081005509y + 60980481)$
c_6, c_8, c_{11} c_{12}	$81(9y^{24} - 207y^{23} + \cdots - 66y + 1)(9y^{152} - 1002y^{151} + \cdots - 342y + 1)$