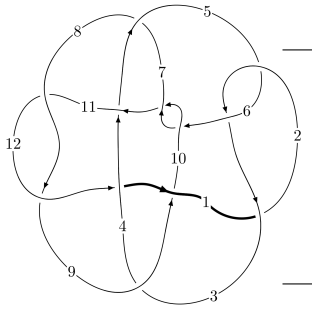
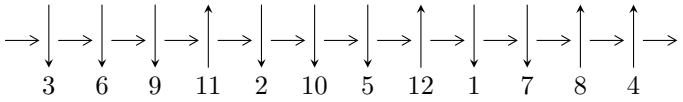
$12a_{0390}$ $(K12a_{0390})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle 5.37418 \times 10^{750} u^{144} - 4.27866 \times 10^{751} u^{143} + \cdots + 3.05104 \times 10^{751} b + 1.85665 \times 10^{755}, \\
&\quad 1.01579 \times 10^{754} u^{144} - 8.04515 \times 10^{754} u^{143} + \cdots + 3.45683 \times 10^{754} a + 3.40763 \times 10^{758}, \\
&\quad u^{145} - 9u^{144} + \cdots + 376000u - 36256 \rangle \\
I_2^u &= \langle -1009040883105882 u^{27} - 1315626392337378 u^{26} + \cdots + 68752247482895 b - 3458158094392594, \\
&\quad - 901563901956276 u^{27} - 1137559180351494 u^{26} + \cdots + 68752247482895 a - 2992698774862172, \\
&\quad u^{28} + u^{27} + \cdots + 4u - 1 \rangle \\
I_3^u &= \langle b + 1,\ 4a^2 + 6a - u + 4,\ u^2 - 2 \rangle \\
I_4^u &= \langle 13787 a^8 + 73187 b + \cdots + 77516 a + 215532,\ a^9 - 5a^7 + 23a^5 + 20a^4 - 12a^3 - 10a^2 + 19a + 11, \\
&\quad u + 1 \rangle \\
I_1^v &= \langle a,\ b + 1,\ v - 1 \rangle
\end{aligned}$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 187 representations.

[1]The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

[2]All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I. $\boldsymbol{I_1^u = \langle 5.37 \times 10^{750} u^{144} - 4.28 \times 10^{751} u^{143} + \cdots + 3.05 \times 10^{751} b + 1.86 \times 10^{755},\ 1.02 \times 10^{754} u^{144} - 8.05 \times 10^{754} u^{143} + \cdots + 3.46 \times 10^{754} a + 3.41 \times 10^{758},\ u^{145} - 9u^{144} + \cdots + 376000u - 36256 \rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.293851u^{144} + 2.32732u^{143} + \cdots + 93139.9u - 9857.66 \\ -0.176142u^{144} + 1.40236u^{143} + \cdots + 57359.9u - 6085.29 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.469994u^{144} + 3.72968u^{143} + \cdots + 150500.u - 15943.0 \\ -0.176142u^{144} + 1.40236u^{143} + \cdots + 57359.9u - 6085.29 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.0648032u^{144} + 0.499840u^{143} + \cdots + 17482.0u - 1820.92 \\ -0.536244u^{144} + 4.22100u^{143} + \cdots + 163169.u - 17200.5 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.158282u^{144} + 1.27149u^{143} + \cdots + 54189.4u - 5772.13 \\ 0.0630524u^{144} - 0.460147u^{143} + \cdots - 10118.6u + 963.721 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.274941u^{144} - 2.19571u^{143} + \cdots - 91792.3u + 9764.90 \\ 0.0105693u^{144} - 0.0829171u^{143} + \cdots - 3248.37u + 345.877 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.272586u^{144} + 2.14330u^{143} + \cdots + 81770.6u - 8595.38 \\ -0.0292223u^{144} + 0.263055u^{143} + \cdots + 17159.3u - 1902.46 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.216468u^{144} - 1.69100u^{143} + \cdots - 61808.0u + 6459.95 \\ -0.0772742u^{144} + 0.598026u^{143} + \cdots + 21009.7u - 2186.39 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.00595126u^{144} - 0.0196957u^{143} + \cdots + 5443.92u - 657.298 \\ -0.0957945u^{144} + 0.751906u^{143} + \cdots + 28689.4u - 3022.09 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2.18489u^{144} + 17.3876u^{143} + \cdots + 710362.u - 75357.2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{145} + 60u^{144} + \cdots + 69806531u + 3066001$
c_2, c_5	$u^{145} - 30u^{143} + \cdots - 5817u + 1751$
c_3	$2(2u^{145} - 2u^{144} + \cdots - 8207989u + 1252007)$
c_4	$2(2u^{145} + 6u^{144} + \cdots - 58u - 1)$
c_6, c_{10}	$u^{145} - 9u^{144} + \cdots + 376000u - 36256$
c_7	$u^{145} - 10u^{144} + \cdots - 13808u + 958$
c_8, c_{11}	$u^{145} - u^{144} + \cdots - 402u + 9$
c_9	$u^{145} + 7u^{144} + \cdots - 2484u + 124$
c_{12}	$u^{145} + 14u^{144} + \cdots + 324u + 122$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{145} + 52y^{144} + \cdots - 76219022336469y - 9400362132001$
c_2, c_5	$y^{145} - 60y^{144} + \cdots + 69806531y - 3066001$
c_3	$4(4y^{145} + 224y^{144} + \cdots - 3.85023 \times 10^{13}y - 1.56752 \times 10^{12})$
c_4	$4(4y^{145} + 80y^{144} + \cdots + 1062y - 1)$
c_6, c_{10}	$y^{145} - 99y^{144} + \cdots - 18148659712y - 1314497536$
c_7	$y^{145} + 24y^{144} + \cdots - 104405052y - 917764$
c_8, c_{11}	$y^{145} - 111y^{144} + \cdots + 29430y - 81$
c_9	$y^{145} - 17y^{144} + \cdots + 17645216y - 15376$
c_{12}	$y^{145} - 2y^{144} + \cdots - 585788y - 14884$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.983060 + 0.090094I$ $a = 2.13665 + 1.88345I$ $b = 0.858935 - 0.384607I$	$1.62861 - 5.53148I$	0
$u = 0.983060 - 0.090094I$ $a = 2.13665 - 1.88345I$ $b = 0.858935 + 0.384607I$	$1.62861 + 5.53148I$	0
$u = -0.685449 + 0.758061I$ $a = 0.427863 + 1.187920I$ $b = 0.598913 - 0.804263I$	$5.68349 + 0.09462I$	0
$u = -0.685449 - 0.758061I$ $a = 0.427863 - 1.187920I$ $b = 0.598913 + 0.804263I$	$5.68349 - 0.09462I$	0
$u = 0.254251 + 0.937529I$ $a = 0.89791 + 1.30032I$ $b = -0.888302 - 0.707889I$	$6.32851 + 0.10858I$	0
$u = 0.254251 - 0.937529I$ $a = 0.89791 - 1.30032I$ $b = -0.888302 + 0.707889I$	$6.32851 - 0.10858I$	0
$u = 0.713038 + 0.747574I$ $a = -0.790441 + 0.231774I$ $b = 0.857271 + 0.045849I$	$1.34056 - 7.92861I$	0
$u = 0.713038 - 0.747574I$ $a = -0.790441 - 0.231774I$ $b = 0.857271 - 0.045849I$	$1.34056 + 7.92861I$	0
$u = 0.811575 + 0.514492I$ $a = 0.53915 + 1.35311I$ $b = 0.605411 - 0.223383I$	$1.75716 + 3.74479I$	0
$u = 0.811575 - 0.514492I$ $a = 0.53915 - 1.35311I$ $b = 0.605411 + 0.223383I$	$1.75716 - 3.74479I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.897025 + 0.529202I$ $a = -0.331859 - 0.105549I$ $b = 0.735731 - 0.625405I$	$4.30487 + 1.12753I$	0
$u = 0.897025 - 0.529202I$ $a = -0.331859 + 0.105549I$ $b = 0.735731 + 0.625405I$	$4.30487 - 1.12753I$	0
$u = -0.517746 + 0.906672I$ $a = -0.545481 - 0.539143I$ $b = 1.038390 + 0.664944I$	$4.34586 - 5.42296I$	0
$u = -0.517746 - 0.906672I$ $a = -0.545481 + 0.539143I$ $b = 1.038390 - 0.664944I$	$4.34586 + 5.42296I$	0
$u = -1.050360 + 0.161995I$ $a = 0.51067 + 2.23058I$ $b = 1.040340 - 0.654724I$	$-2.96212 + 5.40060I$	0
$u = -1.050360 - 0.161995I$ $a = 0.51067 - 2.23058I$ $b = 1.040340 + 0.654724I$	$-2.96212 - 5.40060I$	0
$u = -0.805102 + 0.476131I$ $a = -0.598161 - 0.563764I$ $b = 0.356213 + 1.008710I$	$5.20952 + 4.67407I$	0
$u = -0.805102 - 0.476131I$ $a = -0.598161 + 0.563764I$ $b = 0.356213 - 1.008710I$	$5.20952 - 4.67407I$	0
$u = -0.882698 + 0.612745I$ $a = 1.071400 + 0.504659I$ $b = -0.768499 - 0.480559I$	$-0.650607 + 0.239775I$	0
$u = -0.882698 - 0.612745I$ $a = 1.071400 - 0.504659I$ $b = -0.768499 + 0.480559I$	$-0.650607 - 0.239775I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.072310+0.173522I$ $a=\ \ 0.034423-0.580747I$ $b=-0.425481+1.312410I$	$2.71130+6.68388I$	0
$u=-1.072310-0.173522I$ $a=\ \ 0.034423+0.580747I$ $b=-0.425481-1.312410I$	$2.71130-6.68388I$	0
$u=\ \ 1.082880+0.160074I$ $a=\ \ 0.188167+0.739468I$ $b=-0.499543-0.904517I$	$-2.70646-3.57717I$	0
$u=\ \ 1.082880-0.160074I$ $a=\ \ 0.188167-0.739468I$ $b=-0.499543+0.904517I$	$-2.70646+3.57717I$	0
$u=\ \ 0.891059+0.068423I$ $a=-0.285409-1.230440I$ $b=\ \ 0.924124+0.930627I$	$5.54059-3.39336I$	0
$u=\ \ 0.891059-0.068423I$ $a=-0.285409+1.230440I$ $b=\ \ 0.924124-0.930627I$	$5.54059+3.39336I$	0
$u=\ \ 0.222169+0.852674I$ $a=-0.642834+0.938742I$ $b=\ \ 1.010100-0.613224I$	$1.75366+4.60471I$	0
$u=\ \ 0.222169-0.852674I$ $a=-0.642834-0.938742I$ $b=\ \ 1.010100+0.613224I$	$1.75366-4.60471I$	0
$u=\ \ 1.091750+0.259485I$ $a=\ \ 1.028000-0.914616I$ $b=\ \ 0.914032+0.618678I$	$3.76788-3.76551I$	0
$u=\ \ 1.091750-0.259485I$ $a=\ \ 1.028000+0.914616I$ $b=\ \ 0.914032-0.618678I$	$3.76788+3.76551I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.388134 + 0.782870I$ $a = 0.386454 - 0.846415I$ $b = 0.174351 + 0.409736I$	$2.48869 + 1.37898I$	0
$u = 0.388134 - 0.782870I$ $a = 0.386454 + 0.846415I$ $b = 0.174351 - 0.409736I$	$2.48869 - 1.37898I$	0
$u = 1.122820 + 0.087405I$ $a = -0.609964 + 1.068290I$ $b = -1.187300 - 0.657079I$	$-4.77701 - 2.45139I$	0
$u = 1.122820 - 0.087405I$ $a = -0.609964 - 1.068290I$ $b = -1.187300 + 0.657079I$	$-4.77701 + 2.45139I$	0
$u = 1.065620 + 0.364968I$ $a = -0.485814 + 0.394476I$ $b = 0.367234 - 0.928765I$	$0.92008 - 3.52870I$	0
$u = 1.065620 - 0.364968I$ $a = -0.485814 - 0.394476I$ $b = 0.367234 + 0.928765I$	$0.92008 + 3.52870I$	0
$u = -0.020658 + 1.128840I$ $a = 0.14589 - 1.41304I$ $b = -0.614229 + 0.797164I$	$7.05249 - 7.91380I$	0
$u = -0.020658 - 1.128840I$ $a = 0.14589 + 1.41304I$ $b = -0.614229 - 0.797164I$	$7.05249 + 7.91380I$	0
$u = -0.745702 + 0.850929I$ $a = -0.204447 - 0.338471I$ $b = 0.784925 + 0.090674I$	$-2.54065 + 2.41226I$	0
$u = -0.745702 - 0.850929I$ $a = -0.204447 + 0.338471I$ $b = 0.784925 - 0.090674I$	$-2.54065 - 2.41226I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.140260 + 0.090079I$ $a = -0.760401 + 0.140342I$ $b = 0.370111 - 0.802407I$	$0.41878 - 4.86981I$	0
$u = 1.140260 - 0.090079I$ $a = -0.760401 - 0.140342I$ $b = 0.370111 + 0.802407I$	$0.41878 + 4.86981I$	0
$u = -1.16430$ $a = -0.916535$ $b = -1.55885$	-2.35115	0
$u = 0.151303 + 0.819847I$ $a = -0.33031 - 1.37740I$ $b = 1.005360 + 0.727730I$	$6.54392 - 5.53486I$	0
$u = 0.151303 - 0.819847I$ $a = -0.33031 + 1.37740I$ $b = 1.005360 - 0.727730I$	$6.54392 + 5.53486I$	0
$u = -1.041960 + 0.548317I$ $a = 0.53446 + 1.47256I$ $b = 1.199300 - 0.678298I$	$2.66277 + 10.75610I$	0
$u = -1.041960 - 0.548317I$ $a = 0.53446 - 1.47256I$ $b = 1.199300 + 0.678298I$	$2.66277 - 10.75610I$	0
$u = -1.144180 + 0.280710I$ $a = -0.52536 - 1.89176I$ $b = -1.010730 + 0.507563I$	$-3.26054 + 4.10580I$	0
$u = -1.144180 - 0.280710I$ $a = -0.52536 + 1.89176I$ $b = -1.010730 - 0.507563I$	$-3.26054 - 4.10580I$	0
$u = 1.18550$ $a = -0.763855$ $b = -1.37910$	-5.52230	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.195690 + 0.166098I$ $a = 0.07704 + 1.68510I$ $b = -0.885702 - 0.531747I$	$-3.13450 - 2.17134I$	0
$u = 1.195690 - 0.166098I$ $a = 0.07704 - 1.68510I$ $b = -0.885702 + 0.531747I$	$-3.13450 + 2.17134I$	0
$u = 0.147231 + 0.776960I$ $a = 0.04260 - 2.01983I$ $b = -0.837232 + 0.751778I$	$6.51195 + 5.65463I$	0
$u = 0.147231 - 0.776960I$ $a = 0.04260 + 2.01983I$ $b = -0.837232 - 0.751778I$	$6.51195 - 5.65463I$	0
$u = 0.401631 + 0.679622I$ $a = 0.10653 - 1.43292I$ $b = 0.607703 + 0.710606I$	$2.97272 - 0.48461I$	0
$u = 0.401631 - 0.679622I$ $a = 0.10653 + 1.43292I$ $b = 0.607703 - 0.710606I$	$2.97272 + 0.48461I$	0
$u = 1.191400 + 0.220075I$ $a = 1.02025 - 1.77251I$ $b = 1.126050 + 0.612022I$	$-1.78712 - 10.16790I$	0
$u = 1.191400 - 0.220075I$ $a = 1.02025 + 1.77251I$ $b = 1.126050 - 0.612022I$	$-1.78712 + 10.16790I$	0
$u = -0.072552 + 0.782684I$ $a = -0.349628 + 1.314310I$ $b = 0.668772 - 0.847851I$	$7.56826 + 0.30824I$	0
$u = -0.072552 - 0.782684I$ $a = -0.349628 - 1.314310I$ $b = 0.668772 + 0.847851I$	$7.56826 - 0.30824I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.128570+0.485023I$ $a=-1.04988-1.87414I$ $b=-0.910652+0.519441I$	$-1.11152+4.37732I$	0
$u=-1.128570-0.485023I$ $a=-1.04988+1.87414I$ $b=-0.910652-0.519441I$	$-1.11152-4.37732I$	0
$u=0.095858+1.241060I$ $a=0.22271+1.49312I$ $b=-0.674538-0.650534I$	$1.47619+2.13178I$	0
$u=0.095858-1.241060I$ $a=0.22271-1.49312I$ $b=-0.674538+0.650534I$	$1.47619-2.13178I$	0
$u=0.197748+1.255820I$ $a=-0.268541+0.928652I$ $b=0.954939-0.502519I$	$0.95875+4.85612I$	0
$u=0.197748-1.255820I$ $a=-0.268541-0.928652I$ $b=0.954939+0.502519I$	$0.95875-4.85612I$	0
$u=-1.213160+0.408995I$ $a=-0.360762-0.243484I$ $b=0.400987+0.946443I$	$4.07967+4.04266I$	0
$u=-1.213160-0.408995I$ $a=-0.360762+0.243484I$ $b=0.400987-0.946443I$	$4.07967-4.04266I$	0
$u=1.223850+0.423966I$ $a=0.72684-1.43560I$ $b=1.159680+0.644217I$	$-1.45588-9.25214I$	0
$u=1.223850-0.423966I$ $a=0.72684+1.43560I$ $b=1.159680-0.644217I$	$-1.45588+9.25214I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.667302+0.203508I$ $a=-1.36130+1.03136I$ $b=\ \ 0.909212+0.467787I$	$-1.81635-3.73460I$	0
$u=-0.667302-0.203508I$ $a=-1.36130-1.03136I$ $b=\ \ 0.909212-0.467787I$	$-1.81635+3.73460I$	0
$u=\ \ 0.134120+1.295810I$ $a=\ \ 0.426303+1.227870I$ $b=-1.033780-0.669869I$	$5.7731-13.4390I$	0
$u=\ \ 0.134120-1.295810I$ $a=\ \ 0.426303-1.227870I$ $b=-1.033780+0.669869I$	$5.7731+13.4390I$	0
$u=\ \ 1.263880+0.347113I$ $a=-0.435669-0.253457I$ $b=-1.271320+0.282733I$	$-4.64492-2.87820I$	0
$u=\ \ 1.263880-0.347113I$ $a=-0.435669+0.253457I$ $b=-1.271320-0.282733I$	$-4.64492+2.87820I$	0
$u=\ \ 1.196060+0.552992I$ $a=\ \ 0.748770+0.074311I$ $b=-0.754108+0.572872I$	$3.40962-5.46166I$	0
$u=\ \ 1.196060-0.552992I$ $a=\ \ 0.748770-0.074311I$ $b=-0.754108-0.572872I$	$3.40962+5.46166I$	0
$u=-0.163988+0.661489I$ $a=\ \ 1.64018+1.79230I$ $b=-0.962143-0.280015I$	$-0.361799-0.690892I$	0
$u=-0.163988-0.661489I$ $a=\ \ 1.64018-1.79230I$ $b=-0.962143+0.280015I$	$-0.361799+0.690892I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.113060+0.715277I$ $a=\ \ 0.739715+1.048430I$ $b=-0.673595-0.730560I$	$-0.344412+1.034890I$	0
$u=-1.113060-0.715277I$ $a=\ \ 0.739715-1.048430I$ $b=-0.673595+0.730560I$	$-0.344412-1.034890I$	0
$u=\ \ 1.322570+0.039753I$ $a=-1.117680+0.298273I$ $b=-1.233860+0.200738I$	$-4.69333-1.90088I$	0
$u=\ \ 1.322570-0.039753I$ $a=-1.117680-0.298273I$ $b=-1.233860-0.200738I$	$-4.69333+1.90088I$	0
$u=\ \ 1.202510+0.570331I$ $a=-0.353545+0.664942I$ $b=\ \ 0.189724-0.795449I$	$-0.02933-6.64809I$	0
$u=\ \ 1.202510-0.570331I$ $a=-0.353545-0.664942I$ $b=\ \ 0.189724+0.795449I$	$-0.02933+6.64809I$	0
$u=\ \ 1.286650+0.403088I$ $a=-1.41755+1.36786I$ $b=-0.927742-0.564801I$	$2.85902-10.00570I$	0
$u=\ \ 1.286650-0.403088I$ $a=-1.41755-1.36786I$ $b=-0.927742+0.564801I$	$2.85902+10.00570I$	0
$u=-1.354830+0.043354I$ $a=-1.020840-0.838053I$ $b=-0.971571-0.166745I$	$-6.45997-0.55941I$	0
$u=-1.354830-0.043354I$ $a=-1.020840+0.838053I$ $b=-0.971571+0.166745I$	$-6.45997+0.55941I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.349680+0.132285I$ $a=-0.208976-0.975259I$ $b=-1.060970+0.900995I$	$0.48168+3.59119I$	0
$u=-1.349680-0.132285I$ $a=-0.208976+0.975259I$ $b=-1.060970-0.900995I$	$0.48168-3.59119I$	0
$u=-1.254560+0.522994I$ $a=-0.213295-0.748929I$ $b=\ \ 0.339254+0.625085I$	$-3.15308+1.99288I$	0
$u=-1.254560-0.522994I$ $a=-0.213295+0.748929I$ $b=\ \ 0.339254-0.625085I$	$-3.15308-1.99288I$	0
$u=-1.339420+0.290116I$ $a=\ \ 0.611052+0.186561I$ $b=\ \ 1.365420-0.069213I$	$-4.43721+10.90670I$	0
$u=-1.339420-0.290116I$ $a=\ \ 0.611052-0.186561I$ $b=\ \ 1.365420+0.069213I$	$-4.43721-10.90670I$	0
$u=-1.36887+0.38491I$ $a=\ \ 0.86717+1.19426I$ $b=\ \ 1.163830-0.669799I$	$1.77972+9.93298I$	0
$u=-1.36887-0.38491I$ $a=\ \ 0.86717-1.19426I$ $b=\ \ 1.163830+0.669799I$	$1.77972-9.93298I$	0
$u=\ \ 1.39704+0.27963I$ $a=\ \ 0.627760-0.164251I$ $b=\ \ 1.239420+0.027842I$	$-9.04489-6.00167I$	0
$u=\ \ 1.39704-0.27963I$ $a=\ \ 0.627760+0.164251I$ $b=\ \ 1.239420-0.027842I$	$-9.04489+6.00167I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.32420 + 0.54500I$ $a = 0.549841 - 0.699856I$ $b = -0.521281 + 0.903568I$	$-2.43041 - 8.09154I$	0
$u = 1.32420 - 0.54500I$ $a = 0.549841 + 0.699856I$ $b = -0.521281 - 0.903568I$	$-2.43041 + 8.09154I$	0
$u = -1.34664 + 0.54674I$ $a = 0.482093 + 0.630584I$ $b = -0.497051 - 0.998009I$	$2.91136 + 13.77410I$	0
$u = -1.34664 - 0.54674I$ $a = 0.482093 - 0.630584I$ $b = -0.497051 + 0.998009I$	$2.91136 - 13.77410I$	0
$u = -0.17185 + 1.44841I$ $a = 0.415405 - 1.294100I$ $b = -0.972206 + 0.625778I$	$0.57879 + 7.13312I$	0
$u = -0.17185 - 1.44841I$ $a = 0.415405 + 1.294100I$ $b = -0.972206 - 0.625778I$	$0.57879 - 7.13312I$	0
$u = -1.46137 + 0.08407I$ $a = 0.743164 + 0.017767I$ $b = 0.922239 + 0.384113I$	$-4.32335 - 1.52739I$	0
$u = -1.46137 - 0.08407I$ $a = 0.743164 - 0.017767I$ $b = 0.922239 - 0.384113I$	$-4.32335 + 1.52739I$	0
$u = 1.36346 + 0.65088I$ $a = 0.50503 - 1.35961I$ $b = 1.141390 + 0.550428I$	$-2.73134 - 11.54070I$	0
$u = 1.36346 - 0.65088I$ $a = 0.50503 + 1.35961I$ $b = 1.141390 - 0.550428I$	$-2.73134 + 11.54070I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.487823$ $a=\ \ 1.24837$ $b=-0.700782$	-1.20277	-8.62840
$u=\ \ 0.75895+1.31522I$ $a=-0.207668-1.097850I$ $b=\ \ 0.842008+0.428077I$	$1.52746+1.15651I$	0
$u=\ \ 0.75895-1.31522I$ $a=-0.207668+1.097850I$ $b=\ \ 0.842008-0.428077I$	$1.52746-1.15651I$	0
$u=-1.51612+0.19747I$ $a=-0.467230+0.517386I$ $b=-1.061030-0.231239I$	$-7.20649-0.24882I$	0
$u=-1.51612-0.19747I$ $a=-0.467230-0.517386I$ $b=-1.061030+0.231239I$	$-7.20649+0.24882I$	0
$u=\ \ 1.43298+0.60208I$ $a=-0.41885+1.50988I$ $b=-1.112770-0.687061I$	$-4.2403-13.9567I$	0
$u=\ \ 1.43298-0.60208I$ $a=-0.41885-1.50988I$ $b=-1.112770+0.687061I$	$-4.2403+13.9567I$	0
$u=-1.53471+0.27805I$ $a=\ \ 0.627783+0.106824I$ $b=\ \ 0.994398+0.023784I$	$-5.41950+0.80147I$	0
$u=-1.53471-0.27805I$ $a=\ \ 0.627783-0.106824I$ $b=\ \ 0.994398-0.023784I$	$-5.41950-0.80147I$	0
$u=-1.45073+0.58186I$ $a=-0.49682-1.42065I$ $b=-1.155150+0.706026I$	$0.8594+19.9515I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.45073-0.58186I$ $a=-0.49682+1.42065I$ $b=-1.155150-0.706026I$	$0.8594-19.9515I$	0
$u=-0.369267+0.229074I$ $a=\ \ 0.132329-0.689954I$ $b=-0.069001-0.918620I$	$4.52436-4.78820I$	$3.35035+5.22511I$
$u=-0.369267-0.229074I$ $a=\ \ 0.132329+0.689954I$ $b=-0.069001+0.918620I$	$4.52436+4.78820I$	$3.35035-5.22511I$
$u=-1.32980+0.84039I$ $a=-0.07214-1.65888I$ $b=-1.003170+0.673003I$	$-1.34843+6.42495I$	0
$u=-1.32980-0.84039I$ $a=-0.07214+1.65888I$ $b=-1.003170-0.673003I$	$-1.34843-6.42495I$	0
$u=\ \ 1.57692+0.08619I$ $a=\ \ 0.675271+0.012448I$ $b=\ \ 0.868794-0.484131I$	$-3.40725+1.97338I$	0
$u=\ \ 1.57692-0.08619I$ $a=\ \ 0.675271-0.012448I$ $b=\ \ 0.868794+0.484131I$	$-3.40725-1.97338I$	0
$u=\ \ 0.158226+0.346808I$ $a=\ \ 6.09653+1.83713I$ $b=-0.879301+0.051273I$	$0.180675+0.062235I$	$-5.87156+5.71993I$
$u=\ \ 0.158226-0.346808I$ $a=\ \ 6.09653-1.83713I$ $b=-0.879301-0.051273I$	$0.180675-0.062235I$	$-5.87156-5.71993I$
$u=\ \ 1.62271+0.13098I$ $a=\ \ 0.190793+0.773889I$ $b=\ \ 0.838954-0.740978I$	$3.07691+2.80274I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.62271 - 0.13098I$ $a = 0.190793 - 0.773889I$ $b = 0.838954 + 0.740978I$	$3.07691 - 2.80274I$	0
$u = 0.070868 + 0.354198I$ $a = 1.67167 + 0.84301I$ $b = -0.155815 + 0.410239I$	$-0.08532 + 1.56228I$	$-1.25767 - 3.36895I$
$u = 0.070868 - 0.354198I$ $a = 1.67167 - 0.84301I$ $b = -0.155815 - 0.410239I$	$-0.08532 - 1.56228I$	$-1.25767 + 3.36895I$
$u = 0.358412 + 0.036935I$ $a = -2.95778 - 1.49510I$ $b = 1.037770 - 0.422808I$	$1.03754 + 8.53088I$	$-4.62589 - 8.79162I$
$u = 0.358412 - 0.036935I$ $a = -2.95778 + 1.49510I$ $b = 1.037770 + 0.422808I$	$1.03754 - 8.53088I$	$-4.62589 + 8.79162I$
$u = -0.203538 + 0.289178I$ $a = 0.260562 - 0.611319I$ $b = -1.191550 - 0.212559I$	$0.013209 + 0.790607I$	$0.62162 - 9.19646I$
$u = -0.203538 - 0.289178I$ $a = 0.260562 + 0.611319I$ $b = -1.191550 + 0.212559I$	$0.013209 - 0.790607I$	$0.62162 + 9.19646I$
$u = -1.52485 + 0.64530I$ $a = 0.378961 + 1.243280I$ $b = 1.057690 - 0.554389I$	$-5.08456 + 6.57916I$	0
$u = -1.52485 - 0.64530I$ $a = 0.378961 - 1.243280I$ $b = 1.057690 + 0.554389I$	$-5.08456 - 6.57916I$	0
$u = 1.43719 + 0.89441I$ $a = -0.473666 + 1.287330I$ $b = -0.803562 - 0.521797I$	$2.59886 + 1.15864I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.43719 - 0.89441I$ $a = -0.473666 - 1.287330I$ $b = -0.803562 + 0.521797I$	$2.59886 - 1.15864I$	0
$u = 0.082280 + 0.192921I$ $a = 2.84630 + 2.28467I$ $b = -0.934942 + 0.403937I$	$-1.98226 + 1.39082I$	$-8.83258 - 3.49235I$
$u = 0.082280 - 0.192921I$ $a = 2.84630 - 2.28467I$ $b = -0.934942 - 0.403937I$	$-1.98226 - 1.39082I$	$-8.83258 + 3.49235I$
$u = 1.37697 + 1.17042I$ $a = 0.320758 - 0.630926I$ $b = -0.901456 + 0.533961I$	$2.27029 + 5.43161I$	0
$u = 1.37697 - 1.17042I$ $a = 0.320758 + 0.630926I$ $b = -0.901456 - 0.533961I$	$2.27029 - 5.43161I$	0

II.

$\boldsymbol{I_2^u = \langle -1.01\times 10^{15} u^{27} - 1.32\times 10^{15} u^{26} + \cdots + 6.88\times 10^{13} b - 3.46\times 10^{15},\ -9.02\times 10^{14} u^{27} - 1.14\times 10^{15} u^{26} + \cdots + 6.88\times 10^{13} a - 2.99\times 10^{15},\ u^{28} + u^{27} + \cdots + 4u - 1\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 13.1132u^{27} + 16.5458u^{26} + \cdots - 24.9650u + 43.5287 \\ 14.6765u^{27} + 19.1358u^{26} + \cdots - 27.8941u + 50.2988 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 27.7897u^{27} + 35.6815u^{26} + \cdots - 52.8591u + 93.8276 \\ 14.6765u^{27} + 19.1358u^{26} + \cdots - 27.8941u + 50.2988 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -7.57904u^{27} - 9.80304u^{26} + \cdots + 20.7126u - 23.0928 \\ -12.0572u^{27} - 15.2717u^{26} + \cdots + 27.8680u - 37.5807 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -56.6493u^{27} - 73.4876u^{26} + \cdots + 119.041u - 192.560 \\ -27.0732u^{27} - 34.8367u^{26} + \cdots + 56.5704u - 91.3875 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -1.09896u^{27} - 1.15998u^{26} + \cdots - 6.19770u - 4.60526 \\ 6.01762u^{27} + 7.64526u^{26} + \cdots - 15.6610u + 18.6767 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -49.7448u^{27} - 64.8719u^{26} + \cdots + 105.533u - 169.520 \\ -33.4113u^{27} - 42.9037u^{26} + \cdots + 70.1387u - 112.716 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -14.9939u^{27} - 19.8047u^{26} + \cdots + 38.3727u - 48.2107 \\ -16.5467u^{27} - 21.3049u^{26} + \cdots + 37.3496u - 52.5440 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -4.35504u^{27} - 5.87482u^{26} + \cdots + 19.4892u - 12.5137 \\ -11.7029u^{27} - 15.5955u^{26} + \cdots + 33.5141u - 38.5718 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$$= \frac{6612661367678}{212855255365}u^{27} + \frac{8065415664027}{212855255365}u^{26} + \cdots - \frac{8238301010007}{212855255365}u + \frac{23383603443811}{212855255365}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{28} - 12u^{27} + \cdots - 10u + 1$
c_2	$u^{28} + 4u^{27} + \cdots + 4u + 1$
c_3	$u^{28} - 2u^{27} + \cdots - 3u^2 - 1$
c_4	$u^{28} - 2u^{27} + \cdots - 3u - 1$
c_5	$u^{28} - 4u^{27} + \cdots - 4u + 1$
c_6	$u^{28} + u^{27} + \cdots + 4u - 1$
c_7	$u^{28} + 2u^{27} + \cdots + 2u + 1$
c_8	$u^{28} + u^{27} + \cdots + 13u + 1$
c_9	$u^{28} + u^{26} + \cdots + 4u - 1$
c_{10}	$u^{28} - u^{27} + \cdots - 4u - 1$
c_{11}	$u^{28} - u^{27} + \cdots - 13u + 1$
c_{12}	$u^{28} - 4u^{26} + \cdots + 2u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{28} + 4y^{27} + \cdots + 38y + 1$
c_2, c_5	$y^{28} - 12y^{27} + \cdots - 10y + 1$
c_3	$y^{28} + 8y^{27} + \cdots + 6y + 1$
c_4	$y^{28} - 4y^{27} + \cdots - 3y + 1$
c_6, c_{10}	$y^{28} - 19y^{27} + \cdots - 30y + 1$
c_7	$y^{28} + 2y^{27} + \cdots - 4y + 1$
c_8, c_{11}	$y^{28} - 19y^{27} + \cdots - 53y + 1$
c_9	$y^{28} + 2y^{27} + \cdots - 12y + 1$
c_{12}	$y^{28} - 8y^{27} + \cdots + 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.999822+0.223884I$ $a=\ \ 0.000268-0.172722I$ $b=-0.277398+1.070030I$	$3.24551+6.41417I$	$1.88941-5.19504I$
$u=-0.999822-0.223884I$ $a=\ \ 0.000268+0.172722I$ $b=-0.277398-1.070030I$	$3.24551-6.41417I$	$1.88941+5.19504I$
$u=-0.982727+0.437950I$ $a=-1.273480+0.548117I$ $b=\ \ 0.457536+0.328658I$	$2.38845+6.75835I$	$-2.08112-6.86262I$
$u=-0.982727-0.437950I$ $a=-1.273480-0.548117I$ $b=\ \ 0.457536-0.328658I$	$2.38845-6.75835I$	$-2.08112+6.86262I$
$u=\ \ 0.894648+0.621540I$ $a=-1.11319+1.10365I$ $b=\ \ 0.668057-0.689490I$	$0.057006-1.227000I$	$2.27688+6.63604I$
$u=\ \ 0.894648-0.621540I$ $a=-1.11319-1.10365I$ $b=\ \ 0.668057+0.689490I$	$0.057006+1.227000I$	$2.27688-6.63604I$
$u=\ \ 1.127590+0.146820I$ $a=-0.23107+1.50081I$ $b=-0.974742-0.632962I$	$-4.03236-2.70646I$	$-9.85359+5.60503I$
$u=\ \ 1.127590-0.146820I$ $a=-0.23107-1.50081I$ $b=-0.974742+0.632962I$	$-4.03236+2.70646I$	$-9.85359-5.60503I$
$u=-1.15475$ $a=-0.670156$ $b=-1.68416$	-2.66613	-22.6310
$u=\ \ 0.736493+0.224307I$ $a=\ \ 0.125580-1.074830I$ $b=-0.477371-0.343605I$	$-1.24178-2.22670I$	$-5.45139+3.88786I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.736493 - 0.224307I$ $a = 0.125580 + 1.074830I$ $b = -0.477371 + 0.343605I$	$-1.24178 + 2.22670I$	$-5.45139 - 3.88786I$
$u = -1.190620 + 0.388898I$ $a = 1.12300 + 1.47156I$ $b = 1.163710 - 0.552680I$	$-0.26719 + 10.95580I$	$-4.27305 - 10.28671I$
$u = -1.190620 - 0.388898I$ $a = 1.12300 - 1.47156I$ $b = 1.163710 + 0.552680I$	$-0.26719 - 10.95580I$	$-4.27305 + 10.28671I$
$u = 1.27179$ $a = -0.836795$ $b = -1.14925$	-4.79047	-7.02690
$u = -0.666716 + 1.139490I$ $a = -0.468850 - 0.885646I$ $b = 0.988008 + 0.546985I$	$1.53526 - 6.10045I$	$-3.53945 + 10.21475I$
$u = -0.666716 - 1.139490I$ $a = -0.468850 + 0.885646I$ $b = 0.988008 - 0.546985I$	$1.53526 + 6.10045I$	$-3.53945 - 10.21475I$
$u = 1.147340 + 0.721844I$ $a = 0.14983 - 1.85012I$ $b = 1.010510 + 0.654604I$	$-1.00490 - 6.45415I$	$2.53221 + 8.73592I$
$u = 1.147340 - 0.721844I$ $a = 0.14983 + 1.85012I$ $b = 1.010510 - 0.654604I$	$-1.00490 + 6.45415I$	$2.53221 - 8.73592I$
$u = -1.218690 + 0.596584I$ $a = -0.170334 + 0.761916I$ $b = -0.612405 - 0.648951I$	$2.76377 - 3.72906I$	$0.63152 + 6.67791I$
$u = -1.218690 - 0.596584I$ $a = -0.170334 - 0.761916I$ $b = -0.612405 + 0.648951I$	$2.76377 + 3.72906I$	$0.63152 - 6.67791I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.48251 + 0.07555I$ $a = 0.779761 - 0.142593I$ $b = 0.881043 - 0.427003I$	$-5.32374 + 1.76278I$	$-10.46211 - 4.48061I$
$u = 1.48251 - 0.07555I$ $a = 0.779761 + 0.142593I$ $b = 0.881043 + 0.427003I$	$-5.32374 - 1.76278I$	$-10.46211 + 4.48061I$
$u = -0.95803 + 1.15701I$ $a = 0.06893 + 1.42563I$ $b = 0.711490 - 0.511469I$	$2.48501 - 1.77929I$	$0. + 7.92881I$
$u = -0.95803 - 1.15701I$ $a = 0.06893 - 1.42563I$ $b = 0.711490 + 0.511469I$	$2.48501 + 1.77929I$	$0. - 7.92881I$
$u = -0.226235 + 0.319298I$ $a = 0.02045 - 4.49376I$ $b = -1.035020 + 0.172534I$	$-0.141659 + 0.143494I$	$-5.65645 + 9.38551I$
$u = -0.226235 - 0.319298I$ $a = 0.02045 + 4.49376I$ $b = -1.035020 - 0.172534I$	$-0.141659 - 0.143494I$	$-5.65645 - 9.38551I$
$u = 0.295736 + 0.003714I$ $a = 1.24258 - 0.73376I$ $b = 0.913297 - 0.853503I$	$6.55480 + 3.17014I$	$4.71921 - 1.90637I$
$u = 0.295736 - 0.003714I$ $a = 1.24258 + 0.73376I$ $b = 0.913297 + 0.853503I$	$6.55480 - 3.17014I$	$4.71921 + 1.90637I$

III. $I_3^u = \langle b+1,\ 4a^2+6a-u+4,\ u^2-2\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} a \\ -1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u \\ -u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} a-1 \\ -1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} a \\ -1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 2a-\frac{1}{2}u+3 \\ 2a+3 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 3a+2 \\ 2a+1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 2a-\frac{3}{2}u+3 \\ 2a-u+3 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -8$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_8	$(u-1)^4$
c_3	$2(2u^4+3u^2-2u+1)$
c_4	$2(2u^4+3u^2+2u+1)$
c_5, c_{11}	$(u+1)^4$
c_6, c_9, c_{10}	$(u^2-2)^2$
c_7, c_{12}	$u^4-2u^3+5u^2-4u+2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5 c_8, c_{11}	$(y-1)^4$
c_3, c_4	$4(4y^4+12y^3+13y^2+2y+1)$
c_6, c_9, c_{10}	$(y-2)^4$
c_7, c_{12}	$y^4+6y^3+13y^2+4y+4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 1.41421$ $a = -0.750000 + 0.289735I$ $b = -1.00000$	-4.93480	-8.00000
$u = \quad 1.41421$ $a = -0.750000 - 0.289735I$ $b = -1.00000$	-4.93480	-8.00000
$u = -1.41421$ $a = -0.750000 + 0.889412I$ $b = -1.00000$	-4.93480	-8.00000
$u = -1.41421$ $a = -0.750000 - 0.889412I$ $b = -1.00000$	-4.93480	-8.00000

IV.

$\boldsymbol{I_4^u = \langle 13787a^8+73187b+\cdots+77516a+215532,\ a^9-5a^7+\cdots+19a+11,\ u+1\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_3 = \begin{pmatrix} a \\ -0.188380a^8 + 0.120076a^7 + \cdots - 1.05915a - 2.94495 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.188380a^8 + 0.120076a^7 + \cdots - 0.0591498a - 2.94495 \\ -0.188380a^8 + 0.120076a^7 + \cdots - 1.05915a - 2.94495 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0933226a^8 - 0.217170a^7 + \cdots + 1.61290a - 0.0174075 \\ 0.0536981a^8 - 0.0546818a^7 + \cdots - 1.76300a + 1.64152 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.386216a^8 + 0.323063a^7 + \cdots - 1.14731a - 4.45680 \\ -0.266140a^8 + 0.281703a^7 + \cdots - 0.513028a - 3.38462 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.00571140a^8 + 0.131007a^7 + \cdots - 0.656250a + 1.76739 \\ 0.0913823a^8 - 0.0961100a^7 + \cdots + 0.500007a + 1.72175 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.120076a^8 + 0.0413598a^7 + \cdots - 0.634279a - 1.07218 \\ -0.266140a^8 + 0.281703a^7 + \cdots - 0.513028a - 3.38462 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.101821a^8 - 0.268572a^7 + \cdots + 0.670761a - 0.762185 \\ -0.0933226a^8 + 0.217170a^7 + \cdots - 1.61290a + 0.0174075 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} a \\ -0.188380a^8 + 0.120076a^7 + \cdots - 1.05915a - 2.94495 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^9+6u^8+15u^7+22u^6+23u^5+22u^4+14u^3+8u^2+u+1$
c_2, c_5, c_{12}	$u^9+2u^8-u^7-2u^6+3u^5+2u^4-2u^3+u+1$
c_3, c_8, c_{11}	$u^9-u^7-u^5+u+1$
c_4	$u^9-6u^8+15u^7-22u^6+23u^5-22u^4+14u^3-8u^2+u-1$
c_6, c_{10}	$(u+1)^9$
c_7	$u^9-3u^7-4u^6+9u^5+6u^4-10u^3-8u^2+9u+1$
c_9	$u^9+u^7-3u^6+7u^5+10u^4+2u^3-3u^2-3u-1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^9 - 6y^8 + 7y^7 - 30y^6 - 113y^5 - 174y^4 - 154y^3 - 80y^2 - 15y - 1$
c_2, c_5, c_{12}	$y^9 - 6y^8 + 15y^7 - 22y^6 + 23y^5 - 22y^4 + 14y^3 - 8y^2 + y - 1$
c_3, c_8, c_{11}	$y^9 - 2y^8 - y^7 + 2y^6 + 3y^5 - 2y^4 - 2y^3 + y - 1$
c_6, c_{10}	$(y-1)^9$
c_7	$y^9 - 6y^8 + 27y^7 - 90y^6 + 207y^5 - 334y^4 + 366y^3 - 256y^2 + 97y - 1$
c_9	$y^9 + 2y^8 + 15y^7 + 9y^6 + 107y^5 - 96y^4 + 16y^3 - y^2 + 3y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.00000$ $a=\ \ 0.717700+0.569615I$ $b=-0.392479-0.478671I$	-1.64493	-6.00000
$u=-1.00000$ $a=\ \ 0.717700-0.569615I$ $b=-0.392479+0.478671I$	-1.64493	-6.00000
$u=-1.00000$ $a=-1.165340+0.609051I$ $b=\ \ 0.608437-0.761790I$	-1.64493	-6.00000
$u=-1.00000$ $a=-1.165340-0.609051I$ $b=\ \ 0.608437+0.761790I$	-1.64493	-6.00000
$u=-1.00000$ $a=-0.567461$ $b=-1.58079$	-1.64493	-6.00000
$u=-1.00000$ $a=-1.29626+0.86761I$ $b=-1.288800-0.404522I$	-1.64493	-6.00000
$u=-1.00000$ $a=-1.29626-0.86761I$ $b=-1.288800+0.404522I$	-1.64493	-6.00000
$u=-1.00000$ $a=\ \ 2.02763+1.17368I$ $b=\ \ 0.863232-0.454705I$	-1.64493	-6.00000
$u=-1.00000$ $a=\ \ 2.02763-1.17368I$ $b=\ \ 0.863232+0.454705I$	-1.64493	-6.00000

V. $I_1^v = \langle a,\ b+1,\ v-1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v =$ 1.00000		
$a =$ 0	0	0
$b = -1.00000$		

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^5)(u^9+6u^8+\cdots+u+1)$ $\cdot(u^{28}-12u^{27}+\cdots-10u+1)$ $\cdot(u^{145}+60u^{144}+\cdots+69806531u+3066001)$
c_2	$(u-1)^5(u^9+2u^8-u^7-2u^6+3u^5+2u^4-2u^3+u+1)$ $\cdot(u^{28}+4u^{27}+\cdots+4u+1)(u^{145}-30u^{143}+\cdots-5817u+1751)$
c_3	$4(u-1)(2u^4+3u^2-2u+1)(u^9-u^7-u^5+u+1)$ $\cdot(u^{28}-2u^{27}+\cdots-3u^2-1)$ $\cdot(2u^{145}-2u^{144}+\cdots-8207989u+1252007)$
c_4	$4(u-1)(2u^4+3u^2+2u+1)$ $\cdot(u^9-6u^8+15u^7-22u^6+23u^5-22u^4+14u^3-8u^2+u-1)$ $\cdot(u^{28}-2u^{27}+\cdots-3u-1)(2u^{145}+6u^{144}+\cdots-58u-1)$
c_5	$(u+1)^5(u^9+2u^8-u^7-2u^6+3u^5+2u^4-2u^3+u+1)$ $\cdot(u^{28}-4u^{27}+\cdots-4u+1)(u^{145}-30u^{143}+\cdots-5817u+1751)$
c_6	$u(u+1)^9(u^2-2)^2(u^{28}+u^{27}+\cdots+4u-1)$ $\cdot(u^{145}-9u^{144}+\cdots+376000u-36256)$
c_7	$(u+1)(u^4-2u^3+5u^2-4u+2)$ $\cdot(u^9-3u^7-4u^6+9u^5+6u^4-10u^3-8u^2+9u+1)$ $\cdot(u^{28}+2u^{27}+\cdots+2u+1)(u^{145}-10u^{144}+\cdots-13808u+958)$
c_8	$((u-1)^4)(u+1)(u^9-u^7+\cdots+u+1)(u^{28}+u^{27}+\cdots+13u+1)$ $\cdot(u^{145}-u^{144}+\cdots-402u+9)$
c_9	$u(u^2-2)^2(u^9+u^7-3u^6+7u^5+10u^4+2u^3-3u^2-3u-1)$ $\cdot(u^{28}+u^{26}+\cdots+4u-1)(u^{145}+7u^{144}+\cdots-2484u+124)$
c_{10}	$u(u+1)^9(u^2-2)^2(u^{28}-u^{27}+\cdots-4u-1)$ $\cdot(u^{145}-9u^{144}+\cdots+376000u-36256)$
c_{11}	$(u-1)(u+1)^4(u^9-u^7+\cdots+u+1)(u^{28}-u^{27}+\cdots-13u+1)$ $\cdot(u^{145}-u^{144}+\cdots-402u+9)$
c_{12}	40 $(u-1)(u^4-2u^3+5u^2-4u+2)$ $\cdot(u^9+2u^8-u^7-2u^6+3u^5+2u^4-2u^3+u+1)$ $\cdot(u^{28}-4u^{26}+\cdots+2u^2+1)(u^{145}+14u^{144}+\cdots+324u+122)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^5$ $\cdot(y^9-6y^8+7y^7-30y^6-113y^5-174y^4-154y^3-80y^2-15y-1)$ $\cdot(y^{28}+4y^{27}+\cdots+38y+1)$ $\cdot(y^{145}+52y^{144}+\cdots-76219022336469y-9400362132001)$
c_2, c_5	$((y-1)^5)(y^9-6y^8+\cdots+y-1)$ $\cdot(y^{28}-12y^{27}+\cdots-10y+1)$ $\cdot(y^{145}-60y^{144}+\cdots+69806531y-3066001)$
c_3	$16(y-1)(4y^4+12y^3+13y^2+2y+1)$ $\cdot(y^9-2y^8-y^7+2y^6+3y^5-2y^4-2y^3+y-1)$ $\cdot(y^{28}+8y^{27}+\cdots+6y+1)$ $\cdot(4y^{145}+224y^{144}+\cdots-38502319412515y-1567521528049)$
c_4	$16(y-1)(4y^4+12y^3+13y^2+2y+1)$ $\cdot(y^9-6y^8+7y^7-30y^6-113y^5-174y^4-154y^3-80y^2-15y-1)$ $\cdot(y^{28}-4y^{27}+\cdots-3y+1)(4y^{145}+80y^{144}+\cdots+1062y-1)$
c_6, c_{10}	$y(y-2)^4(y-1)^9(y^{28}-19y^{27}+\cdots-30y+1)$ $\cdot(y^{145}-99y^{144}+\cdots-18148659712y-1314497536)$
c_7	$(y-1)(y^4+6y^3+13y^2+4y+4)$ $\cdot(y^9-6y^8+27y^7-90y^6+207y^5-334y^4+366y^3-256y^2+97y-1)$ $\cdot(y^{28}+2y^{27}+\cdots-4y+1)$ $\cdot(y^{145}+24y^{144}+\cdots-104405052y-917764)$
c_8, c_{11}	$(y-1)^5(y^9-2y^8-y^7+2y^6+3y^5-2y^4-2y^3+y-1)$ $\cdot(y^{28}-19y^{27}+\cdots-53y+1)(y^{145}-111y^{144}+\cdots+29430y-81)$
c_9	$y(y-2)^4(y^9+2y^8+\cdots+3y-1)$ $\cdot(y^{28}+2y^{27}+\cdots-12y+1)$ $\cdot(y^{145}-17y^{144}+\cdots+17645216y-15376)$
c_{12}	$(y-1)(y^4+6y^3+13y^2+4y+4)$ $\cdot(y^9-6y^8+15y^7-22y^6+23y^5-22y^4+14y^3-8y^2+y-1)$ $\cdot(y^{28}-8y^{27}+\cdots+4y+1)(y^{145}-2y^{144}+\cdots-585788y-14884)$