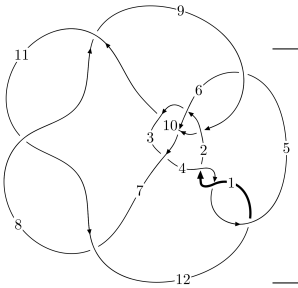
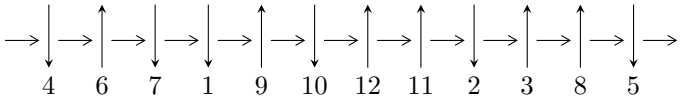
$12a_{0890}$ $(K12a_{0890})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -1.41774 \times 10^{373} u^{131} - 8.81640 \times 10^{374} u^{130} + \cdots + 2.89015 \times 10^{375} b - 3.34965 \times 10^{375},$$
$$- 2.99895 \times 10^{379} u^{131} + 1.52950 \times 10^{380} u^{130} + \cdots + 9.38806 \times 10^{379} a - 2.25117 \times 10^{380},$$
$$u^{132} - 5u^{131} + \cdots + 157u + 11 \rangle$$
$$I_2^u = \langle -u^{28} + 7u^{27} + \cdots + b - 4,\ u^{29} - 7u^{28} + \cdots + a - 5,\ u^{30} - 6u^{29} + \cdots - 8u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 162 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. $\boldsymbol{I_1^u = \langle -1.42 \times 10^{373} u^{131} - 8.82 \times 10^{374} u^{130} + \cdots + 2.89 \times 10^{375} b - 3.35 \times 10^{375},\ -3.00 \times 10^{379} u^{131} + 1.53 \times 10^{380} u^{130} + \cdots + 9.39 \times 10^{379} a - 2.25 \times 10^{380},\ u^{132} - 5u^{131} + \cdots + 157u + 11 \rangle}$

(i) Arc colorings

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

$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.319443u^{131} - 1.62920u^{130} + \cdots + 0.0910581u + 2.39791 \\ 0.00490543u^{131} + 0.305050u^{130} + \cdots + 19.2159u + 1.15899 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.314537u^{131} - 1.93425u^{130} + \cdots - 19.1248u + 1.23892 \\ 0.00490543u^{131} + 0.305050u^{130} + \cdots + 19.2159u + 1.15899 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.223257u^{131} + 0.637786u^{130} + \cdots - 10.4923u - 1.09005 \\ 0.177227u^{131} - 0.982312u^{130} + \cdots + 5.69063u + 0.367339 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.0674859u^{131} - 0.538029u^{130} + \cdots - 86.2553u - 6.81104 \\ -0.156492u^{131} + 1.20733u^{130} + \cdots + 16.5322u - 0.189296 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.314728u^{131} - 1.46910u^{130} + \cdots - 68.2386u - 7.22115 \\ -0.293356u^{131} + 1.92375u^{130} + \cdots + 13.9230u - 0.672299 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.367934u^{131} - 1.46158u^{130} + \cdots + 90.0780u + 9.93414 \\ 0.187553u^{131} - 0.598991u^{130} + \cdots + 32.7497u + 2.66066 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.518800u^{131} - 2.71076u^{130} + \cdots - 60.9506u - 5.07052 \\ -0.121163u^{131} + 1.13129u^{130} + \cdots + 25.4701u + 0.131622 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 1.44696u^{131} - 9.05081u^{130} + \cdots - 486.405u - 47.5445$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_{12}	$u^{132} + 5u^{131} + \cdots - 157u + 11$
c_2	$u^{132} - 3u^{131} + \cdots - 20u + 1$
c_3	$u^{132} - 2u^{131} + \cdots + 768008u - 38548$
c_5	$u^{132} + 2u^{131} + \cdots - 768008u - 38548$
c_6	$u^{132} + 3u^{131} + \cdots + 20u + 1$
c_7, c_8, c_{11}	$u^{132} - 5u^{131} + \cdots + 157u + 11$
c_9	$u^{132} - u^{131} + \cdots + 123u - 5$
c_{10}	$u^{132} + u^{131} + \cdots - 123u - 5$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_7 c_8, c_{11}, c_{12}	$y^{132} + 125y^{131} + \cdots - 14859y + 121$
c_2, c_6	$y^{132} - y^{131} + \cdots - 208y + 1$
c_3, c_5	$y^{132} - 6y^{131} + \cdots - 24158727920y + 1485948304$
c_9, c_{10}	$y^{132} + 9y^{131} + \cdots + 571y + 25$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.950162+0.371930I$ $a=\ \ 0.67877-2.14159I$ $b=-0.29964-1.46694I$	$-5.9520+14.1469I$	0
$u=-0.950162-0.371930I$ $a=\ \ 0.67877+2.14159I$ $b=-0.29964+1.46694I$	$-5.9520-14.1469I$	0
$u=-0.644129+0.714770I$ $a=-0.257686-0.441199I$ $b=-0.572702+0.256387I$	$0.99836-5.34745I$	0
$u=-0.644129-0.714770I$ $a=-0.257686+0.441199I$ $b=-0.572702-0.256387I$	$0.99836+5.34745I$	0
$u=\ \ 0.641102+0.836655I$ $a=\ \ 0.217211-0.127517I$ $b=-0.1095870-0.0579846I$	$-0.68851-2.45836I$	0
$u=\ \ 0.641102-0.836655I$ $a=\ \ 0.217211+0.127517I$ $b=-0.1095870+0.0579846I$	$-0.68851+2.45836I$	0
$u=\ \ 1.009860+0.421402I$ $a=\ \ 0.86690+2.04670I$ $b=-0.196199+1.388130I$	$-6.61469-4.90913I$	0
$u=\ \ 1.009860-0.421402I$ $a=\ \ 0.86690-2.04670I$ $b=-0.196199-1.388130I$	$-6.61469+4.90913I$	0
$u=\ \ 1.041540+0.340102I$ $a=-0.28770-2.08179I$ $b=\ \ 0.15746-1.43693I$	$-6.95360-4.28613I$	0
$u=\ \ 1.041540-0.340102I$ $a=-0.28770+2.08179I$ $b=\ \ 0.15746+1.43693I$	$-6.95360+4.28613I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.440285 + 1.014920I$ $a = -0.099470 - 0.884634I$ $b = -0.101752 - 1.377020I$	$-3.06770 - 1.78673I$	0
$u = 0.440285 - 1.014920I$ $a = -0.099470 + 0.884634I$ $b = -0.101752 + 1.377020I$	$-3.06770 + 1.78673I$	0
$u = 0.766251 + 0.455073I$ $a = 0.265973 + 0.448281I$ $b = -0.470216 + 0.263747I$	$-1.37915 - 2.38176I$	0
$u = 0.766251 - 0.455073I$ $a = 0.265973 - 0.448281I$ $b = -0.470216 - 0.263747I$	$-1.37915 + 2.38176I$	0
$u = -0.272305 + 0.846012I$ $a = 0.99449 - 1.05089I$ $b = 0.142486 - 1.394290I$	$-2.97007 - 2.46429I$	0
$u = -0.272305 - 0.846012I$ $a = 0.99449 + 1.05089I$ $b = 0.142486 + 1.394290I$	$-2.97007 + 2.46429I$	0
$u = -0.002790 + 1.111980I$ $a = 1.200990 + 0.179105I$ $b = -0.679439 - 0.185346I$	$1.10025 - 3.05463I$	0
$u = -0.002790 - 1.111980I$ $a = 1.200990 - 0.179105I$ $b = -0.679439 + 0.185346I$	$1.10025 + 3.05463I$	0
$u = 0.701907 + 0.537816I$ $a = -0.65478 - 1.73712I$ $b = 0.24496 - 1.47272I$	$-5.26519 - 5.78083I$	0
$u = 0.701907 - 0.537816I$ $a = -0.65478 + 1.73712I$ $b = 0.24496 + 1.47272I$	$-5.26519 + 5.78083I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.787382+0.386839I$ $a=-0.171210-0.646264I$ $b=-0.787382-0.386839I$	$10.2016I$	0
$u=-0.787382-0.386839I$ $a=-0.171210+0.646264I$ $b=-0.787382+0.386839I$	$-10.2016I$	0
$u=0.790592+0.347184I$ $a=1.18615+1.90823I$ $b=0.088744+1.394760I$	$-5.92340+0.99720I$	0
$u=0.790592-0.347184I$ $a=1.18615-1.90823I$ $b=0.088744-1.394760I$	$-5.92340-0.99720I$	0
$u=0.687351+0.513075I$ $a=0.176990-0.369508I$ $b=0.262179-0.400166I$	$-1.07235-2.41410I$	0
$u=0.687351-0.513075I$ $a=0.176990+0.369508I$ $b=0.262179+0.400166I$	$-1.07235+2.41410I$	0
$u=0.834729+0.037542I$ $a=0.71946+2.02214I$ $b=-0.237782+1.365960I$	$-6.14153-2.77490I$	0
$u=0.834729-0.037542I$ $a=0.71946-2.02214I$ $b=-0.237782-1.365960I$	$-6.14153+2.77490I$	0
$u=-0.052414+1.189960I$ $a=0.19582-1.80357I$ $b=0.09579-1.60665I$	$-5.54517-3.33256I$	0
$u=-0.052414-1.189960I$ $a=0.19582+1.80357I$ $b=0.09579+1.60665I$	$-5.54517+3.33256I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.779630+0.926682I$ $a=-0.49471+1.36858I$ $b=-0.22434+1.40772I$	$-4.35497-8.28767I$	0
$u=-0.779630-0.926682I$ $a=-0.49471-1.36858I$ $b=-0.22434-1.40772I$	$-4.35497+8.28767I$	0
$u=-0.725162+0.248821I$ $a=-0.70693+2.63897I$ $b=\ \ 0.29518+1.48566I$	$-4.85475+6.28492I$	0
$u=-0.725162-0.248821I$ $a=-0.70693-2.63897I$ $b=\ \ 0.29518-1.48566I$	$-4.85475-6.28492I$	0
$u=\ \ 0.773343+0.965987I$ $a=-0.20955-1.69076I$ $b=-0.111989-1.330050I$	$-5.07572-1.26184I$	0
$u=\ \ 0.773343-0.965987I$ $a=-0.20955+1.69076I$ $b=-0.111989+1.330050I$	$-5.07572+1.26184I$	0
$u=-0.127151+1.235070I$ $a=-0.274968+1.030680I$ $b=-0.00337+1.71364I$	$-5.60110+5.35321I$	0
$u=-0.127151-1.235070I$ $a=-0.274968-1.030680I$ $b=-0.00337-1.71364I$	$-5.60110-5.35321I$	0
$u=\ \ 0.302620+0.682286I$ $a=\ \ 0.90325+1.10435I$ $b=-0.469146+0.011108I$	$0.98745-3.37772I$	0
$u=\ \ 0.302620-0.682286I$ $a=\ \ 0.90325-1.10435I$ $b=-0.469146-0.011108I$	$0.98745+3.37772I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.294316 + 1.220750I$ $a = 1.71095 + 0.48410I$ $b = -0.338573 + 1.267650I$	$-2.36146 - 6.82792I$	0
$u = 0.294316 - 1.220750I$ $a = 1.71095 - 0.48410I$ $b = -0.338573 - 1.267650I$	$-2.36146 + 6.82792I$	0
$u = 0.071265 + 1.261830I$ $a = -2.60204 - 0.77989I$ $b = 0.071265 - 1.261830I$	$3.91086I$	0
$u = 0.071265 - 1.261830I$ $a = -2.60204 + 0.77989I$ $b = 0.071265 + 1.261830I$	$-3.91086I$	0
$u = -0.019111 + 1.286080I$ $a = -1.40117 + 0.89564I$ $b = 0.32094 + 1.40919I$	$0.40947 + 3.05315I$	0
$u = -0.019111 - 1.286080I$ $a = -1.40117 - 0.89564I$ $b = 0.32094 - 1.40919I$	$0.40947 - 3.05315I$	0
$u = -0.679439 + 0.185346I$ $a = 0.21866 - 3.01638I$ $b = -0.002790 - 1.111980I$	$-1.10025 - 3.05463I$	$-1.25318 + 2.55597I$
$u = -0.679439 - 0.185346I$ $a = 0.21866 + 3.01638I$ $b = -0.002790 + 1.111980I$	$-1.10025 + 3.05463I$	$-1.25318 - 2.55597I$
$u = 0.172704 + 1.295630I$ $a = 0.766858 - 0.146636I$ $b = -0.139306 - 0.387149I$	$2.76297 - 2.67751I$	0
$u = 0.172704 - 1.295630I$ $a = 0.766858 + 0.146636I$ $b = -0.139306 + 0.387149I$	$2.76297 + 2.67751I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.338573+1.267650I$ $a=-1.36573+1.59518I$ $b=\ \ 0.294316+1.220750I$	$2.36146+6.82792I$	0
$u=-0.338573-1.267650I$ $a=-1.36573-1.59518I$ $b=\ \ 0.294316-1.220750I$	$2.36146-6.82792I$	0
$u=-0.111989+1.330050I$ $a=-0.261450+0.227264I$ $b=\ \ 0.773343-0.965987I$	$5.07572-1.26184I$	0
$u=-0.111989-1.330050I$ $a=-0.261450-0.227264I$ $b=\ \ 0.773343+0.965987I$	$5.07572+1.26184I$	0
$u=-0.111538+1.333150I$ $a=-1.72458-0.02068I$ $b=\ \ 0.379857+0.270762I$	$3.16255+5.26546I$	0
$u=-0.111538-1.333150I$ $a=-1.72458+0.02068I$ $b=\ \ 0.379857-0.270762I$	$3.16255-5.26546I$	0
$u=-0.243111+1.317630I$ $a=\ \ 1.299540-0.408836I$ $b=-0.23465-1.42006I$	$-4.23968+0.21376I$	0
$u=-0.243111-1.317630I$ $a=\ \ 1.299540+0.408836I$ $b=-0.23465+1.42006I$	$-4.23968-0.21376I$	0
$u=\ \ 0.863385+1.032350I$ $a=\ \ 0.65186+1.42280I$ $b=\ \ 0.051249+1.356350I$	$-5.02593-2.17382I$	0
$u=\ \ 0.863385-1.032350I$ $a=\ \ 0.65186-1.42280I$ $b=\ \ 0.051249-1.356350I$	$-5.02593+2.17382I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.051249 + 1.356350I$ $a = -0.511244 + 0.312428I$ $b = 0.863385 + 1.032350I$	$5.02593 + 2.17382I$	0
$u = 0.051249 - 1.356350I$ $a = -0.511244 - 0.312428I$ $b = 0.863385 - 1.032350I$	$5.02593 - 2.17382I$	0
$u = 0.628407 + 0.055866I$ $a = 0.410455 - 0.178720I$ $b = -0.402004 - 0.116007I$	$-1.404620 - 0.021852I$	$-7.39206 - 0.48985I$
$u = 0.628407 - 0.055866I$ $a = 0.410455 + 0.178720I$ $b = -0.402004 + 0.116007I$	$-1.404620 + 0.021852I$	$-7.39206 + 0.48985I$
$u = -0.572702 + 0.256387I$ $a = -0.009101 + 1.173680I$ $b = -0.644129 + 0.714770I$	$-0.99836 + 5.34745I$	$-2.97606 - 6.12125I$
$u = -0.572702 - 0.256387I$ $a = -0.009101 - 1.173680I$ $b = -0.644129 - 0.714770I$	$-0.99836 - 5.34745I$	$-2.97606 + 6.12125I$
$u = 0.625030$ $a = 1.21625$ $b = 0.157649$	-1.06813	-9.34160
$u = -0.101752 + 1.377020I$ $a = 0.131635 - 0.371905I$ $b = 0.440285 - 1.014920I$	$3.06770 - 1.78673I$	0
$u = -0.101752 - 1.377020I$ $a = 0.131635 + 0.371905I$ $b = 0.440285 + 1.014920I$	$3.06770 + 1.78673I$	0
$u = -0.237782 + 1.365960I$ $a = -0.318941 + 0.622452I$ $b = 0.834729 + 0.037542I$	$6.14153 + 2.77490I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.237782-1.365960I$ $a=-0.318941-0.622452I$ $b=\ \ 0.834729-0.037542I$	$6.14153-2.77490I$	0
$u=-0.594196+0.131732I$ $a=\ \ 1.11525-2.31416I$ $b=-0.10232-1.55298I$	$-8.80205-2.88333I$	$-8.45430+3.06089I$
$u=-0.594196-0.131732I$ $a=\ \ 1.11525+2.31416I$ $b=-0.10232+1.55298I$	$-8.80205+2.88333I$	$-8.45430-3.06089I$
$u=\ \ 0.088744+1.394760I$ $a=-0.593259+0.456481I$ $b=\ \ 0.790592+0.347184I$	$5.92340-0.99720I$	0
$u=\ \ 0.088744-1.394760I$ $a=-0.593259-0.456481I$ $b=\ \ 0.790592-0.347184I$	$5.92340+0.99720I$	0
$u=\ \ 0.142486+1.394290I$ $a=\ \ 0.483151-0.325386I$ $b=-0.272305-0.846012I$	$2.97007-2.46429I$	0
$u=\ \ 0.142486-1.394290I$ $a=\ \ 0.483151+0.325386I$ $b=-0.272305+0.846012I$	$2.97007+2.46429I$	0
$u=-0.196199+1.388130I$ $a=-0.706661+0.673354I$ $b=\ \ 1.009860+0.421402I$	$6.61469+4.90913I$	0
$u=-0.196199-1.388130I$ $a=-0.706661-0.673354I$ $b=\ \ 1.009860-0.421402I$	$6.61469-4.90913I$	0
$u=-0.22434+1.40772I$ $a=\ \ 0.179708+0.146859I$ $b=-0.779630+0.926682I$	$4.35497+8.28767I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.22434-1.40772I$ $a=\ \ 0.179708-0.146859I$ $b=-0.779630-0.926682I$	$4.35497-8.28767I$	0
$u=-0.28731+1.40208I$ $a=-1.40455+1.11496I$ $b=\ \ 0.38905+1.51820I$	$0.40564+9.95805I$	0
$u=-0.28731-1.40208I$ $a=-1.40455-1.11496I$ $b=\ \ 0.38905-1.51820I$	$0.40564-9.95805I$	0
$u=-0.23465+1.42006I$ $a=\ \ 1.02401-1.37015I$ $b=-0.243111-1.317630I$	$4.23968+0.21376I$	0
$u=-0.23465-1.42006I$ $a=\ \ 1.02401+1.37015I$ $b=-0.243111+1.317630I$	$4.23968-0.21376I$	0
$u=\ \ 0.19257+1.43038I$ $a=\ \ 1.49154+1.63881I$ $b=-0.19209+1.43532I$	$2.46664-7.58913I$	0
$u=\ \ 0.19257-1.43038I$ $a=\ \ 1.49154-1.63881I$ $b=-0.19209-1.43532I$	$2.46664+7.58913I$	0
$u=\ \ 0.32094+1.40919I$ $a=\ \ 1.38101+0.80656I$ $b=-0.019111+1.286080I$	$-0.40947-3.05315I$	0
$u=\ \ 0.32094-1.40919I$ $a=\ \ 1.38101-0.80656I$ $b=-0.019111-1.286080I$	$-0.40947+3.05315I$	0
$u=\ \ 0.15746+1.43693I$ $a=-0.547564-0.230043I$ $b=\ \ 1.041540-0.340102I$	$6.95360-4.28613I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.15746 - 1.43693I$ $a = -0.547564 + 0.230043I$ $b = 1.041540 + 0.340102I$	$6.95360 + 4.28613I$	0
$u = -0.478756 + 0.279060I$ $a = -2.60328 + 2.08878I$ $b = 0.11761 + 1.51561I$	$-8.06398 + 5.06340I$	$-11.31512 - 7.25514I$
$u = -0.478756 - 0.279060I$ $a = -2.60328 - 2.08878I$ $b = 0.11761 - 1.51561I$	$-8.06398 - 5.06340I$	$-11.31512 + 7.25514I$
$u = -0.19209 + 1.43532I$ $a = -1.67209 + 0.24687I$ $b = 0.19257 + 1.43038I$	$-2.46664 + 7.58913I$	0
$u = -0.19209 - 1.43532I$ $a = -1.67209 - 0.24687I$ $b = 0.19257 - 1.43038I$	$-2.46664 - 7.58913I$	0
$u = -0.470216 + 0.263747I$ $a = 0.344417 + 1.206380I$ $b = 0.766251 + 0.455073I$	$1.37915 + 2.38176I$	$9.04345 - 9.73838I$
$u = -0.470216 - 0.263747I$ $a = 0.344417 - 1.206380I$ $b = 0.766251 - 0.455073I$	$1.37915 - 2.38176I$	$9.04345 + 9.73838I$
$u = 0.24496 + 1.47272I$ $a = -0.388573 - 0.396898I$ $b = 0.701907 - 0.537816I$	$5.26519 - 5.78083I$	0
$u = 0.24496 - 1.47272I$ $a = -0.388573 + 0.396898I$ $b = 0.701907 + 0.537816I$	$5.26519 + 5.78083I$	0
$u = -0.29964 + 1.46694I$ $a = 0.566894 - 0.578477I$ $b = -0.950162 - 0.371930I$	$5.9520 + 14.1469I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.29964-1.46694I$ $a=\ \ 0.566894+0.578477I$ $b=-0.950162+0.371930I$	$5.9520-14.1469I$	0
$u=\ \ 0.29518+1.48566I$ $a=\ \ 0.646450+0.424422I$ $b=-0.725162+0.248821I$	$4.85475-6.28492I$	0
$u=\ \ 0.29518-1.48566I$ $a=\ \ 0.646450-0.424422I$ $b=-0.725162-0.248821I$	$4.85475+6.28492I$	0
$u=\ \ 0.40667+1.46203I$ $a=-0.93004-1.23056I$ $b=\ \ 0.27599-1.49803I$	$-1.26061-9.42982I$	0
$u=\ \ 0.40667-1.46203I$ $a=-0.93004+1.23056I$ $b=\ \ 0.27599+1.49803I$	$-1.26061+9.42982I$	0
$u=\ \ 0.11761+1.51561I$ $a=\ \ 0.619797+0.802043I$ $b=-0.478756+0.279060I$	$8.06398-5.06340I$	0
$u=\ \ 0.11761-1.51561I$ $a=\ \ 0.619797-0.802043I$ $b=-0.478756-0.279060I$	$8.06398+5.06340I$	0
$u=\ \ 0.262179+0.400166I$ $a=\ \ 0.045519-0.155812I$ $b=\ \ 0.687351-0.513075I$	$1.07235-2.41410I$	$10.44859+9.05803I$
$u=\ \ 0.262179-0.400166I$ $a=\ \ 0.045519+0.155812I$ $b=\ \ 0.687351+0.513075I$	$1.07235+2.41410I$	$10.44859-9.05803I$
$u=\ \ 0.27599+1.49803I$ $a=-0.963325-0.765920I$ $b=\ \ 0.40667-1.46203I$	$1.26061-9.42982I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.27599 - 1.49803I$ $a = -0.963325 + 0.765920I$ $b = 0.40667 + 1.46203I$	$1.26061 + 9.42982I$	0
$u = -0.469146 + 0.011108I$ $a = -0.76819 + 2.68289I$ $b = 0.302620 + 0.682286I$	$-0.98745 + 3.37772I$	$-6.25218 - 8.22989I$
$u = -0.469146 - 0.011108I$ $a = -0.76819 - 2.68289I$ $b = 0.302620 - 0.682286I$	$-0.98745 - 3.37772I$	$-6.25218 + 8.22989I$
$u = 0.379857 + 0.270762I$ $a = 2.36245 + 5.61621I$ $b = -0.111538 + 1.333150I$	$-3.16255 - 5.26546I$	$-3.08168 + 10.27271I$
$u = 0.379857 - 0.270762I$ $a = 2.36245 - 5.61621I$ $b = -0.111538 - 1.333150I$	$-3.16255 + 5.26546I$	$-3.08168 - 10.27271I$
$u = -0.37147 + 1.48912I$ $a = 1.28609 - 1.11172I$ $b = -0.37147 - 1.48912I$	$18.9097I$	0
$u = -0.37147 - 1.48912I$ $a = 1.28609 + 1.11172I$ $b = -0.37147 + 1.48912I$	$-18.9097I$	0
$u = -0.10232 + 1.55298I$ $a = 0.366486 - 0.425441I$ $b = -0.594196 - 0.131732I$	$8.80205 - 2.88333I$	0
$u = -0.10232 - 1.55298I$ $a = 0.366486 + 0.425441I$ $b = -0.594196 + 0.131732I$	$8.80205 + 2.88333I$	0
$u = 0.38905 + 1.51820I$ $a = 1.31156 + 1.04793I$ $b = -0.28731 + 1.40208I$	$-0.40564 - 9.95805I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.38905 - 1.51820I$ $a = 1.31156 - 1.04793I$ $b = -0.28731 - 1.40208I$	$-0.40564 + 9.95805I$	0
$u = -0.402004 + 0.116007I$ $a = 1.184400 + 0.326910I$ $b = 0.628407 - 0.055866I$	$1.404620 - 0.021852I$	$7.39206 - 0.48985I$
$u = -0.402004 - 0.116007I$ $a = 1.184400 - 0.326910I$ $b = 0.628407 + 0.055866I$	$1.404620 + 0.021852I$	$7.39206 + 0.48985I$
$u = -0.139306 + 0.387149I$ $a = 2.65229 - 1.35503I$ $b = 0.172704 - 1.295630I$	$-2.76297 - 2.67751I$	$0.62580 + 2.22298I$
$u = -0.139306 - 0.387149I$ $a = 2.65229 + 1.35503I$ $b = 0.172704 + 1.295630I$	$-2.76297 + 2.67751I$	$0.62580 - 2.22298I$
$u = 0.09579 + 1.60665I$ $a = 0.071754 + 0.146857I$ $b = -0.052414 - 1.189960I$	$5.54517 - 3.33256I$	0
$u = 0.09579 - 1.60665I$ $a = 0.071754 - 0.146857I$ $b = -0.052414 + 1.189960I$	$5.54517 + 3.33256I$	0
$u = -0.00337 + 1.71364I$ $a = 0.146081 + 0.512095I$ $b = -0.127151 + 1.235070I$	$5.60110 - 5.35321I$	0
$u = -0.00337 - 1.71364I$ $a = 0.146081 - 0.512095I$ $b = -0.127151 - 1.235070I$	$5.60110 + 5.35321I$	0
$u = 0.157649$ $a = -4.19701$ $b = 0.625030$	1.06813	9.34160

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.1095870+0.0579846I$		
$a=\ \ 2.77162-0.62168I$	$0.68851-2.45836I$	$2.96272-12.60117I$
$b=\ \ 0.641102-0.836655I$		
$u=-0.1095870-0.0579846I$		
$a=\ \ 2.77162+0.62168I$	$0.68851+2.45836I$	$2.96272+12.60117I$
$b=\ \ 0.641102+0.836655I$		

II.

$\boldsymbol{I_2^u = \langle -u^{28}+7u^{27}+\cdots+b-4,\ u^{29}-7u^{28}+\cdots+a-5,\ u^{30}-6u^{29}+\cdots-8u+1\rangle}$

(i) Arc colorings

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

$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^2+1 \\ u^4+2u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^{29}+7u^{28}+\cdots-41u+5 \\ u^{28}-7u^{27}+\cdots-25u+4 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^{29}+6u^{28}+\cdots-16u+1 \\ u^{28}-7u^{27}+\cdots-25u+4 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^{28}-6u^{27}+\cdots-122u^3+24u^2 \\ u^{29}-4u^{28}+\cdots+24u^2-3u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^{29}-7u^{28}+\cdots+16u-2 \\ u^{29}-10u^{28}+\cdots+8u-1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 2u^{29}-15u^{28}+\cdots-17u+2 \\ -3u^{29}+10u^{28}+\cdots+31u-4 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^{29}-6u^{28}+\cdots+5u-2 \\ 2u^{29}-14u^{28}+\cdots+19u-3 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 3u^{29}-19u^{28}+\cdots-9u+1 \\ -7u^{28}+41u^{27}+\cdots+32u-4 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$= 6u^{29}-40u^{28}+237u^{27}-948u^{26}+3342u^{25}-9668u^{24}+25030u^{23}-56538u^{22}+115686u^{21}-212011u^{20}+354673u^{19}-538050u^{18}+748059u^{17}-948207u^{16}+1102601u^{15}-1170021u^{14}+1137414u^{13}-1006740u^{12}+814043u^{11}-596598u^{10}+398555u^9-239907u^8+131902u^7-64669u^6+29211u^5-11302u^4+4091u^3-1116u^2+290u-49$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{11}, c_{12}	$u^{30} - 6u^{29} + \cdots - 8u + 1$
c_2	$u^{30} - 2u^{29} + \cdots - 5u + 1$
c_3	$u^{30} + 3u^{29} + \cdots - 42u + 28$
c_4, c_7, c_8	$u^{30} + 6u^{29} + \cdots + 8u + 1$
c_5	$u^{30} - 3u^{29} + \cdots + 42u + 28$
c_6	$u^{30} + 2u^{29} + \cdots + 5u + 1$
c_9	$u^{30} + 6u^{28} + \cdots + 6u^2 + 1$
c_{10}	$u^{30} + 6u^{28} + \cdots + 6u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_7 c_8, c_{11}, c_{12}	$y^{30} + 32y^{29} + \cdots + 14y + 1$
c_2, c_6	$y^{30} + 6y^{29} + \cdots - 3y + 1$
c_3, c_5	$y^{30} + 9y^{29} + \cdots + 1876y + 784$
c_9, c_{10}	$y^{30} + 12y^{29} + \cdots + 12y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.890102 + 0.442809I$ $a = -0.74691 - 2.06032I$ $b = 0.17868 - 1.41532I$	$-6.01201 - 4.61569I$	$-2.50419 + 5.33502I$
$u = 0.890102 - 0.442809I$ $a = -0.74691 + 2.06032I$ $b = 0.17868 + 1.41532I$	$-6.01201 + 4.61569I$	$-2.50419 - 5.33502I$
$u = 0.705005 + 0.756507I$ $a = -0.082154 - 0.272162I$ $b = 0.278421 - 0.155762I$	$-0.59984 - 2.67935I$	$9.3750 + 18.2662I$
$u = 0.705005 - 0.756507I$ $a = -0.082154 + 0.272162I$ $b = 0.278421 + 0.155762I$	$-0.59984 + 2.67935I$	$9.3750 - 18.2662I$
$u = 0.022604 + 1.203100I$ $a = 0.53084 + 1.41537I$ $b = 0.05801 + 1.63296I$	$-5.20085 + 3.86398I$	$0.85342 - 7.41373I$
$u = 0.022604 - 1.203100I$ $a = 0.53084 - 1.41537I$ $b = 0.05801 - 1.63296I$	$-5.20085 - 3.86398I$	$0.85342 + 7.41373I$
$u = -0.071987 + 1.265200I$ $a = 1.64788 - 0.00635I$ $b = -0.261651 + 0.457608I$	$2.92597 + 4.34141I$	$2.79786 - 3.35128I$
$u = -0.071987 - 1.265200I$ $a = 1.64788 + 0.00635I$ $b = -0.261651 - 0.457608I$	$2.92597 - 4.34141I$	$2.79786 + 3.35128I$
$u = 0.810259 + 0.978159I$ $a = 0.35611 + 1.49854I$ $b = 0.099014 + 1.331320I$	$-4.61021 - 1.38790I$	0
$u = 0.810259 - 0.978159I$ $a = 0.35611 - 1.49854I$ $b = 0.099014 - 1.331320I$	$-4.61021 + 1.38790I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.119841 + 0.715873I$ $a = -0.998426 - 0.780655I$ $b = 0.06601 - 1.54655I$	$-7.16477 - 4.30186I$	$-5.52110 + 3.88276I$
$u = 0.119841 - 0.715873I$ $a = -0.998426 + 0.780655I$ $b = 0.06601 + 1.54655I$	$-7.16477 + 4.30186I$	$-5.52110 - 3.88276I$
$u = -0.151185 + 1.273750I$ $a = 2.54371 - 0.94777I$ $b = -0.151185 - 1.273750I$	$5.93137I$	$0. - 6.27108I$
$u = -0.151185 - 1.273750I$ $a = 2.54371 + 0.94777I$ $b = -0.151185 + 1.273750I$	$-5.93137I$	$0. + 6.27108I$
$u = 0.099014 + 1.331320I$ $a = -0.291551 + 0.011933I$ $b = 0.810259 + 0.978159I$	$4.61021 + 1.38790I$	0
$u = 0.099014 - 1.331320I$ $a = -0.291551 - 0.011933I$ $b = 0.810259 - 0.978159I$	$4.61021 - 1.38790I$	0
$u = 0.17868 + 1.41532I$ $a = -0.637062 - 0.460733I$ $b = 0.890102 - 0.442809I$	$6.01201 - 4.61569I$	0
$u = 0.17868 - 1.41532I$ $a = -0.637062 + 0.460733I$ $b = 0.890102 + 0.442809I$	$6.01201 + 4.61569I$	0
$u = -0.261651 + 0.457608I$ $a = -3.61042 + 3.04673I$ $b = -0.071987 + 1.265200I$	$-2.92597 - 4.34141I$	$-2.79786 + 3.35128I$
$u = -0.261651 - 0.457608I$ $a = -3.61042 - 3.04673I$ $b = -0.071987 - 1.265200I$	$-2.92597 + 4.34141I$	$-2.79786 - 3.35128I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.31648 + 1.45446I$ $a = -1.23933 - 1.03133I$ $b = 0.31648 - 1.45446I$	$-8.82787I$	0
$u = 0.31648 - 1.45446I$ $a = -1.23933 + 1.03133I$ $b = 0.31648 + 1.45446I$	$8.82787I$	0
$u = 0.06601 + 1.54655I$ $a = -0.413956 - 0.454670I$ $b = 0.119841 - 0.715873I$	$7.16477 - 4.30186I$	0
$u = 0.06601 - 1.54655I$ $a = -0.413956 + 0.454670I$ $b = 0.119841 + 0.715873I$	$7.16477 + 4.30186I$	0
$u = -0.059602 + 0.443367I$ $a = -2.61936 + 0.12643I$ $b = -0.059602 - 0.443367I$	$-3.69724I$	$0. + 6.99510I$
$u = -0.059602 - 0.443367I$ $a = -2.61936 - 0.12643I$ $b = -0.059602 + 0.443367I$	$3.69724I$	$0. - 6.99510I$
$u = 0.05801 + 1.63296I$ $a = -0.350838 + 0.154398I$ $b = 0.022604 + 1.203100I$	$5.20085 - 3.86398I$	0
$u = 0.05801 - 1.63296I$ $a = -0.350838 - 0.154398I$ $b = 0.022604 - 1.203100I$	$5.20085 + 3.86398I$	0
$u = 0.278421 + 0.155762I$ $a = -0.088535 - 1.224940I$ $b = 0.705005 - 0.756507I$	$0.59984 - 2.67935I$	$-9.3750 + 18.2662I$
$u = 0.278421 - 0.155762I$ $a = -0.088535 + 1.224940I$ $b = 0.705005 + 0.756507I$	$0.59984 + 2.67935I$	$-9.3750 - 18.2662I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_{12}	$(u^{30} - 6u^{29} + \cdots - 8u + 1)(u^{132} + 5u^{131} + \cdots - 157u + 11)$
c_2	$(u^{30} - 2u^{29} + \cdots - 5u + 1)(u^{132} - 3u^{131} + \cdots - 20u + 1)$
c_3	$(u^{30} + 3u^{29} + \cdots - 42u + 28)(u^{132} - 2u^{131} + \cdots + 768008u - 38548)$
c_4	$(u^{30} + 6u^{29} + \cdots + 8u + 1)(u^{132} + 5u^{131} + \cdots - 157u + 11)$
c_5	$(u^{30} - 3u^{29} + \cdots + 42u + 28)(u^{132} + 2u^{131} + \cdots - 768008u - 38548)$
c_6	$(u^{30} + 2u^{29} + \cdots + 5u + 1)(u^{132} + 3u^{131} + \cdots + 20u + 1)$
c_7, c_8	$(u^{30} + 6u^{29} + \cdots + 8u + 1)(u^{132} - 5u^{131} + \cdots + 157u + 11)$
c_9	$(u^{30} + 6u^{28} + \cdots + 6u^2 + 1)(u^{132} - u^{131} + \cdots + 123u - 5)$
c_{10}	$(u^{30} + 6u^{28} + \cdots + 6u^2 + 1)(u^{132} + u^{131} + \cdots - 123u - 5)$
c_{11}	$(u^{30} - 6u^{29} + \cdots - 8u + 1)(u^{132} - 5u^{131} + \cdots + 157u + 11)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_7 c_8, c_{11}, c_{12}	$(y^{30}+32y^{29}+\cdots+14y+1)(y^{132}+125y^{131}+\cdots-14859y+121)$
c_2, c_6	$(y^{30}+6y^{29}+\cdots-3y+1)(y^{132}-y^{131}+\cdots-208y+1)$
c_3, c_5	$(y^{30}+9y^{29}+\cdots+1876y+784)$ $\cdot(y^{132}-6y^{131}+\cdots-24158727920y+1485948304)$
c_9, c_{10}	$(y^{30}+12y^{29}+\cdots+12y+1)(y^{132}+9y^{131}+\cdots+571y+25)$