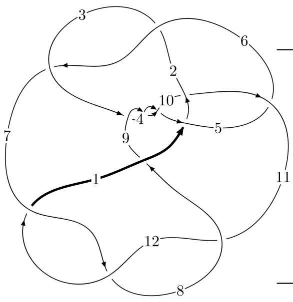
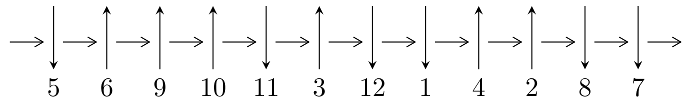
$12a_{1236}$ $(K12a_{1236})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 1.42131 \times 10^{123} u^{103} - 8.31432 \times 10^{122} u^{102} + \cdots + 7.88496 \times 10^{123} b - 1.31020 \times 10^{124}, \\ & 2.40145 \times 10^{123} u^{103} + 7.06011 \times 10^{121} u^{102} + \cdots + 7.88496 \times 10^{123} a - 3.73579 \times 10^{124}, \\ & u^{104} + 48 u^{102} + \cdots - 10u + 1 \rangle \\ I_2^u = \langle & -u^{18} - u^{17} + \cdots + b + 1,\ -3u^{19} - 3u^{18} + \cdots + a + 2,\ u^{21} + u^{20} + \cdots - 2u - 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 125 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. $\boldsymbol{I^u_1 = \langle 1.42 \times 10^{123} u^{103} - 8.31 \times 10^{122} u^{102} + \cdots + 7.88 \times 10^{123} b - 1.31 \times 10^{124},\ 2.40 \times 10^{123} u^{103} + 7.06 \times 10^{121} u^{102} + \cdots + 7.88 \times 10^{123} a - 3.74 \times 10^{124},\ u^{104} + 48u^{102} + \cdots - 10u + 1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_1 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.304561u^{103} - 0.00895389u^{102} + \cdots - 5.28918u + 4.73786 \\ -0.180256u^{103} + 0.105445u^{102} + \cdots - 0.205229u + 1.66165 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^4 - u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.503681u^{103} - 0.0491159u^{102} + \cdots - 5.68605u + 6.33520 \\ -0.141227u^{103} + 0.133202u^{102} + \cdots - 0.273063u + 1.70134 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.754616u^{103} - 0.358618u^{102} + \cdots - 1.06064u + 8.36278 \\ -0.163006u^{103} + 0.0997843u^{102} + \cdots - 2.03954u + 3.07367 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1.30230u^{103} + 0.259004u^{102} + \cdots - 0.111082u - 10.0921 \\ 0.441501u^{103} - 0.0875902u^{102} + \cdots + 3.77303u - 3.80556 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} -0.873306u^{103} - 0.247297u^{102} + \cdots - 1.79375u + 8.39105 \\ -0.0628994u^{103} + 0.0596347u^{102} + \cdots - 1.54074u + 2.99062 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.688002u^{103} - 0.203148u^{102} + \cdots + 8.09484u - 9.31886 \\ 0.212943u^{103} + 0.326702u^{102} + \cdots - 0.785101u - 2.66788 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -3.09066u^{103} - 0.418692u^{102} + \cdots - 10.7066u + 25.3820$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{104} + 7u^{103} + \cdots - 906u + 1909$
c_2, c_6	$u^{104} + 2u^{103} + \cdots + 63u + 73$
c_3, c_4, c_9	$u^{104} - u^{103} + \cdots - 42u - 1$
c_5	$u^{104} + u^{103} + \cdots - 106u + 1$
c_7, c_{11}, c_{12}	$u^{104} + 48u^{102} + \cdots + 10u + 1$
c_8	$u^{104} - u^{101} + \cdots + 7744u + 457$
c_{10}	$u^{104} - 5u^{103} + \cdots - 39735u + 17047$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{104} + 23y^{103} + \cdots + 88027842y + 3644281$
c_2, c_6	$y^{104} - 82y^{103} + \cdots + 131957y + 5329$
c_3, c_4, c_9	$y^{104} - 109y^{103} + \cdots - 1178y + 1$
c_5	$y^{104} + 15y^{103} + \cdots - 10638y + 1$
c_7, c_{11}, c_{12}	$y^{104} + 96y^{103} + \cdots - 72y + 1$
c_8	$y^{104} + 106y^{102} + \cdots - 16677012y + 208849$
c_{10}	$y^{104} - 41y^{103} + \cdots - 14746825375y + 290600209$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.620118 + 0.789865I$ $a = 0.521286 + 0.592077I$ $b = -1.35459 - 0.45056I$	$9.56661 + 8.03524I$	0
$u = 0.620118 - 0.789865I$ $a = 0.521286 - 0.592077I$ $b = -1.35459 + 0.45056I$	$9.56661 - 8.03524I$	0
$u = -0.105335 + 1.030070I$ $a = 1.51620 - 0.42594I$ $b = -0.385243 + 0.617360I$	$5.10809 + 3.63975I$	0
$u = -0.105335 - 1.030070I$ $a = 1.51620 + 0.42594I$ $b = -0.385243 - 0.617360I$	$5.10809 - 3.63975I$	0
$u = -1.03778$ $a = -0.0269272$ $b = -1.07237$	3.29245	0
$u = -0.746382 + 0.602859I$ $a = 0.998714 - 0.840032I$ $b = -0.855899 - 0.402358I$	$3.94155 + 4.30366I$	0
$u = -0.746382 - 0.602859I$ $a = 0.998714 + 0.840032I$ $b = -0.855899 + 0.402358I$	$3.94155 - 4.30366I$	0
$u = 0.829680 + 0.352824I$ $a = 0.565617 + 1.157080I$ $b = -1.41176 + 0.56699I$	$8.2061 - 13.0082I$	0
$u = 0.829680 - 0.352824I$ $a = 0.565617 - 1.157080I$ $b = -1.41176 - 0.56699I$	$8.2061 + 13.0082I$	0
$u = -0.154977 + 1.099720I$ $a = -0.834959 - 0.027034I$ $b = 0.308767 + 0.799992I$	$0.087281 - 0.510738I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.154977 - 1.099720I$ $a = -0.834959 + 0.027034I$ $b = 0.308767 - 0.799992I$	$0.087281 + 0.510738I$	0
$u = 0.191981 + 0.865189I$ $a = -0.082965 - 0.736955I$ $b = 1.340770 + 0.359873I$	$9.58062 - 0.35742I$	0
$u = 0.191981 - 0.865189I$ $a = -0.082965 + 0.736955I$ $b = 1.340770 - 0.359873I$	$9.58062 + 0.35742I$	0
$u = 0.857934$ $a = -0.114455$ $b = 0.723712$	-1.60767	-15.4730
$u = 0.367285 + 1.109370I$ $a = -0.960640 - 0.313248I$ $b = 0.861427 - 0.337448I$	$1.80378 - 4.43282I$	0
$u = 0.367285 - 1.109370I$ $a = -0.960640 + 0.313248I$ $b = 0.861427 + 0.337448I$	$1.80378 + 4.43282I$	0
$u = -0.408974 + 0.720777I$ $a = -1.010150 + 0.592828I$ $b = 1.171700 - 0.398512I$	$2.81966 - 4.74793I$	$3.70519 + 4.52321I$
$u = -0.408974 - 0.720777I$ $a = -1.010150 - 0.592828I$ $b = 1.171700 + 0.398512I$	$2.81966 + 4.74793I$	$3.70519 - 4.52321I$
$u = 0.043813 + 1.200940I$ $a = 1.50087 - 0.34043I$ $b = -1.093100 - 0.538555I$	$3.93615 + 1.11713I$	0
$u = 0.043813 - 1.200940I$ $a = 1.50087 + 0.34043I$ $b = -1.093100 + 0.538555I$	$3.93615 - 1.11713I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.695428 + 0.387530I$ $a = -0.813314 - 0.738577I$ $b = 0.910790 - 0.218196I$	$-0.45127 - 2.08949I$	$-5.67320 + 7.54122I$
$u = 0.695428 - 0.387530I$ $a = -0.813314 + 0.738577I$ $b = 0.910790 + 0.218196I$	$-0.45127 + 2.08949I$	$-5.67320 - 7.54122I$
$u = -0.735924 + 0.296284I$ $a = -0.80397 + 1.25813I$ $b = 1.303710 + 0.471076I$	$1.35265 + 8.84857I$	$1.14263 - 8.81074I$
$u = -0.735924 - 0.296284I$ $a = -0.80397 - 1.25813I$ $b = 1.303710 - 0.471076I$	$1.35265 - 8.84857I$	$1.14263 + 8.81074I$
$u = -0.705894 + 0.351680I$ $a = 0.188275 + 0.274678I$ $b = -0.551335 + 0.540399I$	$3.17492 + 0.39098I$	$0.93290 - 2.00106I$
$u = -0.705894 - 0.351680I$ $a = 0.188275 - 0.274678I$ $b = -0.551335 - 0.540399I$	$3.17492 - 0.39098I$	$0.93290 + 2.00106I$
$u = -0.722198 + 0.274964I$ $a = 0.19760 + 1.63490I$ $b = 1.194830 + 0.126529I$	$8.05202 + 4.22912I$	$6.55587 - 4.57124I$
$u = -0.722198 - 0.274964I$ $a = 0.19760 - 1.63490I$ $b = 1.194830 - 0.126529I$	$8.05202 - 4.22912I$	$6.55587 + 4.57124I$
$u = -0.771734$ $a = 0.759937$ $b = -0.790368$	2.40158	5.63180
$u = -0.246560 + 0.725443I$ $a = -0.446882 - 0.239528I$ $b = 1.329300 + 0.122327I$	$9.68887 - 0.42429I$	$9.29933 - 1.12741I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.246560 - 0.725443I$ $a = -0.446882 + 0.239528I$ $b = 1.329300 - 0.122327I$	$9.68887 + 0.42429I$	$9.29933 + 1.12741I$
$u = 0.716700 + 0.247198I$ $a = 0.11399 - 1.50069I$ $b = 1.44713 - 0.71686I$	$7.66319 - 3.32471I$	$7.08153 + 4.25402I$
$u = 0.716700 - 0.247198I$ $a = 0.11399 + 1.50069I$ $b = 1.44713 + 0.71686I$	$7.66319 + 3.32471I$	$7.08153 - 4.25402I$
$u = 0.243166 + 1.243460I$ $a = 0.202575 + 0.189137I$ $b = -0.284679 + 0.591002I$	$1.66136 - 3.20269I$	0
$u = 0.243166 - 1.243460I$ $a = 0.202575 - 0.189137I$ $b = -0.284679 - 0.591002I$	$1.66136 + 3.20269I$	0
$u = 0.665439 + 0.274419I$ $a = -0.332478 - 0.928461I$ $b = 0.011124 - 1.285510I$	$3.67182 - 6.63904I$	$1.49843 + 7.92289I$
$u = 0.665439 - 0.274419I$ $a = -0.332478 + 0.928461I$ $b = 0.011124 + 1.285510I$	$3.67182 + 6.63904I$	$1.49843 - 7.92289I$
$u = -0.080589 + 1.296550I$ $a = -0.078900 - 0.672379I$ $b = -0.614973 + 0.771669I$	$4.80034 - 1.11455I$	0
$u = -0.080589 - 1.296550I$ $a = -0.078900 + 0.672379I$ $b = -0.614973 - 0.771669I$	$4.80034 + 1.11455I$	0
$u = 0.698700 + 0.022216I$ $a = -0.527324 - 0.318258I$ $b = -0.041523 - 0.373581I$	$-2.08518 - 0.19609I$	$-5.25700 - 1.07973I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.698700 - 0.022216I$ $a = -0.527324 + 0.318258I$ $b = -0.041523 + 0.373581I$	$-2.08518 + 0.19609I$	$-5.25700 + 1.07973I$
$u = -0.682573 + 0.149623I$ $a = 0.368074 - 0.719379I$ $b = 0.042810 - 0.956572I$	$-2.61203 + 3.75303I$	$-4.16251 - 7.39345I$
$u = -0.682573 - 0.149623I$ $a = 0.368074 + 0.719379I$ $b = 0.042810 + 0.956572I$	$-2.61203 - 3.75303I$	$-4.16251 + 7.39345I$
$u = 0.071296 + 1.310970I$ $a = -0.071099 - 0.804873I$ $b = -0.427448 + 0.028098I$	$4.95252 - 1.57160I$	0
$u = 0.071296 - 1.310970I$ $a = -0.071099 + 0.804873I$ $b = -0.427448 - 0.028098I$	$4.95252 + 1.57160I$	0
$u = 0.303223 + 1.286920I$ $a = -0.587063 + 0.148446I$ $b = 0.088712 - 0.174045I$	$1.98304 - 3.83783I$	0
$u = 0.303223 - 1.286920I$ $a = -0.587063 - 0.148446I$ $b = 0.088712 + 0.174045I$	$1.98304 + 3.83783I$	0
$u = -0.573315 + 1.219970I$ $a = 0.718100 - 0.491528I$ $b = -1.111370 - 0.127817I$	$7.02373 + 5.61735I$	0
$u = -0.573315 - 1.219970I$ $a = 0.718100 + 0.491528I$ $b = -1.111370 + 0.127817I$	$7.02373 - 5.61735I$	0
$u = -0.273407 + 1.343450I$ $a = 0.849372 + 0.471844I$ $b = -0.087968 - 1.038730I$	$2.09247 + 7.22215I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.273407 - 1.343450I$ $a = 0.849372 - 0.471844I$ $b = -0.087968 + 1.038730I$	$2.09247 - 7.22215I$	0
$u = 0.569902 + 0.259753I$ $a = 1.47098 + 1.16159I$ $b = -1.250830 + 0.290569I$	$1.59615 - 3.09335I$	$3.07050 + 7.96279I$
$u = 0.569902 - 0.259753I$ $a = 1.47098 - 1.16159I$ $b = -1.250830 - 0.290569I$	$1.59615 + 3.09335I$	$3.07050 - 7.96279I$
$u = 0.064615 + 1.389110I$ $a = -2.69390 - 0.27554I$ $b = 1.130990 - 0.439667I$	$9.11640 - 3.79729I$	0
$u = 0.064615 - 1.389110I$ $a = -2.69390 + 0.27554I$ $b = 1.130990 + 0.439667I$	$9.11640 + 3.79729I$	0
$u = -0.217418 + 1.379800I$ $a = 1.97103 - 0.92033I$ $b = -1.399880 + 0.080986I$	$6.95103 + 2.47096I$	0
$u = -0.217418 - 1.379800I$ $a = 1.97103 + 0.92033I$ $b = -1.399880 - 0.080986I$	$6.95103 - 2.47096I$	0
$u = 0.131274 + 1.392020I$ $a = -2.35695 - 1.10644I$ $b = 2.03046 + 0.39544I$	$15.1827 - 1.2684I$	0
$u = 0.131274 - 1.392020I$ $a = -2.35695 + 1.10644I$ $b = 2.03046 - 0.39544I$	$15.1827 + 1.2684I$	0
$u = -0.212116 + 1.389820I$ $a = 2.20201 - 0.82635I$ $b = -1.35433 - 0.67085I$	$6.99266 + 5.38612I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.212116 - 1.389820I$ $a = 2.20201 + 0.82635I$ $b = -1.35433 + 0.67085I$	$6.99266 - 5.38612I$	0
$u = 0.20338 + 1.40110I$ $a = 2.12985 + 1.61341I$ $b = -1.160280 + 0.081319I$	$7.27022 - 2.24226I$	0
$u = 0.20338 - 1.40110I$ $a = 2.12985 - 1.61341I$ $b = -1.160280 - 0.081319I$	$7.27022 + 2.24226I$	0
$u = 0.16109 + 1.40977I$ $a = 0.120261 - 0.660060I$ $b = 0.673479 + 1.217030I$	$10.51900 + 1.46499I$	0
$u = 0.16109 - 1.40977I$ $a = 0.120261 + 0.660060I$ $b = 0.673479 - 1.217030I$	$10.51900 - 1.46499I$	0
$u = 0.22769 + 1.40184I$ $a = 2.73223 + 0.77856I$ $b = -1.384850 + 0.232626I$	$6.91603 - 6.05149I$	0
$u = 0.22769 - 1.40184I$ $a = 2.73223 - 0.77856I$ $b = -1.384850 - 0.232626I$	$6.91603 + 6.05149I$	0
$u = -0.12690 + 1.41514I$ $a = -2.49800 + 0.06442I$ $b = 1.57856 - 0.11426I$	$15.7422 + 0.8659I$	0
$u = -0.12690 - 1.41514I$ $a = -2.49800 - 0.06442I$ $b = 1.57856 + 0.11426I$	$15.7422 - 0.8659I$	0
$u = -0.14866 + 1.41986I$ $a = -0.023453 - 0.800359I$ $b = 0.363945 - 0.398775I$	$10.64610 + 5.13547I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.14866 - 1.41986I$ $a = -0.023453 + 0.800359I$ $b = 0.363945 + 0.398775I$	$10.64610 - 5.13547I$	0
$u = -0.516954 + 0.237865I$ $a = 0.35640 - 1.91087I$ $b = -1.132780 - 0.585934I$	$1.79267 + 2.64792I$	$4.98022 - 10.27183I$
$u = -0.516954 - 0.237865I$ $a = 0.35640 + 1.91087I$ $b = -1.132780 + 0.585934I$	$1.79267 - 2.64792I$	$4.98022 + 10.27183I$
$u = 0.28290 + 1.40368I$ $a = -1.99965 - 0.89852I$ $b = 1.55247 - 0.88840I$	$12.9310 - 6.9544I$	0
$u = 0.28290 - 1.40368I$ $a = -1.99965 + 0.89852I$ $b = 1.55247 + 0.88840I$	$12.9310 + 6.9544I$	0
$u = -0.09297 + 1.42903I$ $a = -2.51248 + 0.76287I$ $b = 1.187870 - 0.152148I$	$9.54976 - 3.46045I$	0
$u = -0.09297 - 1.42903I$ $a = -2.51248 - 0.76287I$ $b = 1.187870 + 0.152148I$	$9.54976 + 3.46045I$	0
$u = 0.26025 + 1.41053I$ $a = -0.868443 + 0.711871I$ $b = 0.07049 - 1.49738I$	$9.05860 - 10.01860I$	0
$u = 0.26025 - 1.41053I$ $a = -0.868443 - 0.711871I$ $b = 0.07049 + 1.49738I$	$9.05860 + 10.01860I$	0
$u = 0.485179 + 0.270736I$ $a = 0.79040 + 2.38823I$ $b = -1.031660 - 0.077777I$	$1.91959 + 0.37712I$	$4.44701 + 1.12327I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.485179 - 0.270736I$ $a = 0.79040 - 2.38823I$ $b = -1.031660 + 0.077777I$	$1.91959 - 0.37712I$	$4.44701 - 1.12327I$
$u = -0.28329 + 1.41670I$ $a = -1.37473 + 1.49910I$ $b = 1.209200 + 0.265954I$	$13.4608 + 7.8834I$	0
$u = -0.28329 - 1.41670I$ $a = -1.37473 - 1.49910I$ $b = 1.209200 - 0.265954I$	$13.4608 - 7.8834I$	0
$u = -0.28789 + 1.42366I$ $a = -2.29994 + 0.99344I$ $b = 1.40281 + 0.46662I$	$6.8492 + 12.5656I$	0
$u = -0.28789 - 1.42366I$ $a = -2.29994 - 0.99344I$ $b = 1.40281 - 0.46662I$	$6.8492 - 12.5656I$	0
$u = -0.26439 + 1.43129I$ $a = 0.265359 - 0.325520I$ $b = -0.403032 + 0.743808I$	$8.85482 + 3.89445I$	0
$u = -0.26439 - 1.43129I$ $a = 0.265359 + 0.325520I$ $b = -0.403032 - 0.743808I$	$8.85482 - 3.89445I$	0
$u = 0.28315 + 1.44885I$ $a = -1.83399 - 0.74117I$ $b = 1.153810 - 0.253328I$	$5.41763 - 5.72105I$	0
$u = 0.28315 - 1.44885I$ $a = -1.83399 + 0.74117I$ $b = 1.153810 + 0.253328I$	$5.41763 + 5.72105I$	0
$u = 0.32355 + 1.46124I$ $a = 2.04944 + 0.92269I$ $b = -1.49181 + 0.61857I$	$14.0185 - 17.1862I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.32355 - 1.46124I$ $a = 2.04944 - 0.92269I$ $b = -1.49181 - 0.61857I$	$14.0185 + 17.1862I$	0
$u = -0.452341 + 0.213983I$ $a = 0.041623 - 0.568597I$ $b = -1.074090 + 0.183023I$	$1.92002 - 0.19899I$	$4.99423 - 1.13661I$
$u = -0.452341 - 0.213983I$ $a = 0.041623 + 0.568597I$ $b = -1.074090 - 0.183023I$	$1.92002 + 0.19899I$	$4.99423 + 1.13661I$
$u = 0.138678 + 0.436669I$ $a = -0.715549 - 0.443071I$ $b = 0.071608 + 0.401000I$	$0.005210 - 1.077320I$	$0.04464 + 5.68876I$
$u = 0.138678 - 0.436669I$ $a = -0.715549 + 0.443071I$ $b = 0.071608 - 0.401000I$	$0.005210 + 1.077320I$	$0.04464 - 5.68876I$
$u = 0.239830 + 0.371764I$ $a = 2.59875 + 1.03140I$ $b = 0.386909 + 0.764730I$	$4.93361 + 3.39110I$	$3.79128 - 1.57942I$
$u = 0.239830 - 0.371764I$ $a = 2.59875 - 1.03140I$ $b = 0.386909 - 0.764730I$	$4.93361 - 3.39110I$	$3.79128 + 1.57942I$
$u = -0.30421 + 1.53966I$ $a = 1.68761 - 0.61965I$ $b = -1.070700 - 0.438021I$	$10.85890 + 8.30683I$	0
$u = -0.30421 - 1.53966I$ $a = 1.68761 + 0.61965I$ $b = -1.070700 + 0.438021I$	$10.85890 - 8.30683I$	0
$u = 0.07246 + 1.57674I$ $a = 1.88538 + 0.43170I$ $b = -1.44750 - 0.25587I$	$17.7577 + 5.8198I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.07246 - 1.57674I$ $a = 1.88538 - 0.43170I$ $b = -1.44750 + 0.25587I$	$17.7577 - 5.8198I$	0
$u = -0.125299 + 0.374525I$ $a = 2.66492 - 2.42690I$ $b = 0.281850 + 0.291258I$	$4.91367 + 3.46621I$	$5.63596 - 0.30210I$
$u = -0.125299 - 0.374525I$ $a = 2.66492 + 2.42690I$ $b = 0.281850 - 0.291258I$	$4.91367 - 3.46621I$	$5.63596 + 0.30210I$
$u = 0.107145$ $a = 4.42125$ $b = 1.77125$	10.1182	26.4200

II.

$\boldsymbol{I_2^u = \langle -u^{18}-u^{17}+\cdots+b+1,\ -3u^{19}-3u^{18}+\cdots+a+2,\ u^{21}+u^{20}+\cdots-2u-1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix}1\\0\end{pmatrix}$$

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

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

$$a_1 = \begin{pmatrix}-u\\u\end{pmatrix}$$

$$a_3 = \begin{pmatrix}3u^{19}+3u^{18}+\cdots-5u-2\\u^{18}+u^{17}+\cdots+3u-1\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-u^4-u^2+1\\u^4+2u^2\end{pmatrix}$$

$$a_4 = \begin{pmatrix}-u^{20}+u^{19}+\cdots-u-2\\u^{20}+10u^{18}+\cdots+3u-1\end{pmatrix}$$

$$a_6 = \begin{pmatrix}u^{20}-2u^{19}+\cdots+u+2\\3u^{19}+2u^{18}+\cdots-5u+1\end{pmatrix}$$

$$a_2 = \begin{pmatrix}3u^{20}+2u^{19}+\cdots-2u+1\\-3u^{20}-27u^{18}+\cdots-5u+1\end{pmatrix}$$

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

$$a_5 = \begin{pmatrix}u^{20}-2u^{19}+\cdots+u+2\\-u^{20}+2u^{19}+\cdots-5u+1\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}u^{20}+u^{19}+\cdots+u-1\\-u^{20}+u^{19}+\cdots+2u-3\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$= u^{20}-2u^{19}+16u^{18}-15u^{17}+96u^{16}-41u^{15}+289u^{14}-34u^{13}+451u^{12}+56u^{11}+269u^{10}+149u^9-182u^8+129u^7-343u^6+62u^5-122u^4+39u^3+2u^2+21u-13$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{21} + 2u^{19} + \cdots - 4u^3 + 1$
c_2	$u^{21} - 3u^{20} + \cdots - 3u + 1$
c_3, c_4	$u^{21} - 12u^{19} + \cdots + 6u^2 - 1$
c_5	$u^{21} + 2u^{19} + \cdots + 4u^3 + 1$
c_6	$u^{21} + 3u^{20} + \cdots - 3u - 1$
c_7	$u^{21} + u^{20} + \cdots - 2u - 1$
c_8	$u^{21} - u^{20} + \cdots + 5u^2 - 1$
c_9	$u^{21} - 12u^{19} + \cdots - 6u^2 + 1$
c_{10}	$u^{21} - 6u^{19} + \cdots - 3u + 1$
c_{11}, c_{12}	$u^{21} - u^{20} + \cdots - 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{21} + 4y^{20} + \cdots + 4y^2 - 1$
c_2, c_6	$y^{21} - 21y^{20} + \cdots + 17y - 1$
c_3, c_4, c_9	$y^{21} - 24y^{20} + \cdots + 12y - 1$
c_5	$y^{21} + 4y^{20} + \cdots + 8y^2 - 1$
c_7, c_{11}, c_{12}	$y^{21} + 21y^{20} + \cdots + 14y - 1$
c_8	$y^{21} - 7y^{20} + \cdots + 10y - 1$
c_{10}	$y^{21} - 12y^{20} + \cdots + 9y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.984366$ $a = 0.662312$ $b = -0.673716$	1.82676	-9.91440
$u = 0.815366$ $a = 0.226730$ $b = 0.766209$	-1.25146	8.97490
$u = -0.094643 + 1.210930I$ $a = -1.35923 - 0.59174I$ $b = -0.506081 + 0.505228I$	$7.46274 - 2.59275I$	$6.09158 + 2.39408I$
$u = -0.094643 - 1.210930I$ $a = -1.35923 + 0.59174I$ $b = -0.506081 - 0.505228I$	$7.46274 + 2.59275I$	$6.09158 - 2.39408I$
$u = -0.400308 + 1.163200I$ $a = 1.350780 + 0.065188I$ $b = -0.595239 - 0.197957I$	$5.26942 + 5.01003I$	$4.18148 - 7.46302I$
$u = -0.400308 - 1.163200I$ $a = 1.350780 - 0.065188I$ $b = -0.595239 + 0.197957I$	$5.26942 - 5.01003I$	$4.18148 + 7.46302I$
$u = 0.118068 + 1.275040I$ $a = -0.419472 - 0.038310I$ $b = 0.926190 + 0.562953I$	$4.92913 + 0.08626I$	$7.93219 + 1.76829I$
$u = 0.118068 - 1.275040I$ $a = -0.419472 + 0.038310I$ $b = 0.926190 - 0.562953I$	$4.92913 - 0.08626I$	$7.93219 - 1.76829I$
$u = 0.334075 + 1.250500I$ $a = -0.462448 - 0.306608I$ $b = 0.714711 - 0.169866I$	$2.56546 - 4.14061I$	$10.62678 + 5.20457I$
$u = 0.334075 - 1.250500I$ $a = -0.462448 + 0.306608I$ $b = 0.714711 + 0.169866I$	$2.56546 + 4.14061I$	$10.62678 - 5.20457I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.470586 + 0.411070I$ $a = 1.31709 - 2.30799I$ $b = -0.731585 - 0.450596I$	$4.93789 + 4.21985I$	$6.56409 - 9.36044I$
$u = -0.470586 - 0.411070I$ $a = 1.31709 + 2.30799I$ $b = -0.731585 + 0.450596I$	$4.93789 - 4.21985I$	$6.56409 + 9.36044I$
$u = -0.121197 + 1.370090I$ $a = 2.48838 - 0.58106I$ $b = -1.85728 + 0.21135I$	$14.5696 + 1.5143I$	$3.79993 - 5.22180I$
$u = -0.121197 - 1.370090I$ $a = 2.48838 + 0.58106I$ $b = -1.85728 - 0.21135I$	$14.5696 - 1.5143I$	$3.79993 + 5.22180I$
$u = 0.197775 + 1.398750I$ $a = -2.38843 - 0.88230I$ $b = 1.312150 - 0.340653I$	$6.65693 - 4.31329I$	$6.76497 + 2.43690I$
$u = 0.197775 - 1.398750I$ $a = -2.38843 + 0.88230I$ $b = 1.312150 + 0.340653I$	$6.65693 + 4.31329I$	$6.76497 - 2.43690I$
$u = -0.26074 + 1.46036I$ $a = 1.58165 - 0.83966I$ $b = -0.996753 - 0.582614I$	$11.05480 + 7.28682I$	$8.35637 - 3.98505I$
$u = -0.26074 - 1.46036I$ $a = 1.58165 + 0.83966I$ $b = -0.996753 + 0.582614I$	$11.05480 - 7.28682I$	$8.35637 + 3.98505I$
$u = 0.426638 + 0.185914I$ $a = -1.15995 - 2.17038I$ $b = 1.086900 - 0.393442I$	$1.44452 - 1.88456I$	$-0.318304 + 1.212914I$
$u = 0.426638 - 0.185914I$ $a = -1.15995 + 2.17038I$ $b = 1.086900 + 0.393442I$	$1.44452 + 1.88456I$	$-0.318304 - 1.212914I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.289165$ $a = \quad 0.214232$ $b = -1.79851$	9.94852	-21.0590

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{21}+2u^{19}+\cdots-4u^3+1)(u^{104}+7u^{103}+\cdots-906u+1909)$
c_2	$(u^{21}-3u^{20}+\cdots-3u+1)(u^{104}+2u^{103}+\cdots+63u+73)$
c_3, c_4	$(u^{21}-12u^{19}+\cdots+6u^2-1)(u^{104}-u^{103}+\cdots-42u-1)$
c_5	$(u^{21}+2u^{19}+\cdots+4u^3+1)(u^{104}+u^{103}+\cdots-106u+1)$
c_6	$(u^{21}+3u^{20}+\cdots-3u-1)(u^{104}+2u^{103}+\cdots+63u+73)$
c_7	$(u^{21}+u^{20}+\cdots-2u-1)(u^{104}+48u^{102}+\cdots+10u+1)$
c_8	$(u^{21}-u^{20}+\cdots+5u^2-1)(u^{104}-u^{101}+\cdots+7744u+457)$
c_9	$(u^{21}-12u^{19}+\cdots-6u^2+1)(u^{104}-u^{103}+\cdots-42u-1)$
c_{10}	$(u^{21}-6u^{19}+\cdots-3u+1)(u^{104}-5u^{103}+\cdots-39735u+17047)$
c_{11}, c_{12}	$(u^{21}-u^{20}+\cdots-2u+1)(u^{104}+48u^{102}+\cdots+10u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{21}+4y^{20}+\cdots+4y^2-1)$ $\cdot\,(y^{104}+23y^{103}+\cdots+88027842y+3644281)$
c_2, c_6	$(y^{21}-21y^{20}+\cdots+17y-1)(y^{104}-82y^{103}+\cdots+131957y+5329)$
c_3, c_4, c_9	$(y^{21}-24y^{20}+\cdots+12y-1)(y^{104}-109y^{103}+\cdots-1178y+1)$
c_5	$(y^{21}+4y^{20}+\cdots+8y^2-1)(y^{104}+15y^{103}+\cdots-10638y+1)$
c_7, c_{11}, c_{12}	$(y^{21}+21y^{20}+\cdots+14y-1)(y^{104}+96y^{103}+\cdots-72y+1)$
c_8	$(y^{21}-7y^{20}+\cdots+10y-1)$ $\cdot\,(y^{104}+106y^{102}+\cdots-16677012y+208849)$
c_{10}	$(y^{21}-12y^{20}+\cdots+9y-1)$ $\cdot\,(y^{104}-41y^{103}+\cdots-14746825375y+290600209)$