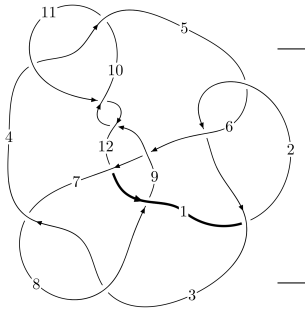
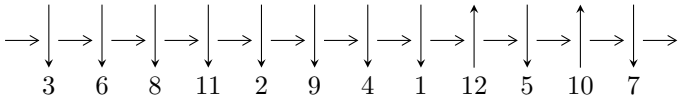
$12a_{0314}$ $(K12a_{0314})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 3.08859 \times 10^{177} u^{134} + 4.12913 \times 10^{177} u^{133} + \cdots + 2.92373 \times 10^{177} b - 6.46265 \times 10^{177},$$
$$- 5.20487 \times 10^{177} u^{134} - 7.50538 \times 10^{177} u^{133} + \cdots + 2.92373 \times 10^{177} a - 2.04516 \times 10^{178},$$
$$u^{135} + u^{134} + \cdots - 10u - 1 \rangle$$
$$I_2^u = \langle -u^{25} - 5u^{23} + \cdots + b + u,\ u^{26} - 3u^{25} + \cdots + a + 1,\ u^{27} + 6u^{25} + \cdots + 4u + 1 \rangle$$

* 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. $\boldsymbol{I_1^u = \langle 3.09 \times 10^{177} u^{134} + 4.13 \times 10^{177} u^{133} + \cdots + 2.92 \times 10^{177} b - 6.46 \times 10^{177},\ -5.20 \times 10^{177} u^{134} - 7.51 \times 10^{177} u^{133} + \cdots + 2.92 \times 10^{177} a - 2.05 \times 10^{178},\ u^{135} + u^{134} + \cdots - 10u - 1 \rangle}$

(i) Arc colorings

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

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

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1.78022u^{134} + 2.56706u^{133} + \cdots + 1.72860u + 6.99504 \\ -1.05639u^{134} - 1.41228u^{133} + \cdots + 18.8557u + 2.21042 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 2.83661u^{134} + 3.97934u^{133} + \cdots - 17.1271u + 4.78462 \\ -1.05639u^{134} - 1.41228u^{133} + \cdots + 18.8557u + 2.21042 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.667462u^{134} + 1.65680u^{133} + \cdots - 88.1836u - 9.43511 \\ 0.245974u^{134} + 0.777931u^{133} + \cdots - 18.2752u - 0.373464 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -1.83805u^{134} - 0.271778u^{133} + \cdots - 95.8499u - 4.55202 \\ 1.08576u^{134} + 0.642890u^{133} + \cdots - 0.00908748u + 0.935550 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1.69714u^{134} + 2.70494u^{133} + \cdots + 8.51473u - 3.45506 \\ -0.898715u^{134} - 2.04841u^{133} + \cdots + 5.14031u - 0.604629 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^5 + u \\ u^7 + u^5 + 2u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 2.94174u^{134} + 4.34609u^{133} + \cdots - 7.34893u + 6.24805 \\ -1.64723u^{134} - 2.09134u^{133} + \cdots + 23.2895u + 2.65403 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 2.06282u^{134} + 5.04217u^{133} + \cdots - 3.18528u - 6.72246$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{135} + 56u^{134} + \cdots + 282415u + 5041$
c_2, c_5	$u^{135} + 2u^{134} + \cdots - 183u + 71$
c_3, c_7	$u^{135} + u^{134} + \cdots + 14458u + 16279$
c_4, c_{10}	$u^{135} - u^{134} + \cdots - 10u + 1$
c_6	$u^{135} - 20u^{134} + \cdots + 12813u + 3131$
c_8	$u^{135} - 12u^{134} + \cdots - 359245u + 99529$
c_9, c_{11}	$u^{135} - 45u^{134} + \cdots - 76u + 1$
c_{12}	$u^{135} + 2u^{134} + \cdots - 115u + 457$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{135} + 60y^{134} + \cdots + 2060543075y - 25411681$
c_2, c_5	$y^{135} - 56y^{134} + \cdots + 282415y - 5041$
c_3, c_7	$y^{135} + 97y^{134} + \cdots - 11715822106y - 265005841$
c_4, c_{10}	$y^{135} + 45y^{134} + \cdots - 76y - 1$
c_6	$y^{135} - 22y^{134} + \cdots + 518733671y - 9803161$
c_8	$y^{135} + 26y^{134} + \cdots - 71452162795y - 9906021841$
c_9, c_{11}	$y^{135} + 101y^{134} + \cdots + 1848y - 1$
c_{12}	$y^{135} - 10y^{134} + \cdots + 12233405y - 208849$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.182191 + 0.978011I$ $a = 0.053526 + 0.498105I$ $b = -0.913562 - 0.305391I$	$2.78439 - 2.21481I$	0
$u = 0.182191 - 0.978011I$ $a = 0.053526 - 0.498105I$ $b = -0.913562 + 0.305391I$	$2.78439 + 2.21481I$	0
$u = -0.257952 + 0.978394I$ $a = -0.207563 + 0.191828I$ $b = 1.040760 - 0.132048I$	$1.69152 + 7.21546I$	0
$u = -0.257952 - 0.978394I$ $a = -0.207563 - 0.191828I$ $b = 1.040760 + 0.132048I$	$1.69152 - 7.21546I$	0
$u = 0.297927 + 0.935277I$ $a = 0.554906 + 0.972744I$ $b = -0.375896 + 0.194038I$	$2.04642 - 3.11861I$	0
$u = 0.297927 - 0.935277I$ $a = 0.554906 - 0.972744I$ $b = -0.375896 - 0.194038I$	$2.04642 + 3.11861I$	0
$u = 0.048541 + 1.020490I$ $a = -0.281366 + 0.850989I$ $b = -0.229769 - 0.550795I$	$2.37651 - 1.33885I$	0
$u = 0.048541 - 1.020490I$ $a = -0.281366 - 0.850989I$ $b = -0.229769 + 0.550795I$	$2.37651 + 1.33885I$	0
$u = 0.624839 + 0.743352I$ $a = 1.36143 + 0.58880I$ $b = 0.33558 + 1.44289I$	$1.44939 - 4.62743I$	0
$u = 0.624839 - 0.743352I$ $a = 1.36143 - 0.58880I$ $b = 0.33558 - 1.44289I$	$1.44939 + 4.62743I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.687698+0.766698I$ $a=\ \ 1.22927+1.70192I$ $b=\ \ 0.93164+1.16301I$	$1.08282-3.99338I$	0
$u=-0.687698-0.766698I$ $a=\ \ 1.22927-1.70192I$ $b=\ \ 0.93164-1.16301I$	$1.08282+3.99338I$	0
$u=\ \ 0.322455+0.986690I$ $a=\ \ 1.30133-0.65999I$ $b=\ \ 0.288260+1.111700I$	$1.00007-5.31249I$	0
$u=\ \ 0.322455-0.986690I$ $a=\ \ 1.30133+0.65999I$ $b=\ \ 0.288260-1.111700I$	$1.00007+5.31249I$	0
$u=-0.784066+0.556358I$ $a=\ \ 0.394134-0.253532I$ $b=\ \ 0.030061+0.779063I$	$-3.06388+0.25442I$	0
$u=-0.784066-0.556358I$ $a=\ \ 0.394134+0.253532I$ $b=\ \ 0.030061-0.779063I$	$-3.06388-0.25442I$	0
$u=\ \ 0.017373+0.959928I$ $a=-0.26438+1.69451I$ $b=-0.66691-1.45421I$	$5.75111-4.49804I$	0
$u=\ \ 0.017373-0.959928I$ $a=-0.26438-1.69451I$ $b=-0.66691+1.45421I$	$5.75111+4.49804I$	0
$u=\ \ 0.690019+0.794749I$ $a=-0.70119+1.83083I$ $b=-0.733382+1.200060I$	$1.64624-1.58894I$	0
$u=\ \ 0.690019-0.794749I$ $a=-0.70119-1.83083I$ $b=-0.733382-1.200060I$	$1.64624+1.58894I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.124250+1.052510I$ $a=-0.374282+1.019370I$ $b=\ \ 0.242021-0.356502I$	$2.47481-1.46151I$	0
$u=-0.124250-1.052510I$ $a=-0.374282-1.019370I$ $b=\ \ 0.242021+0.356502I$	$2.47481+1.46151I$	0
$u=\ \ 0.730207+0.768827I$ $a=\ \ 1.38692-0.88175I$ $b=\ \ 0.083254-1.033660I$	$1.61638+0.94446I$	0
$u=\ \ 0.730207-0.768827I$ $a=\ \ 1.38692+0.88175I$ $b=\ \ 0.083254+1.033660I$	$1.61638-0.94446I$	0
$u=-0.672932+0.819553I$ $a=-1.43281-0.80589I$ $b=\ \ 0.040967-0.796293I$	$0.78023+5.76542I$	0
$u=-0.672932-0.819553I$ $a=-1.43281+0.80589I$ $b=\ \ 0.040967+0.796293I$	$0.78023-5.76542I$	0
$u=-0.781702+0.719098I$ $a=\ \ 1.184710+0.338601I$ $b=\ \ 0.786645+0.475694I$	$-3.44393-1.01362I$	0
$u=-0.781702-0.719098I$ $a=\ \ 1.184710-0.338601I$ $b=\ \ 0.786645-0.475694I$	$-3.44393+1.01362I$	0
$u=-0.073144+0.932715I$ $a=-2.00962-2.39100I$ $b=-0.051227+1.230250I$	$6.80128+1.87487I$	0
$u=-0.073144-0.932715I$ $a=-2.00962+2.39100I$ $b=-0.051227-1.230250I$	$6.80128-1.87487I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.886558 + 0.603387I$ $a = -0.355164 + 0.151303I$ $b = -0.296286 + 1.079330I$	$-3.81694 + 3.79135I$	0
$u = 0.886558 - 0.603387I$ $a = -0.355164 - 0.151303I$ $b = -0.296286 - 1.079330I$	$-3.81694 - 3.79135I$	0
$u = 0.721149 + 0.797335I$ $a = 0.206670 + 0.515003I$ $b = 0.241979 - 1.324930I$	$0.03808 + 3.51542I$	0
$u = 0.721149 - 0.797335I$ $a = 0.206670 - 0.515003I$ $b = 0.241979 + 1.324930I$	$0.03808 - 3.51542I$	0
$u = -0.712957 + 0.814314I$ $a = -1.33242 + 0.66330I$ $b = -0.18819 + 1.77652I$	$1.68930 + 0.74766I$	0
$u = -0.712957 - 0.814314I$ $a = -1.33242 - 0.66330I$ $b = -0.18819 - 1.77652I$	$1.68930 - 0.74766I$	0
$u = -0.801154 + 0.742049I$ $a = 1.55777 + 0.32439I$ $b = 1.060750 + 0.043144I$	$-3.59680 - 1.35599I$	0
$u = -0.801154 - 0.742049I$ $a = 1.55777 - 0.32439I$ $b = 1.060750 - 0.043144I$	$-3.59680 + 1.35599I$	0
$u = -0.650109 + 0.880076I$ $a = 0.84298 + 1.23027I$ $b = -0.014753 - 1.331240I$	$3.78897 + 2.52031I$	0
$u = -0.650109 - 0.880076I$ $a = 0.84298 - 1.23027I$ $b = -0.014753 + 1.331240I$	$3.78897 - 2.52031I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.028887+0.899858I$ $a=\ \ 1.42340-3.31692I$ $b=-0.128305+1.165830I$	$4.74784+4.74110I$	0
$u=-0.028887-0.899858I$ $a=\ \ 1.42340+3.31692I$ $b=-0.128305-1.165830I$	$4.74784-4.74110I$	0
$u=-0.002396+0.896636I$ $a=\ \ 0.60825+1.82878I$ $b=\ \ 0.48954-1.57452I$	$6.04754-0.54483I$	0
$u=-0.002396-0.896636I$ $a=\ \ 0.60825-1.82878I$ $b=\ \ 0.48954+1.57452I$	$6.04754+0.54483I$	0
$u=\ \ 0.863693+0.692591I$ $a=\ \ 0.897732-0.804504I$ $b=\ \ 0.52708-1.32870I$	$0.56808+6.92229I$	0
$u=\ \ 0.863693-0.692591I$ $a=\ \ 0.897732+0.804504I$ $b=\ \ 0.52708+1.32870I$	$0.56808-6.92229I$	0
$u=-0.894065+0.688028I$ $a=-0.840171-0.806541I$ $b=-0.65417-1.37472I$	$-1.49753-12.96880I$	0
$u=-0.894065-0.688028I$ $a=-0.840171+0.806541I$ $b=-0.65417+1.37472I$	$-1.49753+12.96880I$	0
$u=-0.197669+1.111950I$ $a=-0.88725-1.44321I$ $b=-0.403719+1.351080I$	$7.76949+6.79943I$	0
$u=-0.197669-1.111950I$ $a=-0.88725+1.44321I$ $b=-0.403719-1.351080I$	$7.76949-6.79943I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.840905 + 0.754988I$ $a = -1.65520 + 0.40132I$ $b = -1.346250 - 0.168487I$	$-5.37206 + 6.09957I$	0
$u = \quad 0.840905 - 0.754988I$ $a = -1.65520 - 0.40132I$ $b = -1.346250 + 0.168487I$	$-5.37206 - 6.09957I$	0
$u = \quad 0.851238 + 0.147950I$ $a = -0.718097 - 0.554840I$ $b = -0.530662 - 1.202540I$	$1.65967 - 9.19748I$	0
$u = \quad 0.851238 - 0.147950I$ $a = -0.718097 + 0.554840I$ $b = -0.530662 + 1.202540I$	$1.65967 + 9.19748I$	0
$u = -0.681150 + 0.910444I$ $a = \quad 2.83794 - 0.14278I$ $b = \quad 0.011720 - 0.931068I$	$1.066200 - 0.522589I$	0
$u = -0.681150 - 0.910444I$ $a = \quad 2.83794 + 0.14278I$ $b = \quad 0.011720 + 0.931068I$	$1.066200 + 0.522589I$	0
$u = \quad 0.793490 + 0.819836I$ $a = -1.84178 + 0.28996I$ $b = -0.869259 - 0.565594I$	$-7.86699 - 0.96280I$	0
$u = \quad 0.793490 - 0.819836I$ $a = -1.84178 - 0.28996I$ $b = -0.869259 + 0.565594I$	$-7.86699 + 0.96280I$	0
$u = \quad 0.876571 + 0.732191I$ $a = -0.611541 + 0.448689I$ $b = -0.745897 + 0.893684I$	$-4.74494 - 1.40898I$	0
$u = \quad 0.876571 - 0.732191I$ $a = -0.611541 - 0.448689I$ $b = -0.745897 - 0.893684I$	$-4.74494 + 1.40898I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.790320 + 0.825636I$ $a = 0.961027 + 0.336341I$ $b = 0.329707 + 0.756995I$	$-2.17948 - 2.71087I$	0
$u = 0.790320 - 0.825636I$ $a = 0.961027 - 0.336341I$ $b = 0.329707 - 0.756995I$	$-2.17948 + 2.71087I$	0
$u = -0.852083 + 0.765794I$ $a = -0.894156 - 0.987576I$ $b = -0.486242 - 1.010700I$	$-6.42768 - 3.99066I$	0
$u = -0.852083 - 0.765794I$ $a = -0.894156 + 0.987576I$ $b = -0.486242 + 1.010700I$	$-6.42768 + 3.99066I$	0
$u = 0.655478 + 0.942520I$ $a = 1.152080 + 0.765922I$ $b = -0.40671 + 1.56053I$	$2.05184 - 0.42331I$	0
$u = 0.655478 - 0.942520I$ $a = 1.152080 - 0.765922I$ $b = -0.40671 - 1.56053I$	$2.05184 + 0.42331I$	0
$u = 0.689876 + 0.924925I$ $a = 2.63892 + 0.23797I$ $b = 0.76308 + 1.35140I$	$2.04503 - 3.73553I$	0
$u = 0.689876 - 0.924925I$ $a = 2.63892 - 0.23797I$ $b = 0.76308 - 1.35140I$	$2.04503 + 3.73553I$	0
$u = -0.702748 + 0.919564I$ $a = -1.24798 + 0.76455I$ $b = 0.28362 + 1.80278I$	$2.01595 + 4.68054I$	0
$u = -0.702748 - 0.919564I$ $a = -1.24798 - 0.76455I$ $b = 0.28362 - 1.80278I$	$2.01595 - 4.68054I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.884733+0.752880I$ $a=-0.531180+0.206844I$ $b=-0.200453+0.496698I$	$-5.74291-1.34202I$	0
$u=-0.884733-0.752880I$ $a=-0.531180-0.206844I$ $b=-0.200453-0.496698I$	$-5.74291+1.34202I$	0
$u=0.158242+1.155000I$ $a=-0.349033+0.640872I$ $b=0.028732-0.815651I$	$2.19994-1.27262I$	0
$u=0.158242-1.155000I$ $a=-0.349033-0.640872I$ $b=0.028732+0.815651I$	$2.19994+1.27262I$	0
$u=-0.684601+0.945585I$ $a=-2.77824-0.26400I$ $b=-0.94746+1.30952I$	$1.63233+9.30140I$	0
$u=-0.684601-0.945585I$ $a=-2.77824+0.26400I$ $b=-0.94746-1.30952I$	$1.63233-9.30140I$	0
$u=0.706799+0.930995I$ $a=-1.69494+1.17271I$ $b=-0.194351-1.328060I$	$0.44874-8.98252I$	0
$u=0.706799-0.930995I$ $a=-1.69494-1.17271I$ $b=-0.194351+1.328060I$	$0.44874+8.98252I$	0
$u=0.221920+1.151170I$ $a=0.69674-1.35373I$ $b=0.51132+1.34118I$	$6.10373-12.62740I$	0
$u=0.221920-1.151170I$ $a=0.69674+1.35373I$ $b=0.51132-1.34118I$	$6.10373+12.62740I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.437000+1.100790I$ $a=\ \ 0.864126+0.513330I$ $b=-0.264139-1.258760I$	$6.37212+0.50399I$	0
$u=-0.437000-1.100790I$ $a=\ \ 0.864126-0.513330I$ $b=-0.264139+1.258760I$	$6.37212-0.50399I$	0
$u=\ \ 0.708667+0.949566I$ $a=-2.83413-0.15041I$ $b=-0.128903-1.089500I$	$2.16540-6.44695I$	0
$u=\ \ 0.708667-0.949566I$ $a=-2.83413+0.15041I$ $b=-0.128903+1.089500I$	$2.16540+6.44695I$	0
$u=\ \ 0.741269+0.929721I$ $a=-0.056422+0.467169I$ $b=-0.332085+0.578033I$	$-1.85034-3.06303I$	0
$u=\ \ 0.741269-0.929721I$ $a=-0.056422-0.467169I$ $b=-0.332085-0.578033I$	$-1.85034+3.06303I$	0
$u=-0.198998+0.780233I$ $a=\ \ 0.716435+0.210614I$ $b=\ \ 0.764763+0.174582I$	$-1.97377+1.53826I$	0
$u=-0.198998-0.780233I$ $a=\ \ 0.716435-0.210614I$ $b=\ \ 0.764763-0.174582I$	$-1.97377-1.53826I$	0
$u=\ \ 0.760414+0.933967I$ $a=\ \ 1.058620-0.882520I$ $b=\ \ 0.928936-0.502379I$	$-7.51384-4.88368I$	0
$u=\ \ 0.760414-0.933967I$ $a=\ \ 1.058620+0.882520I$ $b=\ \ 0.928936+0.502379I$	$-7.51384+4.88368I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.826433+0.884407I$ $a=\ 0.502926+0.497730I$ $b=\ 0.716200+0.483626I$	$-5.32606-0.60628I$	0
$u=-0.826433-0.884407I$ $a=\ 0.502926-0.497730I$ $b=\ 0.716200-0.483626I$	$-5.32606+0.60628I$	0
$u=-0.762596+0.167367I$ $a=\ 0.796811-0.619266I$ $b=\ 0.374725-1.239250I$	$3.51291+3.79183I$	$-8.00000-3.66278I$
$u=-0.762596-0.167367I$ $a=\ 0.796811+0.619266I$ $b=\ 0.374725+1.239250I$	$3.51291-3.79183I$	$-8.00000+3.66278I$
$u=-0.717460+0.991265I$ $a=-1.61017-0.78407I$ $b=-0.785319+0.609006I$	$-2.61535+6.68659I$	0
$u=-0.717460-0.991265I$ $a=-1.61017+0.78407I$ $b=-0.785319-0.609006I$	$-2.61535-6.68659I$	0
$u=-0.737356+0.983139I$ $a=-1.34639-1.08442I$ $b=-1.122400+0.095325I$	$-2.86184+7.14763I$	0
$u=-0.737356-0.983139I$ $a=-1.34639+1.08442I$ $b=-1.122400-0.095325I$	$-2.86184-7.14763I$	0
$u=-0.025837+1.233540I$ $a=-0.059316+1.259640I$ $b=\ 0.106338-1.025650I$	$2.97005+2.13809I$	0
$u=-0.025837-1.233540I$ $a=-0.059316-1.259640I$ $b=\ 0.106338+1.025650I$	$2.97005-2.13809I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.847510+0.896957I$ $a=-1.069150-0.156979I$ $b=-0.667049+0.655089I$	$-5.30570+6.81308I$	0
$u=-0.847510-0.896957I$ $a=-1.069150+0.156979I$ $b=-0.667049-0.655089I$	$-5.30570-6.81308I$	0
$u=0.417407+1.173910I$ $a=-0.785299+0.387509I$ $b=0.387239-1.149160I$	$4.97232+4.61880I$	0
$u=0.417407-1.173910I$ $a=-0.785299-0.387509I$ $b=0.387239+1.149160I$	$4.97232-4.61880I$	0
$u=-0.286583+0.697207I$ $a=1.24082+0.82984I$ $b=0.04312-1.41819I$	$4.08895+1.36538I$	$-8.00000-3.72323I$
$u=-0.286583-0.697207I$ $a=1.24082-0.82984I$ $b=0.04312+1.41819I$	$4.08895-1.36538I$	$-8.00000+3.72323I$
$u=0.761348+0.992134I$ $a=1.18922-1.23499I$ $b=1.402570-0.090730I$	$-4.63912-12.08370I$	0
$u=0.761348-0.992134I$ $a=1.18922+1.23499I$ $b=1.402570+0.090730I$	$-4.63912+12.08370I$	0
$u=-0.772167+0.990529I$ $a=2.08639-0.10299I$ $b=0.500777-1.055170I$	$-5.73047+10.04250I$	0
$u=-0.772167-0.990529I$ $a=2.08639+0.10299I$ $b=0.500777+1.055170I$	$-5.73047-10.04250I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.733219 + 0.082682I$ $a = -0.431782 + 0.836904I$ $b = -0.245045 + 0.909165I$	$-1.94022 + 1.78020I$	$-11.45430 - 3.94650I$
$u = 0.733219 - 0.082682I$ $a = -0.431782 - 0.836904I$ $b = -0.245045 - 0.909165I$	$-1.94022 - 1.78020I$	$-11.45430 + 3.94650I$
$u = -0.690336 + 1.061470I$ $a = -1.41515 - 0.54700I$ $b = -0.125386 + 0.916784I$	$-1.60825 + 5.34108I$	0
$u = -0.690336 - 1.061470I$ $a = -1.41515 + 0.54700I$ $b = -0.125386 - 0.916784I$	$-1.60825 - 5.34108I$	0
$u = 0.747130 + 1.031610I$ $a = -2.28323 + 0.30120I$ $b = -0.53260 - 1.36857I$	$1.60981 - 12.91710I$	0
$u = 0.747130 - 1.031610I$ $a = -2.28323 - 0.30120I$ $b = -0.53260 + 1.36857I$	$1.60981 + 12.91710I$	0
$u = -0.785444 + 1.004640I$ $a = 0.056048 + 0.131552I$ $b = 0.169789 + 0.357159I$	$-4.96281 + 7.52395I$	0
$u = -0.785444 - 1.004640I$ $a = 0.056048 - 0.131552I$ $b = 0.169789 - 0.357159I$	$-4.96281 - 7.52395I$	0
$u = 0.779412 + 1.017680I$ $a = 1.48728 - 0.47472I$ $b = 0.679389 + 1.033730I$	$-3.86949 - 4.73325I$	0
$u = 0.779412 - 1.017680I$ $a = 1.48728 + 0.47472I$ $b = 0.679389 - 1.033730I$	$-3.86949 + 4.73325I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.757416+1.046400I$ $a=\ \ 2.19473+0.40576I$ $b=\ \ 0.64594-1.41898I$	$-0.3875+19.0826I$	0
$u=-0.757416-1.046400I$ $a=\ \ 2.19473-0.40576I$ $b=\ \ 0.64594+1.41898I$	$-0.3875-19.0826I$	0
$u=\ \ 0.728582+1.081060I$ $a=\ \ 1.45635-0.52465I$ $b=\ \ 0.273313+1.158300I$	$-2.36888-9.78045I$	0
$u=\ \ 0.728582-1.081060I$ $a=\ \ 1.45635+0.52465I$ $b=\ \ 0.273313-1.158300I$	$-2.36888+9.78045I$	0
$u=-0.670414+0.061548I$ $a=-0.883943-0.504311I$ $b=-0.846187+0.248725I$	$-1.25905-4.10688I$	$-12.29238+5.14366I$
$u=-0.670414-0.061548I$ $a=-0.883943+0.504311I$ $b=-0.846187-0.248725I$	$-1.25905+4.10688I$	$-12.29238-5.14366I$
$u=-0.373579+0.451382I$ $a=-0.17418-2.00459I$ $b=-0.301836+0.404575I$	$-3.12408+0.64190I$	$-10.3906-9.6269I$
$u=-0.373579-0.451382I$ $a=-0.17418+2.00459I$ $b=-0.301836-0.404575I$	$-3.12408-0.64190I$	$-10.3906+9.6269I$
$u=\ \ 0.555860+0.079655I$ $a=\ \ 0.986163+0.461106I$ $b=\ \ 0.717460+0.092449I$	$-0.436395+0.147603I$	$-10.87352+0.55690I$
$u=\ \ 0.555860-0.079655I$ $a=\ \ 0.986163-0.461106I$ $b=\ \ 0.717460-0.092449I$	$-0.436395-0.147603I$	$-10.87352-0.55690I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.397375$ $a = 0.961032$ $b = 0.451366$	-0.689241	-14.2140
$u = -0.199448 + 0.110060I$ $a = 3.73682 - 2.06229I$ $b = -0.157294 - 1.269930I$	$3.89546 + 0.90103I$	$-5.37105 - 2.93314I$
$u = -0.199448 - 0.110060I$ $a = 3.73682 + 2.06229I$ $b = -0.157294 + 1.269930I$	$3.89546 - 0.90103I$	$-5.37105 + 2.93314I$
$u = -0.038914 + 0.138913I$ $a = 6.81455 + 1.81439I$ $b = 0.428741 + 1.175730I$	$2.55492 - 4.41403I$	$-7.39626 + 1.76727I$
$u = -0.038914 - 0.138913I$ $a = 6.81455 - 1.81439I$ $b = 0.428741 - 1.175730I$	$2.55492 + 4.41403I$	$-7.39626 - 1.76727I$

II.

$\boldsymbol{I_2^u = \langle -u^{25}-5u^{23}+\cdots+b+u,\ u^{26}-3u^{25}+\cdots+a+1,\ u^{27}+6u^{25}+\cdots+4u+1\rangle}$

(i) Arc colorings

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

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

$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^{26}+3u^{25}+\cdots+3u-1 \\ u^{25}+5u^{23}+\cdots+u^2-u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^{26}+2u^{25}+\cdots+4u-1 \\ u^{25}+5u^{23}+\cdots+u^2-u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^{23}+2u^{22}+\cdots+7u+3 \\ 2u^{26}+12u^{24}+\cdots+7u^2+2u \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} u^3 \\ u^5+u^3+u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^{26}+6u^{24}+\cdots+11u^2-6u \\ -2u^{25}-11u^{23}+\cdots-10u-3 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -3u^{26}-2u^{25}+\cdots-4u+3 \\ 2u^{26}+3u^{25}+\cdots+8u+1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^5+u \\ u^7+u^5+2u^3+u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^{26}+3u^{25}+\cdots-2u-2 \\ -u^{23}-6u^{21}+\cdots-6u-1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -6u^{26}+8u^{25}-36u^{24}+42u^{23}-132u^{22}+137u^{21}-339u^{20}+318u^{19}-669u^{18}+557u^{17}-1060u^{16}+791u^{15}-1376u^{14}+897u^{13}-1484u^{12}+842u^{11}-1326u^{10}+633u^9-970u^8+371u^7-556u^6+158u^5-236u^4+37u^3-54u^2-3u-6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{27} - 13u^{26} + \cdots + 13u - 1$
c_2	$u^{27} + u^{26} + \cdots - u - 1$
c_3	$u^{27} + 14u^{25} + \cdots + 4u - 1$
c_4	$u^{27} + 6u^{25} + \cdots + 4u + 1$
c_5	$u^{27} - u^{26} + \cdots - u + 1$
c_6	$u^{27} + u^{26} + \cdots + 3u - 1$
c_7	$u^{27} + 14u^{25} + \cdots + 4u + 1$
c_8	$u^{27} + 5u^{26} + \cdots - u - 1$
c_9	$u^{27} + 12u^{26} + \cdots + 2u - 1$
c_{10}	$u^{27} + 6u^{25} + \cdots + 4u - 1$
c_{11}	$u^{27} - 12u^{26} + \cdots + 2u + 1$
c_{12}	$u^{27} - u^{26} + \cdots - 5u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{27} + 15y^{26} + \cdots - 7y - 1$
c_2, c_5	$y^{27} - 13y^{26} + \cdots + 13y - 1$
c_3, c_7	$y^{27} + 28y^{26} + \cdots + 128y^2 - 1$
c_4, c_{10}	$y^{27} + 12y^{26} + \cdots + 2y - 1$
c_6	$y^{27} - 7y^{26} + \cdots + 5y - 1$
c_8	$y^{27} - 7y^{26} + \cdots - y - 1$
c_9, c_{11}	$y^{27} + 16y^{26} + \cdots + 198y - 1$
c_{12}	$y^{27} + y^{26} + \cdots + 7y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.761479+0.640887I$ $a=\ 0.910448-0.166609I$ $b=\ 0.579634+0.474240I$	$-4.02360-0.21116I$	$-16.7658-0.3372I$
$u=-0.761479-0.640887I$ $a=\ 0.910448+0.166609I$ $b=\ 0.579634-0.474240I$	$-4.02360+0.21116I$	$-16.7658+0.3372I$
$u=-0.198504+0.997767I$ $a=\ 1.12532+1.56160I$ $b=-0.260908-1.127740I$	$4.21139-3.20224I$	$-3.85581+2.20635I$
$u=-0.198504-0.997767I$ $a=\ 1.12532-1.56160I$ $b=-0.260908+1.127740I$	$4.21139+3.20224I$	$-3.85581-2.20635I$
$u=-0.690133+0.811068I$ $a=\ 1.097110+0.487259I$ $b=\ 0.449305+1.221140I$	$0.71077-2.64443I$	$-6.47183+0.74363I$
$u=-0.690133-0.811068I$ $a=\ 1.097110-0.487259I$ $b=\ 0.449305-1.221140I$	$0.71077+2.64443I$	$-6.47183-0.74363I$
$u=\ 0.226267+0.902043I$ $a=-1.08139+1.64350I$ $b=\ 0.096987-1.351070I$	$5.09894-1.89183I$	$-2.01080+5.17175I$
$u=\ 0.226267-0.902043I$ $a=-1.08139-1.64350I$ $b=\ 0.096987+1.351070I$	$5.09894+1.89183I$	$-2.01080-5.17175I$
$u=\ 0.664641+0.849545I$ $a=\ 0.418217+0.828352I$ $b=-0.22181+1.55034I$	$2.37091-3.03914I$	$-4.82866+3.51658I$
$u=\ 0.664641-0.849545I$ $a=\ 0.418217-0.828352I$ $b=-0.22181-1.55034I$	$2.37091+3.03914I$	$-4.82866-3.51658I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.663771 + 0.885311I$ $a = 1.96946 + 0.14600I$ $b = 0.15156 + 1.55129I$	$2.48434 - 2.11146I$	$-4.79115 + 2.62168I$
$u = 0.663771 - 0.885311I$ $a = 1.96946 - 0.14600I$ $b = 0.15156 - 1.55129I$	$2.48434 + 2.11146I$	$-4.79115 - 2.62168I$
$u = 0.883289 + 0.721673I$ $a = -0.525680 + 0.315492I$ $b = -0.295318 + 0.501734I$	$-5.69432 + 2.18099I$	$-12.30398 - 4.36845I$
$u = 0.883289 - 0.721673I$ $a = -0.525680 - 0.315492I$ $b = -0.295318 - 0.501734I$	$-5.69432 - 2.18099I$	$-12.30398 + 4.36845I$
$u = -0.680382 + 0.924373I$ $a = -2.53920 - 0.70489I$ $b = -0.409343 + 1.262820I$	$1.06768 + 7.93216I$	$-6.00345 - 6.85178I$
$u = -0.680382 - 0.924373I$ $a = -2.53920 + 0.70489I$ $b = -0.409343 - 1.262820I$	$1.06768 - 7.93216I$	$-6.00345 + 6.85178I$
$u = 0.247679 + 0.797356I$ $a = -0.552494 + 0.434314I$ $b = -0.279994 - 1.357420I$	$4.69675 - 0.23962I$	$-1.79115 + 0.59356I$
$u = 0.247679 - 0.797356I$ $a = -0.552494 - 0.434314I$ $b = -0.279994 + 1.357420I$	$4.69675 + 0.23962I$	$-1.79115 - 0.59356I$
$u = -0.069959 + 1.240000I$ $a = 0.215684 + 0.785221I$ $b = -0.096210 - 0.674840I$	$1.74167 + 1.35927I$	$-19.8098 - 1.0921I$
$u = -0.069959 - 1.240000I$ $a = 0.215684 - 0.785221I$ $b = -0.096210 + 0.674840I$	$1.74167 - 1.35927I$	$-19.8098 + 1.0921I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.705174+1.029550I$ $a=-1.31848-0.83487I$ $b=-0.611774+0.677874I$	$-2.87133+5.81024I$	$-12.36703-3.92107I$
$u=-0.705174-1.029550I$ $a=-1.31848+0.83487I$ $b=-0.611774-0.677874I$	$-2.87133-5.81024I$	$-12.36703+3.92107I$
$u=-0.229904+0.705974I$ $a=\ \ 0.825900-1.141740I$ $b=\ \ 0.413298-1.067590I$	$3.08394+5.15702I$	$-1.88648-8.37181I$
$u=-0.229904-0.705974I$ $a=\ \ 0.825900+1.141740I$ $b=\ \ 0.413298+1.067590I$	$3.08394-5.15702I$	$-1.88648+8.37181I$
$u=\ \ 0.782849+1.022960I$ $a=\ \ 1.086590-0.088051I$ $b=\ \ 0.360967+0.607311I$	$-4.77691-8.35173I$	$-9.42923+9.62881I$
$u=\ \ 0.782849-1.022960I$ $a=\ \ 1.086590+0.088051I$ $b=\ \ 0.360967-0.607311I$	$-4.77691+8.35173I$	$-9.42923-9.62881I$
$u=-0.265919$ $a=-3.26296$ $b=\ \ 0.247203$	-3.04098	-11.3700

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{27}-13u^{26}+\cdots+13u-1)(u^{135}+56u^{134}+\cdots+282415u+5041)$
c_2	$(u^{27}+u^{26}+\cdots-u-1)(u^{135}+2u^{134}+\cdots-183u+71)$
c_3	$(u^{27}+14u^{25}+\cdots+4u-1)(u^{135}+u^{134}+\cdots+14458u+16279)$
c_4	$(u^{27}+6u^{25}+\cdots+4u+1)(u^{135}-u^{134}+\cdots-10u+1)$
c_5	$(u^{27}-u^{26}+\cdots-u+1)(u^{135}+2u^{134}+\cdots-183u+71)$
c_6	$(u^{27}+u^{26}+\cdots+3u-1)(u^{135}-20u^{134}+\cdots+12813u+3131)$
c_7	$(u^{27}+14u^{25}+\cdots+4u+1)(u^{135}+u^{134}+\cdots+14458u+16279)$
c_8	$(u^{27}+5u^{26}+\cdots-u-1)(u^{135}-12u^{134}+\cdots-359245u+99529)$
c_9	$(u^{27}+12u^{26}+\cdots+2u-1)(u^{135}-45u^{134}+\cdots-76u+1)$
c_{10}	$(u^{27}+6u^{25}+\cdots+4u-1)(u^{135}-u^{134}+\cdots-10u+1)$
c_{11}	$(u^{27}-12u^{26}+\cdots+2u+1)(u^{135}-45u^{134}+\cdots-76u+1)$
c_{12}	$(u^{27}-u^{26}+\cdots-5u+1)(u^{135}+2u^{134}+\cdots-115u+457)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{27}+15y^{26}+\cdots-7y-1)$ $\cdot(y^{135}+60y^{134}+\cdots+2060543075y-25411681)$
c_2, c_5	$(y^{27}-13y^{26}+\cdots+13y-1)(y^{135}-56y^{134}+\cdots+282415y-5041)$
c_3, c_7	$(y^{27}+28y^{26}+\cdots+128y^2-1)$ $\cdot(y^{135}+97y^{134}+\cdots-11715822106y-265005841)$
c_4, c_{10}	$(y^{27}+12y^{26}+\cdots+2y-1)(y^{135}+45y^{134}+\cdots-76y-1)$
c_6	$(y^{27}-7y^{26}+\cdots+5y-1)$ $\cdot(y^{135}-22y^{134}+\cdots+518733671y-9803161)$
c_8	$(y^{27}-7y^{26}+\cdots-y-1)$ $\cdot(y^{135}+26y^{134}+\cdots-71452162795y-9906021841)$
c_9, c_{11}	$(y^{27}+16y^{26}+\cdots+198y-1)(y^{135}+101y^{134}+\cdots+1848y-1)$
c_{12}	$(y^{27}+y^{26}+\cdots+7y-1)(y^{135}-10y^{134}+\cdots+1.22334\times10^7y-208849)$