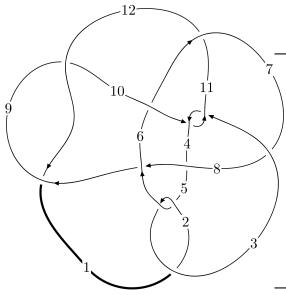
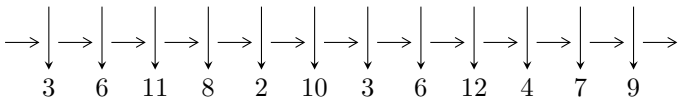
$12n_{0406}$ $(K12n_{0406})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -5.87440 \times 10^{71} u^{62} - 1.29008 \times 10^{72} u^{61} + \cdots + 1.81459 \times 10^{71} b - 1.38281 \times 10^{71},$$
$$- 2.97873 \times 10^{71} u^{62} + 5.61189 \times 10^{71} u^{61} + \cdots + 1.81459 \times 10^{71} a + 2.70646 \times 10^{72},\ u^{63} + 2u^{62} + \cdots + 6u +$$
$$I_2^u = \langle -10479u^{21} - 2016u^{20} + \cdots + 5129b - 19746,\ 37379u^{21} + 17665u^{20} + \cdots + 5129a + 15443,$$
$$u^{22} + u^{21} + \cdots - u - 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 85 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.

$$\boldsymbol{I_1^u = \langle -5.87\times 10^{71}u^{62} - 1.29\times 10^{72}u^{61} + \cdots + 1.81\times 10^{71}b - 1.38\times 10^{71},\ -2.98\times 10^{71}u^{62} + 5.61\times 10^{71}u^{61} + \cdots + 1.81\times 10^{71}a + 2.71\times 10^{72},\ u^{63} + 2u^{62} + \cdots + 6u + 1\rangle}$$

(i) Arc colorings

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

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

$$a_7 = \begin{pmatrix} 1.64155u^{62} - 3.09266u^{61} + \cdots - 78.0276u - 14.9150 \\ 3.23732u^{62} + 7.10951u^{61} + \cdots + 9.94343u + 0.762053 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -4.56195u^{62} - 4.68616u^{61} + \cdots + 86.2185u + 15.8520 \\ -3.41127u^{62} - 5.48261u^{61} + \cdots + 26.0173u + 4.13758 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 3.21507u^{62} + 3.09966u^{61} + \cdots - 48.7262u - 10.7328 \\ 5.23718u^{62} + 12.3432u^{61} + \cdots + 19.3996u + 1.89905 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 4.87888u^{62} + 4.01685u^{61} + \cdots - 68.0842u - 14.1530 \\ 3.23732u^{62} + 7.10951u^{61} + \cdots + 9.94343u + 0.762053 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 10.1884u^{62} + 21.3682u^{61} + \cdots - 36.8563u - 13.2634 \\ 4.69842u^{62} + 7.98433u^{61} + \cdots - 13.0129u - 2.93288 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 9.84597u^{62} + 20.6041u^{61} + \cdots - 38.4795u - 13.7100 \\ 5.22967u^{62} + 9.33504u^{61} + \cdots - 13.8182u - 3.30023 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -5.48003u^{62} - 12.9936u^{61} + \cdots + 17.9312u + 10.1134 \\ 0.614387u^{62} + 2.61208u^{61} + \cdots - 6.75173u - 1.33074 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -6.73921u^{62} - 6.56138u^{61} + \cdots + 85.1609u + 19.5180 \\ 0.137452u^{62} + 2.12280u^{61} + \cdots + 9.76922u + 1.53689 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 3.92172u^{62} - 2.79562u^{61} + \cdots - 66.9143u - 26.6390$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{63}+82u^{62}+\cdots+19u+1$
c_2, c_5	$u^{63}+4u^{62}+\cdots-u+1$
c_3, c_{10}	$u^{63}+2u^{62}+\cdots+6u+1$
c_4	$u^{63}-45u^{61}+\cdots+113780u+6263$
c_6	$u^{63}+6u^{62}+\cdots+103u+43$
c_7	$u^{63}-u^{62}+\cdots+83083u+12017$
c_8	$u^{63}+11u^{62}+\cdots+1626730u+769055$
c_9, c_{12}	$u^{63}-3u^{62}+\cdots+4u+1$
c_{11}	$u^{63}-2u^{62}+\cdots+197u+23$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{63} - 190y^{62} + \cdots - 761y - 1$
c_2, c_5	$y^{63} - 82y^{62} + \cdots + 19y - 1$
c_3, c_{10}	$y^{63} + 34y^{62} + \cdots - 8y - 1$
c_4	$y^{63} - 90y^{62} + \cdots + 1565666672y - 39225169$
c_6	$y^{63} + 10y^{62} + \cdots + 1579y - 1849$
c_7	$y^{63} - 19y^{62} + \cdots + 1438703057y - 144408289$
c_8	$y^{63} - 105y^{62} + \cdots + 44795152652180y - 591445593025$
c_9, c_{12}	$y^{63} + 27y^{62} + \cdots - 16y - 1$
c_{11}	$y^{63} + 12y^{62} + \cdots - 15287y - 529$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.990747+0.105264I$ $a=\ 0.227845-0.215922I$ $b=\ 0.595296+0.556231I$	$-1.43917-1.61508I$	$-12.00000+4.60707I$
$u=-0.990747-0.105264I$ $a=\ 0.227845+0.215922I$ $b=\ 0.595296-0.556231I$	$-1.43917+1.61508I$	$-12.00000-4.60707I$
$u=-0.362778+0.887366I$ $a=\ 0.602460-0.037525I$ $b=\ 0.740076-0.367736I$	$1.42285+4.05328I$	$-10.60708-8.49104I$
$u=-0.362778-0.887366I$ $a=\ 0.602460+0.037525I$ $b=\ 0.740076+0.367736I$	$1.42285-4.05328I$	$-10.60708+8.49104I$
$u=\ 0.946133+0.149538I$ $a=\ 0.157340+0.179031I$ $b=-0.703205+0.947694I$	$-0.51505+4.80413I$	$-13.8646-5.8524I$
$u=\ 0.946133-0.149538I$ $a=\ 0.157340-0.179031I$ $b=-0.703205-0.947694I$	$-0.51505-4.80413I$	$-13.8646+5.8524I$
$u=-0.302806+1.009340I$ $a=-0.06447+2.59329I$ $b=\ 0.79301-1.46212I$	$3.40020+4.23251I$	0
$u=-0.302806-1.009340I$ $a=-0.06447-2.59329I$ $b=\ 0.79301+1.46212I$	$3.40020-4.23251I$	0
$u=\ 0.366638+1.026710I$ $a=\ 1.75134-0.08856I$ $b=\ 0.551334+0.324588I$	$-7.10790-4.96709I$	0
$u=\ 0.366638-1.026710I$ $a=\ 1.75134+0.08856I$ $b=\ 0.551334-0.324588I$	$-7.10790+4.96709I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.432485 + 1.010080I$ $a = -0.63914 + 1.30892I$ $b = 0.80072 - 1.37567I$	$-7.61563 - 1.01111I$	0
$u = 0.432485 - 1.010080I$ $a = -0.63914 - 1.30892I$ $b = 0.80072 + 1.37567I$	$-7.61563 + 1.01111I$	0
$u = -1.085820 + 0.228198I$ $a = 0.0071519 + 0.0592893I$ $b = -0.908974 - 1.015940I$	$-9.06594 - 9.39819I$	0
$u = -1.085820 - 0.228198I$ $a = 0.0071519 - 0.0592893I$ $b = -0.908974 + 1.015940I$	$-9.06594 + 9.39819I$	0
$u = 0.239732 + 0.837215I$ $a = 0.16007 + 1.91347I$ $b = -0.875933 - 0.420278I$	$-1.11761 - 1.26731I$	$-15.1175 + 4.6617I$
$u = 0.239732 - 0.837215I$ $a = 0.16007 - 1.91347I$ $b = -0.875933 + 0.420278I$	$-1.11761 + 1.26731I$	$-15.1175 - 4.6617I$
$u = 0.264496 + 0.829236I$ $a = 0.10067 + 1.46934I$ $b = -1.175250 - 0.245574I$	$-1.14587 - 1.30347I$	$-17.5152 + 4.9826I$
$u = 0.264496 - 0.829236I$ $a = 0.10067 - 1.46934I$ $b = -1.175250 + 0.245574I$	$-1.14587 + 1.30347I$	$-17.5152 - 4.9826I$
$u = -0.376805 + 1.065330I$ $a = -0.80125 - 1.37166I$ $b = -1.200310 + 0.294963I$	$-6.60608 + 0.34953I$	0
$u = -0.376805 - 1.065330I$ $a = -0.80125 + 1.37166I$ $b = -1.200310 - 0.294963I$	$-6.60608 - 0.34953I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.444883+1.040440I$ $a=\ \ 1.288050+0.198665I$ $b=-1.64815-0.93772I$	$-7.15825+6.18151I$	0
$u=-0.444883-1.040440I$ $a=\ \ 1.288050-0.198665I$ $b=-1.64815+0.93772I$	$-7.15825-6.18151I$	0
$u=\ \ 0.266646+0.813283I$ $a=\ \ 0.505244+0.982367I$ $b=-1.379120-0.085398I$	$-1.17639-1.29143I$	$-15.3554+5.4557I$
$u=\ \ 0.266646-0.813283I$ $a=\ \ 0.505244-0.982367I$ $b=-1.379120+0.085398I$	$-1.17639+1.29143I$	$-15.3554-5.4557I$
$u=-0.896656+0.823164I$ $a=-0.512264+0.204586I$ $b=\ \ 0.135578+0.584282I$	$0.351157+0.534295I$	0
$u=-0.896656-0.823164I$ $a=-0.512264-0.204586I$ $b=\ \ 0.135578-0.584282I$	$0.351157-0.534295I$	0
$u=-0.401918+1.182270I$ $a=-0.24327-1.63490I$ $b=-0.48135+1.46123I$	$3.27235+3.48208I$	0
$u=-0.401918-1.182270I$ $a=-0.24327+1.63490I$ $b=-0.48135-1.46123I$	$3.27235-3.48208I$	0
$u=\ \ 0.394861+1.192190I$ $a=\ \ 0.12689-1.95895I$ $b=\ \ 0.784716+1.058410I$	$6.38319-6.23226I$	0
$u=\ \ 0.394861-1.192190I$ $a=\ \ 0.12689+1.95895I$ $b=\ \ 0.784716-1.058410I$	$6.38319+6.23226I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.154944+0.706018I$ $a=-0.650670-0.500412I$ $b=\ \ 1.19705+0.87628I$	$2.19848-1.89748I$	$-9.51830-4.60789I$
$u=-0.154944-0.706018I$ $a=-0.650670+0.500412I$ $b=\ \ 1.19705-0.87628I$	$2.19848+1.89748I$	$-9.51830+4.60789I$
$u=-0.367705+1.239600I$ $a=-0.285293-1.181370I$ $b=-0.007485+0.931592I$	$3.24616+2.75157I$	0
$u=-0.367705-1.239600I$ $a=-0.285293+1.181370I$ $b=-0.007485-0.931592I$	$3.24616-2.75157I$	0
$u=\ \ 0.313182+1.259970I$ $a=\ \ 0.543704-0.954155I$ $b=\ \ 0.172815+1.016880I$	$4.29462+0.53295I$	0
$u=\ \ 0.313182-1.259970I$ $a=\ \ 0.543704+0.954155I$ $b=\ \ 0.172815-1.016880I$	$4.29462-0.53295I$	0
$u=-0.558772+1.190380I$ $a=\ \ 0.410167+0.900060I$ $b=\ \ 0.693773-0.904421I$	$2.19335+4.97234I$	0
$u=-0.558772-1.190380I$ $a=\ \ 0.410167-0.900060I$ $b=\ \ 0.693773+0.904421I$	$2.19335-4.97234I$	0
$u=\ \ 0.604819+1.173120I$ $a=-0.686547+0.580713I$ $b=\ \ 0.107053-0.612042I$	$5.07461-2.21684I$	0
$u=\ \ 0.604819-1.173120I$ $a=-0.686547-0.580713I$ $b=\ \ 0.107053+0.612042I$	$5.07461+2.21684I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.536211 + 1.239640I$ $a = -0.26898 + 1.68491I$ $b = -0.95890 - 1.43950I$	$2.83710 - 10.11180I$	0
$u = 0.536211 - 1.239640I$ $a = -0.26898 - 1.68491I$ $b = -0.95890 + 1.43950I$	$2.83710 + 10.11180I$	0
$u = -0.515239 + 1.259240I$ $a = 0.30480 + 1.49648I$ $b = 0.806111 - 0.864148I$	$2.16604 + 6.91375I$	0
$u = -0.515239 - 1.259240I$ $a = 0.30480 - 1.49648I$ $b = 0.806111 + 0.864148I$	$2.16604 - 6.91375I$	0
$u = 0.608595 + 0.144028I$ $a = 0.067285 - 0.477371I$ $b = 0.757994 + 0.677519I$	$2.72700 - 2.52576I$	$-6.98143 + 1.65333I$
$u = 0.608595 - 0.144028I$ $a = 0.067285 + 0.477371I$ $b = 0.757994 - 0.677519I$	$2.72700 + 2.52576I$	$-6.98143 - 1.65333I$
$u = 0.054830 + 0.620583I$ $a = -0.55470 - 4.38288I$ $b = -0.332756 - 0.253543I$	$-8.90568 + 2.29149I$	$-19.8574 - 3.6503I$
$u = 0.054830 - 0.620583I$ $a = -0.55470 + 4.38288I$ $b = -0.332756 + 0.253543I$	$-8.90568 - 2.29149I$	$-19.8574 + 3.6503I$
$u = -0.606194 + 0.122041I$ $a = 0.612063 + 0.621270I$ $b = -0.262217 + 0.621399I$	$-0.290214 - 0.243550I$	$-13.68198 + 0.43894I$
$u = -0.606194 - 0.122041I$ $a = 0.612063 - 0.621270I$ $b = -0.262217 - 0.621399I$	$-0.290214 + 0.243550I$	$-13.68198 - 0.43894I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.614828+1.271960I$ $a=-0.31937-1.70637I$ $b=-1.08251+1.27663I$	$-5.7998+15.4283I$	0
$u=-0.614828-1.271960I$ $a=-0.31937+1.70637I$ $b=-1.08251-1.27663I$	$-5.7998-15.4283I$	0
$u=1.40889+0.36230I$ $a=-0.0311359+0.0161896I$ $b=0.478420-0.426890I$	$-12.34440+0.36923I$	0
$u=1.40889-0.36230I$ $a=-0.0311359-0.0161896I$ $b=0.478420+0.426890I$	$-12.34440-0.36923I$	0
$u=0.69263+1.31248I$ $a=0.097753-1.087490I$ $b=0.882208+0.799377I$	$-9.07833-7.42766I$	0
$u=0.69263-1.31248I$ $a=0.097753+1.087490I$ $b=0.882208-0.799377I$	$-9.07833+7.42766I$	0
$u=-0.20493+1.49295I$ $a=0.516419+0.852002I$ $b=-0.329934-1.026900I$	$-3.00927-4.46302I$	0
$u=-0.20493-1.49295I$ $a=0.516419-0.852002I$ $b=-0.329934+1.026900I$	$-3.00927+4.46302I$	0
$u=0.257688+0.407987I$ $a=1.88508-3.61639I$ $b=-0.199922+1.300740I$	$-9.34370-2.46865I$	$-15.4465+3.3962I$
$u=0.257688-0.407987I$ $a=1.88508+3.61639I$ $b=-0.199922-1.300740I$	$-9.34370+2.46865I$	$-15.4465-3.3962I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.322413+0.231256I$ $a=-2.69396-3.36716I$ $b=-0.793788+1.024690I$	$-9.22509-2.54978I$	$-16.0238+1.2523I$
$u=-0.322413-0.231256I$ $a=-2.69396+3.36716I$ $b=-0.793788-1.024690I$	$-9.22509+2.54978I$	$-16.0238-1.2523I$
$u=-0.360773$ $a=\quad 0.773414$ $b=-0.312684$	-0.615548	-16.1410

II. $I_2^u = \langle -10479u^{21} - 2016u^{20} + \cdots + 5129b - 19746,\ 37379u^{21} + 17665u^{20} + \cdots + 5129a + 15443,\ u^{22} + u^{21} + \cdots - u - 1 \rangle$

(i) Arc colorings

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

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

$$a_7 = \begin{pmatrix} -7.28778u^{21} - 3.44414u^{20} + \cdots + 10.7421u - 3.01092 \\ 2.04309u^{21} + 0.393059u^{20} + \cdots - 3.29674u + 3.84987 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -9.38760u^{21} - 13.6036u^{20} + \cdots + 23.3843u + 11.7306 \\ 3.05108u^{21} + 2.68317u^{20} + \cdots - 7.03958u + 0.405732 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -4.17235u^{21} - 2.57224u^{20} + \cdots + 7.18698u - 0.399493 \\ 3.95438u^{21} + 1.46617u^{20} + \cdots - 5.97992u + 4.21778 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -5.24469u^{21} - 3.05108u^{20} + \cdots + 7.44531u + 0.838955 \\ 2.04309u^{21} + 0.393059u^{20} + \cdots - 3.29674u + 3.84987 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -5.16650u^{21} - 1.55508u^{20} + \cdots + 6.59466u - 5.01716 \\ 1.12127u^{21} - 0.110938u^{20} + \cdots + 0.852603u - 0.00623903 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -7.12673u^{21} - 2.03841u^{20} + \cdots + 8.16689u - 6.61727 \\ 0.0163775u^{21} - 0.551959u^{20} + \cdots + 1.94151u - 0.129460 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 4.62800u^{21} + 0.108793u^{20} + \cdots - 3.52856u + 6.08345 \\ -0.955937u^{21} + 0.0625853u^{20} + \cdots + 0.271203u - 1.25307 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 6.06200u^{21} + 2.98187u^{20} + \cdots - 5.07857u + 0.652759 \\ -2.21213u^{21} - 2.08891u^{20} + \cdots + 4.61474u + 2.20062 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{27167}{5129}u^{21} + \frac{37974}{5129}u^{20} + \cdots - \frac{138057}{5129}u - \frac{95072}{5129}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{22} - 25u^{21} + \cdots - 94u + 9$
c_2	$u^{22} + 3u^{21} + \cdots + 4u - 3$
c_3	$u^{22} - u^{21} + \cdots + u - 1$
c_4	$u^{22} + 3u^{21} + \cdots + 9u - 1$
c_5	$u^{22} - 3u^{21} + \cdots - 4u - 3$
c_6	$u^{22} + u^{21} + \cdots - 6u + 1$
c_7	$u^{22} - 3u^{20} + \cdots - 42u - 7$
c_8	$u^{22} + 16u^{21} + \cdots - 21u + 1$
c_9	$u^{22} - 2u^{21} + \cdots - 7u + 7$
c_{10}	$u^{22} + u^{21} + \cdots - u - 1$
c_{11}	$u^{22} + u^{21} + \cdots + 10u - 3$
c_{12}	$u^{22} + 2u^{21} + \cdots + 7u + 7$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{22} - 45y^{21} + \cdots - 970y + 81$
c_2, c_5	$y^{22} - 25y^{21} + \cdots - 94y + 9$
c_3, c_{10}	$y^{22} + 11y^{21} + \cdots + 5y + 1$
c_4	$y^{22} - 17y^{21} + \cdots + y + 1$
c_6	$y^{22} + 3y^{21} + \cdots - 18y + 1$
c_7	$y^{22} - 6y^{21} + \cdots - 504y + 49$
c_8	$y^{22} - 20y^{21} + \cdots - 315y + 1$
c_9, c_{12}	$y^{22} + 16y^{21} + \cdots + 525y + 49$
c_{11}	$y^{22} + 9y^{21} + \cdots - 52y + 9$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.215981 + 0.880776I$ $a = 0.42291 + 1.74778I$ $b = -1.40489 - 0.32594I$	$-0.729664 - 1.055600I$	$-2.65388 - 3.37536I$
$u = 0.215981 - 0.880776I$ $a = 0.42291 - 1.74778I$ $b = -1.40489 + 0.32594I$	$-0.729664 + 1.055600I$	$-2.65388 + 3.37536I$
$u = -0.311175 + 1.080890I$ $a = -0.488004 + 0.062463I$ $b = -0.745155 - 0.531362I$	$-6.87085 + 3.84054I$	$-10.78288 - 1.99979I$
$u = -0.311175 - 1.080890I$ $a = -0.488004 - 0.062463I$ $b = -0.745155 + 0.531362I$	$-6.87085 - 3.84054I$	$-10.78288 + 1.99979I$
$u = 1.031220 + 0.501169I$ $a = -0.131657 + 0.134690I$ $b = 0.195174 + 0.546308I$	$0.292897 - 1.232480I$	$-9.81223 + 6.77489I$
$u = 1.031220 - 0.501169I$ $a = -0.131657 - 0.134690I$ $b = 0.195174 - 0.546308I$	$0.292897 + 1.232480I$	$-9.81223 - 6.77489I$
$u = -0.110176 + 0.792347I$ $a = 0.50663 - 4.05553I$ $b = -0.336422 + 0.901790I$	$-8.34331 - 2.04079I$	$-6.73669 - 1.53590I$
$u = -0.110176 - 0.792347I$ $a = 0.50663 + 4.05553I$ $b = -0.336422 - 0.901790I$	$-8.34331 + 2.04079I$	$-6.73669 + 1.53590I$
$u = 0.342652 + 1.196430I$ $a = 0.00858 - 1.86730I$ $b = 0.43597 + 1.36736I$	$5.26394 - 4.40995I$	$-6.55309 + 3.89134I$
$u = 0.342652 - 1.196430I$ $a = 0.00858 + 1.86730I$ $b = 0.43597 - 1.36736I$	$5.26394 + 4.40995I$	$-6.55309 - 3.89134I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.476115+1.200480I$ $a=\ 0.33709+1.86499I$ $b=\ 1.06414-1.14093I$	$5.11201+7.58757I$	$-9.27554-6.67902I$
$u=-0.476115-1.200480I$ $a=\ 0.33709-1.86499I$ $b=\ 1.06414+1.14093I$	$5.11201-7.58757I$	$-9.27554+6.67902I$
$u=-0.682738+0.059063I$ $a=\ 0.528403+0.030745I$ $b=\ 0.879737+0.878115I$	$1.84449-3.13922I$	$-13.7549+4.3871I$
$u=-0.682738-0.059063I$ $a=\ 0.528403-0.030745I$ $b=\ 0.879737-0.878115I$	$1.84449+3.13922I$	$-13.7549-4.3871I$
$u=-0.492309+1.236030I$ $a=-0.723571-0.734040I$ $b=\ 0.310470+1.012790I$	$5.07188+1.32197I$	$-7.08101+1.81161I$
$u=-0.492309-1.236030I$ $a=-0.723571+0.734040I$ $b=\ 0.310470-1.012790I$	$5.07188-1.32197I$	$-7.08101-1.81161I$
$u=-0.113901+0.608983I$ $a=\ 0.16460+1.46569I$ $b=\ 1.005810-0.896390I$	$2.12223+2.58152I$	$-10.96980-5.73632I$
$u=-0.113901-0.608983I$ $a=\ 0.16460-1.46569I$ $b=\ 1.005810+0.896390I$	$2.12223-2.58152I$	$-10.96980+5.73632I$
$u=\ 0.569626+1.287640I$ $a=-0.492631+0.851572I$ $b=-0.436703-0.769932I$	$3.33386-4.94613I$	$-6.20084+4.11530I$
$u=\ 0.569626-1.287640I$ $a=-0.492631-0.851572I$ $b=-0.436703+0.769932I$	$3.33386+4.94613I$	$-6.20084-4.11530I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.43376$ $a=-0.278601$ $b=-0.203139$	-12.0426	-4.69420
$u=\ \ 0.487622$ $a=-0.986099$ $b=-0.733122$	-2.15240	-18.6640

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{22}-25u^{21}+\cdots-94u+9)(u^{63}+82u^{62}+\cdots+19u+1)$
c_2	$(u^{22}+3u^{21}+\cdots+4u-3)(u^{63}+4u^{62}+\cdots-u+1)$
c_3	$(u^{22}-u^{21}+\cdots+u-1)(u^{63}+2u^{62}+\cdots+6u+1)$
c_4	$(u^{22}+3u^{21}+\cdots+9u-1)(u^{63}-45u^{61}+\cdots+113780u+6263)$
c_5	$(u^{22}-3u^{21}+\cdots-4u-3)(u^{63}+4u^{62}+\cdots-u+1)$
c_6	$(u^{22}+u^{21}+\cdots-6u+1)(u^{63}+6u^{62}+\cdots+103u+43)$
c_7	$(u^{22}-3u^{20}+\cdots-42u-7)(u^{63}-u^{62}+\cdots+83083u+12017)$
c_8	$(u^{22}+16u^{21}+\cdots-21u+1)$ $\cdot(u^{63}+11u^{62}+\cdots+1626730u+769055)$
c_9	$(u^{22}-2u^{21}+\cdots-7u+7)(u^{63}-3u^{62}+\cdots+4u+1)$
c_{10}	$(u^{22}+u^{21}+\cdots-u-1)(u^{63}+2u^{62}+\cdots+6u+1)$
c_{11}	$(u^{22}+u^{21}+\cdots+10u-3)(u^{63}-2u^{62}+\cdots+197u+23)$
c_{12}	$(u^{22}+2u^{21}+\cdots+7u+7)(u^{63}-3u^{62}+\cdots+4u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{22}-45y^{21}+\cdots-970y+81)(y^{63}-190y^{62}+\cdots-761y-1)$
c_2, c_5	$(y^{22}-25y^{21}+\cdots-94y+9)(y^{63}-82y^{62}+\cdots+19y-1)$
c_3, c_{10}	$(y^{22}+11y^{21}+\cdots+5y+1)(y^{63}+34y^{62}+\cdots-8y-1)$
c_4	$(y^{22}-17y^{21}+\cdots+y+1)$ $\cdot(y^{63}-90y^{62}+\cdots+1565666672y-39225169)$
c_6	$(y^{22}+3y^{21}+\cdots-18y+1)(y^{63}+10y^{62}+\cdots+1579y-1849)$
c_7	$(y^{22}-6y^{21}+\cdots-504y+49)$ $\cdot(y^{63}-19y^{62}+\cdots+1438703057y-144408289)$
c_8	$(y^{22}-20y^{21}+\cdots-315y+1)$ $\cdot(y^{63}-105y^{62}+\cdots+44795152652180y-591445593025)$
c_9, c_{12}	$(y^{22}+16y^{21}+\cdots+525y+49)(y^{63}+27y^{62}+\cdots-16y-1)$
c_{11}	$(y^{22}+9y^{21}+\cdots-52y+9)(y^{63}+12y^{62}+\cdots-15287y-529)$