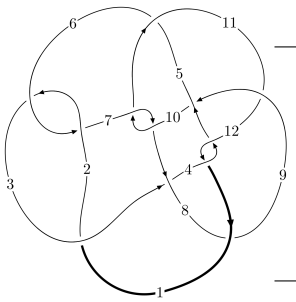
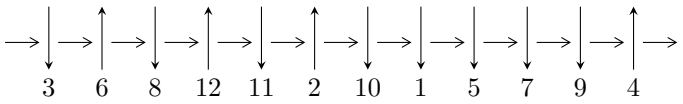
$12a_{0340}$ $(K12a_{0340})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 1.35682 \times 10^{503} u^{162} - 8.90173 \times 10^{503} u^{161} + \cdots + 1.08040 \times 10^{506} b + 6.42181 \times 10^{506},$$
$$- 8.28542 \times 10^{505} u^{162} - 7.31773 \times 10^{506} u^{161} + \cdots + 1.17763 \times 10^{508} a + 4.11103 \times 10^{508},$$
$$u^{163} + 4u^{162} + \cdots + 73u - 109 \rangle$$

$$I_2^u = \langle 28846567470000 u^{39} - 21174510825107 u^{38} + \cdots + 11831056821673 b + 43311892487392,$$
$$23969403847720 u^{39} - 42006034439539 u^{38} + \cdots + 11831056821673 a - 86215642180566,$$
$$u^{40} - u^{39} + \cdots + u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 203 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. $\boldsymbol{I_1^u = \langle 1.36 \times 10^{503} u^{162} - 8.90 \times 10^{503} u^{161} + \cdots + 1.08 \times 10^{506} b + 6.42 \times 10^{506},\ -8.29 \times 10^{505} u^{162} - 7.32 \times 10^{506} u^{161} + \cdots + 1.18 \times 10^{508} a + 4.11 \times 10^{508},\ u^{163} + 4u^{162} + \cdots + 73u - 109 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.00703565u^{162} + 0.0621392u^{161} + \cdots + 8.36849u - 3.49093 \\ -0.00125585u^{162} + 0.00823930u^{161} + \cdots + 18.3312u - 5.94392 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.211176u^{162} + 0.734073u^{161} + \cdots - 11.5269u - 9.28364 \\ 0.0933172u^{162} + 0.256634u^{161} + \cdots - 20.4531u + 4.47456 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.00577979u^{162} + 0.0703785u^{161} + \cdots + 26.6996u - 9.43485 \\ -0.00125585u^{162} + 0.00823930u^{161} + \cdots + 18.3312u - 5.94392 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.186463u^{162} - 0.638799u^{161} + \cdots + 21.5555u + 5.44337 \\ -0.0664678u^{162} - 0.237243u^{161} + \cdots + 1.64874u + 4.07360 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.214251u^{162} - 0.704218u^{161} + \cdots + 15.0417u + 11.7756 \\ -0.0874949u^{162} - 0.213715u^{161} + \cdots + 8.22935u - 1.54392 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.179915u^{162} - 0.586365u^{161} + \cdots + 30.6123u + 0.340272 \\ -0.0454328u^{162} - 0.156545u^{161} + \cdots + 4.15630u + 2.20059 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.0153072u^{162} - 0.102565u^{161} + \cdots + 4.12738u + 0.636121 \\ -0.115629u^{162} - 0.461960u^{161} + \cdots - 12.1705u + 16.2953 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.0476870u^{162} + 0.256756u^{161} + \cdots + 95.4634u - 41.7867$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{163} + 60u^{162} + \cdots - 210273u - 11881$
c_2, c_6	$u^{163} - 4u^{162} + \cdots + 73u + 109$
c_3	$u^{163} - u^{162} + \cdots + 145270u + 8171$
c_4, c_{12}	$u^{163} + 5u^{162} + \cdots + 44u + 1$
c_5	$u^{163} + u^{162} + \cdots - 8899288561u + 823046069$
c_7, c_{10}	$u^{163} + 13u^{162} + \cdots + 1378020u + 540971$
c_8	$u^{163} + 3u^{162} + \cdots + 7u + 5$
c_9	$u^{163} + u^{162} + \cdots - 105758u + 23671$
c_{11}	$u^{163} - 15u^{162} + \cdots - 22u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{163} + 84y^{162} + \cdots + 3549326923y - 141158161$
c_2, c_6	$y^{163} + 60y^{162} + \cdots - 210273y - 11881$
c_3	$y^{163} - y^{162} + \cdots + 12294021696y - 66765241$
c_4, c_{12}	$y^{163} + 113y^{162} + \cdots - 210y - 1$
c_5	$y^{163} + 55y^{162} + \cdots - 2.46 \times 10^{19}y - 6.77 \times 10^{17}$
c_7, c_{10}	$y^{163} + 99y^{162} + \cdots - 12041923581454y - 292649622841$
c_8	$y^{163} - 9y^{162} + \cdots - 101y - 25$
c_9	$y^{163} - 21y^{162} + \cdots - 12180652826y - 560316241$
c_{11}	$y^{163} - 21y^{162} + \cdots - 582y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.737177+0.672690I$ $a=\ \ 0.188393+0.490017I$ $b=-0.018997+1.229980I$	$4.32642-1.51971I$	0
$u=-0.737177-0.672690I$ $a=\ \ 0.188393-0.490017I$ $b=-0.018997-1.229980I$	$4.32642+1.51971I$	0
$u=-0.773762+0.622329I$ $a=\ \ 0.755835-0.877060I$ $b=-1.187700-0.047365I$	$-1.68394+7.81482I$	0
$u=-0.773762-0.622329I$ $a=\ \ 0.755835+0.877060I$ $b=-1.187700+0.047365I$	$-1.68394-7.81482I$	0
$u=\ \ 0.761824+0.627353I$ $a=\ \ 0.166849+0.232368I$ $b=\ \ 0.41547+1.42306I$	$4.46320-3.42171I$	0
$u=\ \ 0.761824-0.627353I$ $a=\ \ 0.166849-0.232368I$ $b=\ \ 0.41547-1.42306I$	$4.46320+3.42171I$	0
$u=\ \ 0.125338+0.977447I$ $a=-1.70641+0.98331I$ $b=\ \ 0.796773-1.071810I$	$-4.93492+4.73162I$	0
$u=\ \ 0.125338-0.977447I$ $a=-1.70641-0.98331I$ $b=\ \ 0.796773+1.071810I$	$-4.93492-4.73162I$	0
$u=\ \ 0.765257+0.618010I$ $a=\ \ 0.758134+0.658229I$ $b=-0.936000-0.028837I$	$3.19618-2.91148I$	0
$u=\ \ 0.765257-0.618010I$ $a=\ \ 0.758134-0.658229I$ $b=-0.936000+0.028837I$	$3.19618+2.91148I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.799004 + 0.628588I$ $a = -0.610516 - 1.210250I$ $b = 0.029842 - 0.438744I$	$-2.13733 + 5.89990I$	0
$u = 0.799004 - 0.628588I$ $a = -0.610516 + 1.210250I$ $b = 0.029842 + 0.438744I$	$-2.13733 - 5.89990I$	0
$u = 0.713734 + 0.734636I$ $a = -0.038240 + 0.616949I$ $b = 0.34564 + 1.44457I$	$4.13318 - 4.45862I$	0
$u = 0.713734 - 0.734636I$ $a = -0.038240 - 0.616949I$ $b = 0.34564 - 1.44457I$	$4.13318 + 4.45862I$	0
$u = -0.542572 + 0.875917I$ $a = -1.38512 + 1.23072I$ $b = 1.63597 - 0.13448I$	$-4.84009 - 2.16620I$	0
$u = -0.542572 - 0.875917I$ $a = -1.38512 - 1.23072I$ $b = 1.63597 + 0.13448I$	$-4.84009 + 2.16620I$	0
$u = -0.627969 + 0.737085I$ $a = -0.730563 - 0.393803I$ $b = 0.343373 - 1.268240I$	$5.02081 + 0.69402I$	0
$u = -0.627969 - 0.737085I$ $a = -0.730563 + 0.393803I$ $b = 0.343373 + 1.268240I$	$5.02081 - 0.69402I$	0
$u = -0.360592 + 0.977806I$ $a = -1.19812 + 0.96595I$ $b = 1.050100 + 0.472458I$	$-5.59574 - 2.61293I$	0
$u = -0.360592 - 0.977806I$ $a = -1.19812 - 0.96595I$ $b = 1.050100 - 0.472458I$	$-5.59574 + 2.61293I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.637454 + 0.700642I$ $a = -1.32904 - 1.95787I$ $b = -0.092471 - 0.926512I$	$-1.87260 - 5.33924I$	0
$u = 0.637454 - 0.700642I$ $a = -1.32904 + 1.95787I$ $b = -0.092471 + 0.926512I$	$-1.87260 + 5.33924I$	0
$u = -0.605987 + 0.726741I$ $a = -0.96583 + 1.33607I$ $b = 0.532594 - 0.394861I$	$2.06508 - 1.75923I$	0
$u = -0.605987 - 0.726741I$ $a = -0.96583 - 1.33607I$ $b = 0.532594 + 0.394861I$	$2.06508 + 1.75923I$	0
$u = 0.599456 + 0.870335I$ $a = -0.98771 - 1.08348I$ $b = 1.333970 + 0.123807I$	$-1.15230 + 2.36062I$	0
$u = 0.599456 - 0.870335I$ $a = -0.98771 + 1.08348I$ $b = 1.333970 - 0.123807I$	$-1.15230 - 2.36062I$	0
$u = -0.207372 + 0.919972I$ $a = 0.13536 + 2.54036I$ $b = 0.079235 - 0.936251I$	$1.80039 + 0.58580I$	0
$u = -0.207372 - 0.919972I$ $a = 0.13536 - 2.54036I$ $b = 0.079235 + 0.936251I$	$1.80039 - 0.58580I$	0
$u = 0.123152 + 1.051200I$ $a = 1.73988 + 0.33616I$ $b = -0.583121 - 0.906648I$	$-5.86160 - 4.61509I$	0
$u = 0.123152 - 1.051200I$ $a = 1.73988 - 0.33616I$ $b = -0.583121 + 0.906648I$	$-5.86160 + 4.61509I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.247135 + 0.907157I$ $a = -1.65959 - 0.50518I$ $b = 0.838175 - 0.528571I$	$-2.92350 + 1.94937I$	0
$u = 0.247135 - 0.907157I$ $a = -1.65959 + 0.50518I$ $b = 0.838175 + 0.528571I$	$-2.92350 - 1.94937I$	0
$u = -0.637988 + 0.683262I$ $a = 0.826552 - 0.274448I$ $b = -0.426336 + 0.110761I$	$0.84628 - 1.95045I$	0
$u = -0.637988 - 0.683262I$ $a = 0.826552 + 0.274448I$ $b = -0.426336 - 0.110761I$	$0.84628 + 1.95045I$	0
$u = 0.535630 + 0.759319I$ $a = -0.76849 - 1.24537I$ $b = 1.006010 + 0.925044I$	$-2.49998 - 1.45816I$	0
$u = 0.535630 - 0.759319I$ $a = -0.76849 + 1.24537I$ $b = 1.006010 - 0.925044I$	$-2.49998 + 1.45816I$	0
$u = -0.113931 + 0.919969I$ $a = -2.27056 - 0.03742I$ $b = 1.125860 + 0.474072I$	$-6.82947 - 1.93658I$	0
$u = -0.113931 - 0.919969I$ $a = -2.27056 + 0.03742I$ $b = 1.125860 - 0.474072I$	$-6.82947 + 1.93658I$	0
$u = -0.797929 + 0.718207I$ $a = 0.371911 - 0.348237I$ $b = 0.53034 - 1.40342I$	$1.19927 + 4.16817I$	0
$u = -0.797929 - 0.718207I$ $a = 0.371911 + 0.348237I$ $b = 0.53034 + 1.40342I$	$1.19927 - 4.16817I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.502181 + 0.774985I$ $a = -1.20034 - 1.29219I$ $b = 0.511641 - 1.064010I$	$-2.53007 + 4.36535I$	0
$u = 0.502181 - 0.774985I$ $a = -1.20034 + 1.29219I$ $b = 0.511641 + 1.064010I$	$-2.53007 - 4.36535I$	0
$u = -0.628876 + 0.874110I$ $a = -0.74185 + 1.33998I$ $b = 1.55148 - 0.10467I$	$-4.27946 - 2.45509I$	0
$u = -0.628876 - 0.874110I$ $a = -0.74185 - 1.33998I$ $b = 1.55148 + 0.10467I$	$-4.27946 + 2.45509I$	0
$u = -0.676392 + 0.839132I$ $a = -0.568949 - 0.064697I$ $b = -0.23951 + 1.67204I$	$3.83841 - 6.99014I$	0
$u = -0.676392 - 0.839132I$ $a = -0.568949 + 0.064697I$ $b = -0.23951 - 1.67204I$	$3.83841 + 6.99014I$	0
$u = 0.810579 + 0.731532I$ $a = 0.338309 - 0.327463I$ $b = 0.050499 - 1.085990I$	$3.44471 + 2.95252I$	0
$u = 0.810579 - 0.731532I$ $a = 0.338309 + 0.327463I$ $b = 0.050499 + 1.085990I$	$3.44471 - 2.95252I$	0
$u = 0.035799 + 1.091360I$ $a = 1.63808 - 0.15097I$ $b = -0.855663 - 0.498810I$	$-7.48042 + 7.05234I$	0
$u = 0.035799 - 1.091360I$ $a = 1.63808 + 0.15097I$ $b = -0.855663 + 0.498810I$	$-7.48042 - 7.05234I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.271253 + 1.059440I$ $a = -0.228947 - 0.928394I$ $b = 0.581434 + 0.177533I$	$-4.98323 + 0.09384I$	0
$u = 0.271253 - 1.059440I$ $a = -0.228947 + 0.928394I$ $b = 0.581434 - 0.177533I$	$-4.98323 - 0.09384I$	0
$u = 0.940279 + 0.562831I$ $a = 0.237862 + 0.224241I$ $b = 0.23689 + 1.41761I$	$5.25066 - 4.67426I$	0
$u = 0.940279 - 0.562831I$ $a = 0.237862 - 0.224241I$ $b = 0.23689 - 1.41761I$	$5.25066 + 4.67426I$	0
$u = -0.020961 + 1.095780I$ $a = 1.396920 + 0.030088I$ $b = -0.551478 + 0.503297I$	$-2.49205 - 2.11402I$	0
$u = -0.020961 - 1.095780I$ $a = 1.396920 - 0.030088I$ $b = -0.551478 - 0.503297I$	$-2.49205 + 2.11402I$	0
$u = -0.567016 + 0.699777I$ $a = -0.95970 + 2.07896I$ $b = 0.077535 + 0.957689I$	$1.86386 - 0.23262I$	0
$u = -0.567016 - 0.699777I$ $a = -0.95970 - 2.07896I$ $b = 0.077535 - 0.957689I$	$1.86386 + 0.23262I$	0
$u = 0.723463 + 0.835058I$ $a = -0.215596 + 0.128864I$ $b = -0.38142 - 1.43893I$	$7.17847 + 3.10939I$	0
$u = 0.723463 - 0.835058I$ $a = -0.215596 - 0.128864I$ $b = -0.38142 + 1.43893I$	$7.17847 - 3.10939I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.682655+0.872477I$ $a=\ \ 1.89680-0.15209I$ $b=-0.37194-1.52003I$	$3.73600+1.74776I$	0
$u=-0.682655-0.872477I$ $a=\ \ 1.89680+0.15209I$ $b=-0.37194+1.52003I$	$3.73600-1.74776I$	0
$u=-0.088101+1.107340I$ $a=-0.672055-0.992258I$ $b=\ \ 0.405563+0.942170I$	$-1.46868-2.67721I$	0
$u=-0.088101-1.107340I$ $a=-0.672055+0.992258I$ $b=\ \ 0.405563-0.942170I$	$-1.46868+2.67721I$	0
$u=\ \ 0.066923+0.879106I$ $a=-0.80389-2.49675I$ $b=\ \ 0.147313+1.170380I$	$-0.26430-5.08731I$	0
$u=\ \ 0.066923-0.879106I$ $a=-0.80389+2.49675I$ $b=\ \ 0.147313-1.170380I$	$-0.26430+5.08731I$	0
$u=\ \ 0.569701+0.967369I$ $a=-1.74310-0.17703I$ $b=\ \ 1.107210-0.652959I$	$-3.22509+5.90578I$	0
$u=\ \ 0.569701-0.967369I$ $a=-1.74310+0.17703I$ $b=\ \ 1.107210+0.652959I$	$-3.22509-5.90578I$	0
$u=\ \ 0.675375+0.897618I$ $a=-0.098617-0.421275I$ $b=\ \ 0.893487+0.580170I$	$-2.19060-0.19871I$	0
$u=\ \ 0.675375-0.897618I$ $a=-0.098617+0.421275I$ $b=\ \ 0.893487-0.580170I$	$-2.19060+0.19871I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.751134 + 0.844860I$ $a = -0.98804 - 1.02839I$ $b = 0.719278 - 0.574531I$	$-2.00134 + 5.61968I$	0
$u = 0.751134 - 0.844860I$ $a = -0.98804 + 1.02839I$ $b = 0.719278 + 0.574531I$	$-2.00134 - 5.61968I$	0
$u = 0.719566 + 0.882192I$ $a = 1.79435 + 0.30010I$ $b = -0.52172 + 1.31956I$	$7.03596 + 2.38902I$	0
$u = 0.719566 - 0.882192I$ $a = 1.79435 - 0.30010I$ $b = -0.52172 - 1.31956I$	$7.03596 - 2.38902I$	0
$u = -0.621205 + 0.956499I$ $a = -2.55783 - 0.02798I$ $b = 0.416985 + 1.143270I$	$4.32697 - 5.61210I$	0
$u = -0.621205 - 0.956499I$ $a = -2.55783 + 0.02798I$ $b = 0.416985 - 1.143270I$	$4.32697 + 5.61210I$	0
$u = -0.623553 + 0.963691I$ $a = -0.845073 - 0.073771I$ $b = 0.685800 + 0.066986I$	$1.30802 - 3.12224I$	0
$u = -0.623553 - 0.963691I$ $a = -0.845073 + 0.073771I$ $b = 0.685800 - 0.066986I$	$1.30802 + 3.12224I$	0
$u = 1.130560 + 0.232791I$ $a = 0.162263 + 0.125423I$ $b = -0.244044 + 1.091950I$	$0.12719 + 7.80909I$	0
$u = 1.130560 - 0.232791I$ $a = 0.162263 - 0.125423I$ $b = -0.244044 - 1.091950I$	$0.12719 - 7.80909I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.081580+0.403171I$ $a=\ \ 0.410046+0.235479I$ $b=-0.281290+1.073010I$	$4.04054+0.58078I$	0
$u=-1.081580-0.403171I$ $a=\ \ 0.410046-0.235479I$ $b=-0.281290-1.073010I$	$4.04054-0.58078I$	0
$u=-0.979380+0.612245I$ $a=\ \ 0.139944+0.120884I$ $b=-0.56712+1.35968I$	$2.46970+13.90880I$	0
$u=-0.979380-0.612245I$ $a=\ \ 0.139944-0.120884I$ $b=-0.56712-1.35968I$	$2.46970-13.90880I$	0
$u=\ \ 0.997427+0.601743I$ $a=\ \ 0.217276-0.143993I$ $b=-0.485163-1.293900I$	$7.22042-7.96026I$	0
$u=\ \ 0.997427-0.601743I$ $a=\ \ 0.217276+0.143993I$ $b=-0.485163+1.293900I$	$7.22042+7.96026I$	0
$u=\ \ 0.634713+0.979528I$ $a=\ \ 1.14021+1.38209I$ $b=-0.229322+1.090460I$	$-2.74211+10.34760I$	0
$u=\ \ 0.634713-0.979528I$ $a=\ \ 1.14021-1.38209I$ $b=-0.229322-1.090460I$	$-2.74211-10.34760I$	0
$u=-0.607341+0.996858I$ $a=\ \ 1.46982-0.96179I$ $b=-0.170038-1.042970I$	$0.87593-4.49049I$	0
$u=-0.607341-0.996858I$ $a=\ \ 1.46982+0.96179I$ $b=-0.170038+1.042970I$	$0.87593+4.49049I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.673420 + 0.964478I$ $a = -2.27082 - 0.43114I$ $b = 0.42766 - 1.38514I$	$3.42449 + 9.79259I$	0
$u = 0.673420 - 0.964478I$ $a = -2.27082 + 0.43114I$ $b = 0.42766 + 1.38514I$	$3.42449 - 9.79259I$	0
$u = -0.453423 + 1.090630I$ $a = 0.423730 - 0.821511I$ $b = -0.223666 + 0.563018I$	$-0.54692 - 2.73661I$	0
$u = -0.453423 - 1.090630I$ $a = 0.423730 + 0.821511I$ $b = -0.223666 - 0.563018I$	$-0.54692 + 2.73661I$	0
$u = -0.140307 + 1.173830I$ $a = -0.17051 + 1.46582I$ $b = 0.538408 - 1.086160I$	$-3.60731 + 2.94413I$	0
$u = -0.140307 - 1.173830I$ $a = -0.17051 - 1.46582I$ $b = 0.538408 + 1.086160I$	$-3.60731 - 2.94413I$	0
$u = 0.334745 + 0.745701I$ $a = 1.065550 - 0.020893I$ $b = 0.358904 + 0.529189I$	$-2.81644 - 0.70045I$	0
$u = 0.334745 - 0.745701I$ $a = 1.065550 + 0.020893I$ $b = 0.358904 - 0.529189I$	$-2.81644 + 0.70045I$	0
$u = -0.658342 + 0.467121I$ $a = 0.337671 - 0.002527I$ $b = 0.48244 - 1.48183I$	$1.28400 + 5.11899I$	0
$u = -0.658342 - 0.467121I$ $a = 0.337671 + 0.002527I$ $b = 0.48244 + 1.48183I$	$1.28400 - 5.11899I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.768683 + 0.235834I$ $a = 0.353523 - 0.345262I$ $b = -0.291793 + 0.707150I$	$-1.84228 - 3.41319I$	0
$u = 0.768683 - 0.235834I$ $a = 0.353523 + 0.345262I$ $b = -0.291793 - 0.707150I$	$-1.84228 + 3.41319I$	0
$u = -0.868271 + 0.828094I$ $a = 0.270637 - 0.209403I$ $b = -0.580934 + 1.051790I$	$1.94343 - 0.52594I$	0
$u = -0.868271 - 0.828094I$ $a = 0.270637 + 0.209403I$ $b = -0.580934 - 1.051790I$	$1.94343 + 0.52594I$	0
$u = 0.227264 + 1.184250I$ $a = 1.30448 - 0.85532I$ $b = -0.497984 + 0.712236I$	$-6.38789 - 0.20364I$	0
$u = 0.227264 - 1.184250I$ $a = 1.30448 + 0.85532I$ $b = -0.497984 - 0.712236I$	$-6.38789 + 0.20364I$	0
$u = -0.589969 + 1.057680I$ $a = 0.821684 - 0.551696I$ $b = -0.567312 + 0.387034I$	$-0.30755 - 2.79696I$	0
$u = -0.589969 - 1.057680I$ $a = 0.821684 + 0.551696I$ $b = -0.567312 - 0.387034I$	$-0.30755 + 2.79696I$	0
$u = -0.701521 + 0.992572I$ $a = 1.67853 - 0.11121I$ $b = -0.135224 - 1.112230I$	$3.39047 - 3.98558I$	0
$u = -0.701521 - 0.992572I$ $a = 1.67853 + 0.11121I$ $b = -0.135224 + 1.112230I$	$3.39047 + 3.98558I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.612582 + 1.059510I$ $a = 0.851652 + 0.605864I$ $b = -0.160313 + 0.884952I$	$-3.73677 - 0.43403I$	0
$u = 0.612582 - 1.059510I$ $a = 0.851652 - 0.605864I$ $b = -0.160313 - 0.884952I$	$-3.73677 + 0.43403I$	0
$u = -0.625688 + 1.055240I$ $a = -1.99645 - 0.05893I$ $b = 0.72320 + 1.48361I$	$-0.33729 - 10.18220I$	0
$u = -0.625688 - 1.055240I$ $a = -1.99645 + 0.05893I$ $b = 0.72320 - 1.48361I$	$-0.33729 + 10.18220I$	0
$u = -0.723224 + 0.994300I$ $a = -1.77494 + 0.62151I$ $b = 0.65183 + 1.45232I$	$0.35599 - 9.90168I$	0
$u = -0.723224 - 0.994300I$ $a = -1.77494 - 0.62151I$ $b = 0.65183 - 1.45232I$	$0.35599 + 9.90168I$	0
$u = 0.684844 + 1.021900I$ $a = -1.89498 - 0.24214I$ $b = 0.56261 - 1.41652I$	$3.29542 + 8.92481I$	0
$u = 0.684844 - 1.021900I$ $a = -1.89498 + 0.24214I$ $b = 0.56261 + 1.41652I$	$3.29542 - 8.92481I$	0
$u = 0.677863 + 1.028200I$ $a = 1.030690 + 0.749647I$ $b = -1.074910 - 0.144065I$	$1.97376 + 8.39667I$	0
$u = 0.677863 - 1.028200I$ $a = 1.030690 - 0.749647I$ $b = -1.074910 + 0.144065I$	$1.97376 - 8.39667I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.744902 + 0.980903I$ $a = 1.55460 + 0.03420I$ $b = -0.025008 + 0.924632I$	$2.69438 + 2.88091I$	0
$u = 0.744902 - 0.980903I$ $a = 1.55460 - 0.03420I$ $b = -0.025008 - 0.924632I$	$2.69438 - 2.88091I$	0
$u = -0.836701 + 0.905082I$ $a = 1.54958 - 0.43857I$ $b = -0.711146 - 0.994392I$	$1.70384 - 5.74585I$	0
$u = -0.836701 - 0.905082I$ $a = 1.54958 + 0.43857I$ $b = -0.711146 + 0.994392I$	$1.70384 + 5.74585I$	0
$u = -0.682591 + 1.030050I$ $a = 1.033760 - 0.908073I$ $b = -1.319480 + 0.201069I$	$-2.90298 - 13.34080I$	0
$u = -0.682591 - 1.030050I$ $a = 1.033760 + 0.908073I$ $b = -1.319480 - 0.201069I$	$-2.90298 + 13.34080I$	0
$u = 0.537225 + 1.130530I$ $a = -0.179491 + 1.061450I$ $b = -0.241847 - 0.580004I$	$-4.42811 + 8.23233I$	0
$u = 0.537225 - 1.130530I$ $a = -0.179491 - 1.061450I$ $b = -0.241847 + 0.580004I$	$-4.42811 - 8.23233I$	0
$u = 0.006078 + 1.252020I$ $a = -0.153447 - 1.096650I$ $b = 0.271384 + 1.092030I$	$-1.71451 - 2.55715I$	0
$u = 0.006078 - 1.252020I$ $a = -0.153447 + 1.096650I$ $b = 0.271384 - 1.092030I$	$-1.71451 + 2.55715I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.059250+0.695049I$ $a=\ \ 0.219298-0.177254I$ $b=\ \ 0.177113-1.215690I$	$6.68267-0.01770I$	0
$u=-1.059250-0.695049I$ $a=\ \ 0.219298+0.177254I$ $b=\ \ 0.177113+1.215690I$	$6.68267+0.01770I$	0
$u=-1.266720+0.147665I$ $a=\ \ 0.269207+0.300737I$ $b=-0.170713+0.961316I$	$3.97613+0.80417I$	0
$u=-1.266720-0.147665I$ $a=\ \ 0.269207-0.300737I$ $b=-0.170713-0.961316I$	$3.97613-0.80417I$	0
$u=\ \ 0.195619+1.302530I$ $a=\ \ 1.09120-0.90160I$ $b=-0.520564+1.082710I$	$-5.59222+12.12200I$	0
$u=\ \ 0.195619-1.302530I$ $a=\ \ 1.09120+0.90160I$ $b=-0.520564-1.082710I$	$-5.59222-12.12200I$	0
$u=\ \ 0.724593+1.113450I$ $a=-1.46774+0.06955I$ $b=\ \ 0.37189-1.47140I$	$3.55626+10.77990I$	0
$u=\ \ 0.724593-1.113450I$ $a=-1.46774-0.06955I$ $b=\ \ 0.37189+1.47140I$	$3.55626-10.77990I$	0
$u=-0.237147+1.312700I$ $a=\ \ 1.098640+0.724277I$ $b=-0.414909-0.988555I$	$-1.08413-6.03148I$	0
$u=-0.237147-1.312700I$ $a=\ \ 1.098640-0.724277I$ $b=-0.414909+0.988555I$	$-1.08413+6.03148I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.752305+1.110980I$ $a=\ \ 1.83368-0.23005I$ $b=-0.66071-1.38026I$	$0.9027-20.2267I$	0
$u=-0.752305-1.110980I$ $a=\ \ 1.83368+0.23005I$ $b=-0.66071+1.38026I$	$0.9027+20.2267I$	0
$u=\ \ 0.752212+1.119300I$ $a=\ \ 1.79077+0.18910I$ $b=-0.58916+1.30732I$	$5.5887+14.3193I$	0
$u=\ \ 0.752212-1.119300I$ $a=\ \ 1.79077-0.18910I$ $b=-0.58916-1.30732I$	$5.5887-14.3193I$	0
$u=-0.809545+1.095760I$ $a=-1.172370+0.142078I$ $b=\ \ 0.330166+1.260610I$	$5.36636-6.69773I$	0
$u=-0.809545-1.095760I$ $a=-1.172370-0.142078I$ $b=\ \ 0.330166-1.260610I$	$5.36636+6.69773I$	0
$u=-0.77622+1.19345I$ $a=\ \ 1.62602-0.10330I$ $b=-0.525232-1.087030I$	$1.68565-7.24395I$	0
$u=-0.77622-1.19345I$ $a=\ \ 1.62602+0.10330I$ $b=-0.525232+1.087030I$	$1.68565+7.24395I$	0
$u=-0.504684+0.263849I$ $a=\ \ 1.60481+0.89969I$ $b=-0.258709-0.455007I$	$1.89204-1.07820I$	$1.91650+6.25990I$
$u=-0.504684-0.263849I$ $a=\ \ 1.60481-0.89969I$ $b=-0.258709+0.455007I$	$1.89204+1.07820I$	$1.91650-6.25990I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.45197 + 1.37473I$ $a = -0.265193 + 0.632005I$ $b = -0.087652 - 0.907972I$	$-3.90255 - 1.79764I$	0
$u = 0.45197 - 1.37473I$ $a = -0.265193 - 0.632005I$ $b = -0.087652 + 0.907972I$	$-3.90255 + 1.79764I$	0
$u = 0.540144 + 0.005775I$ $a = 0.849499 - 0.047311I$ $b = 0.423549 - 0.786085I$	$-1.87427 + 2.65853I$	$-3.35625 - 4.28824I$
$u = 0.540144 - 0.005775I$ $a = 0.849499 + 0.047311I$ $b = 0.423549 + 0.786085I$	$-1.87427 - 2.65853I$	$-3.35625 + 4.28824I$
$u = -0.423031 + 0.261415I$ $a = 1.003080 + 0.042741I$ $b = 0.787846 + 0.035263I$	$-3.69509 - 0.61243I$	$-7.33011 + 1.77658I$
$u = -0.423031 - 0.261415I$ $a = 1.003080 - 0.042741I$ $b = 0.787846 - 0.035263I$	$-3.69509 + 0.61243I$	$-7.33011 - 1.77658I$
$u = -0.202920 + 0.424221I$ $a = 1.018060 + 0.296028I$ $b = 0.25299 - 1.50437I$	$1.36939 + 4.92077I$	$-8.24840 - 0.64213I$
$u = -0.202920 - 0.424221I$ $a = 1.018060 - 0.296028I$ $b = 0.25299 + 1.50437I$	$1.36939 - 4.92077I$	$-8.24840 + 0.64213I$
$u = -0.174393 + 0.337951I$ $a = 1.149320 + 0.107155I$ $b = 0.102744 + 1.299720I$	$3.60683 - 2.03887I$	$-6.33893 + 7.14671I$
$u = -0.174393 - 0.337951I$ $a = 1.149320 - 0.107155I$ $b = 0.102744 - 1.299720I$	$3.60683 + 2.03887I$	$-6.33893 - 7.14671I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.271115 + 0.217300I$ $a = 4.04364 - 3.54157I$ $b = -0.481397 + 0.422709I$	$-2.91123 + 6.23612I$	$-8.81265 - 10.44427I$
$u = 0.271115 - 0.217300I$ $a = 4.04364 + 3.54157I$ $b = -0.481397 - 0.422709I$	$-2.91123 - 6.23612I$	$-8.81265 + 10.44427I$
$u = 0.256761$ $a = 0.988138$ $b = 0.541618$	-0.893682	-10.8990

II.

$\boldsymbol{I_2^u = \langle 2.88\times 10^{13}u^{39} - 2.12\times 10^{13}u^{38} + \cdots + 1.18\times 10^{13}b + 4.33\times 10^{13},\ 2.40\times 10^{13}u^{39} - 4.20\times 10^{13}u^{38} + \cdots + 1.18\times 10^{13}a - 8.62\times 10^{13},\ u^{40} - u^{39} + \cdots + u + 1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -2.02597u^{39} + 3.55049u^{38} + \cdots - 6.11112u + 7.28723 \\ -2.43821u^{39} + 1.78974u^{38} + \cdots - 4.57667u - 3.66086 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 7.03611u^{39} - 14.1343u^{38} + \cdots - 2.19812u - 16.0768 \\ -2.21185u^{39} + 3.18343u^{38} + \cdots + 2.49832u + 3.12356 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -4.46418u^{39} + 5.34023u^{38} + \cdots - 10.6878u + 3.62637 \\ -2.43821u^{39} + 1.78974u^{38} + \cdots - 4.57667u - 3.66086 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 6.83747u^{39} - 10.5532u^{38} + \cdots + 1.11918u + 0.335121 \\ -2.37574u^{39} + 1.53895u^{38} + \cdots - 8.83262u - 0.244655 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 8.29568u^{39} - 6.95298u^{38} + \cdots + 2.57690u + 3.48765 \\ -2.92502u^{39} + 1.71887u^{38} + \cdots - 4.44340u - 4.50206 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 10.7578u^{39} - 15.8278u^{38} + \cdots + 3.32431u - 2.77262 \\ -6.67141u^{39} + 7.54272u^{38} + \cdots - 11.2727u + 1.29801 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -7.79542u^{39} + 11.5996u^{38} + \cdots - 8.34697u + 2.96689 \\ 1.26795u^{39} - 3.60279u^{38} + \cdots - 3.86847u + 2.23766 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$$= -\frac{155060361233628}{11831056821673}u^{39} + \frac{46766511459853}{11831056821673}u^{38} + \cdots - \frac{262259642373794}{11831056821673}u - \frac{421984096898837}{11831056821673}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{40} - 17u^{39} + \cdots - 15u + 1$
c_2	$u^{40} + u^{39} + \cdots - u + 1$
c_3	$u^{40} + 4u^{38} + \cdots + 24u + 5$
c_4	$u^{40} - 2u^{39} + \cdots - 6u + 1$
c_5	$u^{40} + 2u^{38} + \cdots + 43u + 5$
c_6	$u^{40} - u^{39} + \cdots + u + 1$
c_7	$u^{40} - 14u^{39} + \cdots - 6u + 1$
c_8	$u^{40} + 2u^{39} + \cdots + 5u + 1$
c_9	$u^{40} + 2u^{39} + \cdots - 4u + 1$
c_{10}	$u^{40} + 14u^{39} + \cdots + 6u + 1$
c_{11}	$u^{40} + 6u^{39} + \cdots + 4u + 1$
c_{12}	$u^{40} + 2u^{39} + \cdots + 6u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{40} + 9y^{39} + \cdots + 35y + 1$
c_2, c_6	$y^{40} + 17y^{39} + \cdots + 15y + 1$
c_3	$y^{40} + 8y^{39} + \cdots + 454y + 25$
c_4, c_{12}	$y^{40} + 26y^{39} + \cdots + 48y + 1$
c_5	$y^{40} + 4y^{39} + \cdots + 231y + 25$
c_7, c_{10}	$y^{40} + 20y^{39} + \cdots + 32y + 1$
c_8	$y^{40} - 12y^{39} + \cdots + 11y + 1$
c_9	$y^{40} - 4y^{39} + \cdots + 24y + 1$
c_{11}	$y^{40} - 20y^{39} + \cdots + 8y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.734199 + 0.719252I$ $a = 0.372663 - 0.237262I$ $b = -0.071086 - 1.144680I$	$5.09677 + 2.20426I$	$3.87068 - 3.68363I$
$u = 0.734199 - 0.719252I$ $a = 0.372663 + 0.237262I$ $b = -0.071086 + 1.144680I$	$5.09677 - 2.20426I$	$3.87068 + 3.68363I$
$u = -0.696705 + 0.675776I$ $a = 0.471077 - 0.481044I$ $b = 0.32121 - 1.56546I$	$2.91719 + 4.61537I$	$-3.06231 - 4.03876I$
$u = -0.696705 - 0.675776I$ $a = 0.471077 + 0.481044I$ $b = 0.32121 + 1.56546I$	$2.91719 - 4.61537I$	$-3.06231 + 4.03876I$
$u = 0.102661 + 0.951725I$ $a = -0.37416 - 1.66989I$ $b = 0.731886 + 0.864197I$	$-4.35448 - 2.29863I$	$-12.94450 + 2.66099I$
$u = 0.102661 - 0.951725I$ $a = -0.37416 + 1.66989I$ $b = 0.731886 - 0.864197I$	$-4.35448 + 2.29863I$	$-12.94450 - 2.66099I$
$u = 0.553143 + 0.886090I$ $a = -0.944313 - 0.921785I$ $b = 1.091620 + 0.100262I$	$-1.51875 + 2.20264I$	$-10.91711 + 0.11266I$
$u = 0.553143 - 0.886090I$ $a = -0.944313 + 0.921785I$ $b = 1.091620 - 0.100262I$	$-1.51875 - 2.20264I$	$-10.91711 - 0.11266I$
$u = -0.790744 + 0.531063I$ $a = 0.31265 - 1.67167I$ $b = -0.234660 - 0.684231I$	$-1.82576 - 6.45440I$	$-0.55010 + 12.51728I$
$u = -0.790744 - 0.531063I$ $a = 0.31265 + 1.67167I$ $b = -0.234660 + 0.684231I$	$-1.82576 + 6.45440I$	$-0.55010 - 12.51728I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.634764+0.865535I$ $a=-0.99741+1.30162I$ $b=\ \ 1.65938-0.08266I$	$-3.78489-2.48053I$	$1.30193+4.38950I$
$u=-0.634764-0.865535I$ $a=-0.99741-1.30162I$ $b=\ \ 1.65938+0.08266I$	$-3.78489+2.48053I$	$1.30193-4.38950I$
$u=-0.295026+0.856715I$ $a=-1.37728+1.04948I$ $b=\ \ 1.221270+0.199288I$	$-5.75967-1.29167I$	$-13.78024-0.97799I$
$u=-0.295026-0.856715I$ $a=-1.37728-1.04948I$ $b=\ \ 1.221270-0.199288I$	$-5.75967+1.29167I$	$-13.78024+0.97799I$
$u=\ \ 0.152907+0.887397I$ $a=-1.70925-0.20552I$ $b=\ \ 0.791868-0.912426I$	$-4.17437+3.44692I$	$-9.25539-3.75161I$
$u=\ \ 0.152907-0.887397I$ $a=-1.70925+0.20552I$ $b=\ \ 0.791868+0.912426I$	$-4.17437-3.44692I$	$-9.25539+3.75161I$
$u=-0.478510+1.070730I$ $a=-0.116367+0.867704I$ $b=-0.205707-0.401892I$	$-4.62314-9.08324I$	$-7.92158+10.08982I$
$u=-0.478510-1.070730I$ $a=-0.116367-0.867704I$ $b=-0.205707+0.401892I$	$-4.62314+9.08324I$	$-7.92158-10.08982I$
$u=\ \ 0.442959+1.095940I$ $a=-0.884255-0.884302I$ $b=\ \ 0.302296+0.514682I$	$-0.84946+2.99731I$	$-13.6171-10.8986I$
$u=\ \ 0.442959-1.095940I$ $a=-0.884255+0.884302I$ $b=\ \ 0.302296-0.514682I$	$-0.84946-2.99731I$	$-13.6171+10.8986I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.707613 + 0.961672I$ $a = 1.75863 + 0.10384I$ $b = -0.148352 + 0.989644I$	$4.37516 + 3.31659I$	$2.78895 - 2.11164I$
$u = 0.707613 - 0.961672I$ $a = 1.75863 - 0.10384I$ $b = -0.148352 - 0.989644I$	$4.37516 - 3.31659I$	$2.78895 + 2.11164I$
$u = -0.673964 + 1.011440I$ $a = -1.87571 + 0.25264I$ $b = 0.47029 + 1.53712I$	$1.88598 - 9.93676I$	$-4.74296 + 9.01509I$
$u = -0.673964 - 1.011440I$ $a = -1.87571 - 0.25264I$ $b = 0.47029 - 1.53712I$	$1.88598 + 9.93676I$	$-4.74296 - 9.01509I$
$u = 0.262246 + 0.733198I$ $a = 0.38934 + 2.88011I$ $b = 0.047504 - 0.568413I$	$0.773366 - 0.074600I$	$-8.63422 + 0.18891I$
$u = 0.262246 - 0.733198I$ $a = 0.38934 - 2.88011I$ $b = 0.047504 + 0.568413I$	$0.773366 + 0.074600I$	$-8.63422 - 0.18891I$
$u = 1.210360 + 0.229518I$ $a = -0.360575 + 0.322612I$ $b = 0.217571 + 0.990993I$	$4.13377 - 0.82820I$	$26.3126 + 15.1014I$
$u = 1.210360 - 0.229518I$ $a = -0.360575 - 0.322612I$ $b = 0.217571 - 0.990993I$	$4.13377 + 0.82820I$	$26.3126 - 15.1014I$
$u = -0.129072 + 1.235900I$ $a = -0.097653 + 1.183260I$ $b = 0.302337 - 1.149100I$	$-1.88719 + 3.02774I$	$-5.70608 - 10.67970I$
$u = -0.129072 - 1.235900I$ $a = -0.097653 - 1.183260I$ $b = 0.302337 + 1.149100I$	$-1.88719 - 3.02774I$	$-5.70608 + 10.67970I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.386600+0.624916I$ $a=\ 0.79352-3.14084I$ $b=-0.340698+0.465298I$	$-2.98289+5.34357I$	$-9.82121-2.26975I$
$u=-0.386600-0.624916I$ $a=\ 0.79352+3.14084I$ $b=-0.340698-0.465298I$	$-2.98289-5.34357I$	$-9.82121+2.26975I$
$u=\ 0.505198+0.439594I$ $a=-0.742364+0.645600I$ $b=\ 0.210704+1.256190I$	$3.94267-1.38116I$	$-1.140160-0.424141I$
$u=\ 0.505198-0.439594I$ $a=-0.742364-0.645600I$ $b=\ 0.210704-1.256190I$	$3.94267+1.38116I$	$-1.140160+0.424141I$
$u=-0.443272+1.255980I$ $a=-0.597213-0.007055I$ $b=\ 0.007267+0.629804I$	$-4.59232+1.26614I$	$-12.85081+0.I$
$u=-0.443272-1.255980I$ $a=-0.597213+0.007055I$ $b=\ 0.007267-0.629804I$	$-4.59232-1.26614I$	$-12.85081+0.I$
$u=\ 0.746644+1.121580I$ $a=-1.69864-0.17272I$ $b=\ 0.533898-1.128190I$	$1.61047+6.99390I$	0
$u=\ 0.746644-1.121580I$ $a=-1.69864+0.17272I$ $b=\ 0.533898+1.128190I$	$1.61047-6.99390I$	0
$u=-0.389275+0.412909I$ $a=-0.822665-0.567690I$ $b=\ 0.09141+1.41820I$	$1.74793-5.52786I$	$-1.14031+9.13707I$
$u=-0.389275-0.412909I$ $a=-0.822665+0.567690I$ $b=\ 0.09141-1.41820I$	$1.74793+5.52786I$	$-1.14031-9.13707I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{40}-17u^{39}+\cdots-15u+1)(u^{163}+60u^{162}+\cdots-210273u-11881)$
c_2	$(u^{40}+u^{39}+\cdots-u+1)(u^{163}-4u^{162}+\cdots+73u+109)$
c_3	$(u^{40}+4u^{38}+\cdots+24u+5)(u^{163}-u^{162}+\cdots+145270u+8171)$
c_4	$(u^{40}-2u^{39}+\cdots-6u+1)(u^{163}+5u^{162}+\cdots+44u+1)$
c_5	$(u^{40}+2u^{38}+\cdots+43u+5)$ $\cdot(u^{163}+u^{162}+\cdots-8899288561u+823046069)$
c_6	$(u^{40}-u^{39}+\cdots+u+1)(u^{163}-4u^{162}+\cdots+73u+109)$
c_7	$(u^{40}-14u^{39}+\cdots-6u+1)$ $\cdot(u^{163}+13u^{162}+\cdots+1378020u+540971)$
c_8	$(u^{40}+2u^{39}+\cdots+5u+1)(u^{163}+3u^{162}+\cdots+7u+5)$
c_9	$(u^{40}+2u^{39}+\cdots-4u+1)(u^{163}+u^{162}+\cdots-105758u+23671)$
c_{10}	$(u^{40}+14u^{39}+\cdots+6u+1)$ $\cdot(u^{163}+13u^{162}+\cdots+1378020u+540971)$
c_{11}	$(u^{40}+6u^{39}+\cdots+4u+1)(u^{163}-15u^{162}+\cdots-22u+1)$
c_{12}	$(u^{40}+2u^{39}+\cdots+6u+1)(u^{163}+5u^{162}+\cdots+44u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{40}+9y^{39}+\cdots+35y+1)$ $\cdot(y^{163}+84y^{162}+\cdots+3549326923y-141158161)$
c_2, c_6	$(y^{40}+17y^{39}+\cdots+15y+1)(y^{163}+60y^{162}+\cdots-210273y-11881)$
c_3	$(y^{40}+8y^{39}+\cdots+454y+25)$ $\cdot(y^{163}-y^{162}+\cdots+12294021696y-66765241)$
c_4, c_{12}	$(y^{40}+26y^{39}+\cdots+48y+1)(y^{163}+113y^{162}+\cdots-210y-1)$
c_5	$(y^{40}+4y^{39}+\cdots+231y+25)$ $\cdot(y^{163}+55y^{162}+\cdots-2.46\times10^{19}y-6.77\times10^{17})$
c_7, c_{10}	$(y^{40}+20y^{39}+\cdots+32y+1)$ $\cdot(y^{163}+99y^{162}+\cdots-12041923581454y-292649622841)$
c_8	$(y^{40}-12y^{39}+\cdots+11y+1)(y^{163}-9y^{162}+\cdots-101y-25)$
c_9	$(y^{40}-4y^{39}+\cdots+24y+1)$ $\cdot(y^{163}-21y^{162}+\cdots-12180652826y-560316241)$
c_{11}	$(y^{40}-20y^{39}+\cdots+8y+1)(y^{163}-21y^{162}+\cdots-582y-1)$