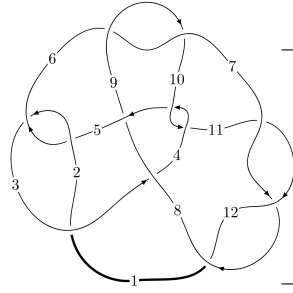
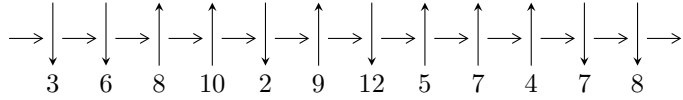


12n<sub>0492</sub> (K12n<sub>0492</sub>)



A knot diagram<sup>1</sup>

**Linearized knot diagram**



**Solving Sequence**

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

**Ideals for irreducible components<sup>2</sup> of  $X_{\text{par}}$**

$$I_1^u = \langle 4.46973 \times 10^{50} u^{60} + 8.99199 \times 10^{50} u^{59} + \dots + 8.26421 \times 10^{50} b - 5.17817 \times 10^{50}, \\ 3.56747 \times 10^{51} u^{60} + 4.54307 \times 10^{51} u^{59} + \dots + 1.57020 \times 10^{52} a - 1.57657 \times 10^{52}, u^{61} + 2u^{60} + \dots + 17u + \dots \rangle$$

$$I_2^u = \langle u^{15} + u^{14} - 2u^{13} - 2u^{12} + 6u^{11} + 6u^{10} - 8u^9 - 6u^8 + 11u^7 + 9u^6 - 9u^5 - 5u^4 + 6u^3 + 3u^2 + b - 2u - 1, \\ u^{14} + 2u^{13} - u^{12} - 3u^{11} + 4u^{10} + 8u^9 - 3u^8 - 5u^7 + 7u^6 + 5u^5 - 3u^4 + 3u^2 + a - u, u^{17} + u^{16} + \dots + u + \dots \rangle$$

\* 2 irreducible components of  $\dim_{\mathbb{C}} = 0$ , with total 78 representations.

<sup>1</sup>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>).

<sup>2</sup>All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

$$\text{I. } I_1^u = \langle 4.47 \times 10^{50} u^{60} + 8.99 \times 10^{50} u^{59} + \dots + 8.26 \times 10^{50} b - 5.18 \times 10^{50}, 3.57 \times 10^{51} u^{60} + 4.54 \times 10^{51} u^{59} + \dots + 1.57 \times 10^{52} a - 1.58 \times 10^{52}, u^{61} + 2u^{60} + \dots + 17u + 19 \rangle$$

(i) Arc colorings

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

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_9 = \begin{pmatrix} -0.227198u^{60} - 0.289331u^{59} + \dots - 26.0080u + 1.00406 \\ -0.540853u^{60} - 1.08806u^{59} + \dots + 4.86169u + 0.626578 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.253819u^{60} + 0.465067u^{59} + \dots - 3.89004u + 7.64807 \\ 0.300175u^{60} + 0.771180u^{59} + \dots - 12.1668u - 2.42640 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.676302u^{60} + 0.841602u^{59} + \dots + 3.47497u + 9.49090 \\ 0.207184u^{60} + 0.269966u^{59} + \dots - 4.37631u - 0.968624 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -0.274794u^{60} - 0.333191u^{59} + \dots - 3.80176u - 15.2300 \\ -0.503752u^{60} - 0.859618u^{59} + \dots + 9.74194u - 3.86368 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.313655u^{60} + 0.798733u^{59} + \dots - 30.8697u + 0.377479 \\ -0.540853u^{60} - 1.08806u^{59} + \dots + 4.86169u + 0.626578 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.459255u^{60} - 0.619696u^{59} + \dots + 4.13848u - 10.2887 \\ 0.255017u^{60} + 0.385918u^{59} + \dots - 11.3938u - 6.86607 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -1.18571u^{60} - 1.47546u^{59} + \dots - 4.66063u - 37.2565 \\ -0.0486439u^{60} - 0.362172u^{59} + \dots + 2.29122u - 3.22234 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes =  $-0.599933u^{60} - 0.940036u^{59} + \dots - 28.5387u + 5.37229$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$u^{61} + 18u^{60} + \dots + 5229u + 361$
$c_2, c_5$	$u^{61} + 2u^{60} + \dots + 17u + 19$
$c_3$	$u^{61} + 2u^{60} + \dots + 82113u + 15047$
$c_4, c_{10}$	$u^{61} + 3u^{60} + \dots + 21u + 1$
$c_6, c_9$	$u^{61} - 28u^{59} + \dots - 4u + 1$
$c_7, c_{11}, c_{12}$	$u^{61} + u^{60} + \dots + 15u - 1$
$c_8$	$u^{61} - u^{60} + \dots + 5u - 11$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1$	$y^{61} + 58y^{60} + \dots - 1648747y - 130321$
$c_2, c_5$	$y^{61} - 18y^{60} + \dots + 5229y - 361$
$c_3$	$y^{61} - 72y^{60} + \dots + 15660841481y - 226412209$
$c_4, c_{10}$	$y^{61} + 17y^{60} + \dots + 63y - 1$
$c_6, c_9$	$y^{61} - 56y^{60} + \dots + 94y - 1$
$c_7, c_{11}, c_{12}$	$y^{61} - 15y^{60} + \dots + 31y - 1$
$c_8$	$y^{61} + y^{60} + \dots + 7945y - 121$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.008560 + 0.099272I$		
$a = -0.30905 - 1.85898I$	$-3.62853 - 2.81695I$	$-7.75571 + 7.59659I$
$b = 0.359420 - 0.718984I$		
$u = 1.008560 - 0.099272I$		
$a = -0.30905 + 1.85898I$	$-3.62853 + 2.81695I$	$-7.75571 - 7.59659I$
$b = 0.359420 + 0.718984I$		
$u = 0.059768 + 1.029870I$		
$a = 0.357240 + 0.027030I$	$3.37069 + 4.37380I$	$4.08170 - 9.15688I$
$b = 0.775249 + 0.356076I$		
$u = 0.059768 - 1.029870I$		
$a = 0.357240 - 0.027030I$	$3.37069 - 4.37380I$	$4.08170 + 9.15688I$
$b = 0.775249 - 0.356076I$		
$u = -0.711308 + 0.756370I$		
$a = 0.898738 + 0.163809I$	$2.16071 - 2.54963I$	$-1.92850 + 5.48932I$
$b = -0.502080 + 0.422908I$		
$u = -0.711308 - 0.756370I$		
$a = 0.898738 - 0.163809I$	$2.16071 + 2.54963I$	$-1.92850 - 5.48932I$
$b = -0.502080 - 0.422908I$		
$u = -0.802317 + 0.516125I$		
$a = -1.53275 + 0.59230I$	$-6.39239 + 2.05870I$	$-6.76486 - 3.26008I$
$b = 0.14998 + 1.42541I$		
$u = -0.802317 - 0.516125I$		
$a = -1.53275 - 0.59230I$	$-6.39239 - 2.05870I$	$-6.76486 + 3.26008I$
$b = 0.14998 - 1.42541I$		
$u = 0.681279 + 0.639801I$		
$a = 0.355489 - 0.164381I$	$2.72340 + 1.00029I$	$-0.33756 + 1.68143I$
$b = -1.136570 - 0.305208I$		
$u = 0.681279 - 0.639801I$		
$a = 0.355489 + 0.164381I$	$2.72340 - 1.00029I$	$-0.33756 - 1.68143I$
$b = -1.136570 + 0.305208I$		

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.855118 + 0.666348I$		
$a = 0.79912 - 1.53720I$	$-1.78842 + 2.57888I$	$3.59230 - 3.67922I$
$b = 0.044913 - 1.261780I$		
$u = -0.855118 - 0.666348I$		
$a = 0.79912 + 1.53720I$	$-1.78842 - 2.57888I$	$3.59230 + 3.67922I$
$b = 0.044913 + 1.261780I$		
$u = -0.830799 + 0.768291I$		
$a = 0.040905 - 0.410536I$	$-0.20731 + 2.69693I$	$-1.60164 - 3.85142I$
$b = 0.438873 - 0.240508I$		
$u = -0.830799 - 0.768291I$		
$a = 0.040905 + 0.410536I$	$-0.20731 - 2.69693I$	$-1.60164 + 3.85142I$
$b = 0.438873 + 0.240508I$		
$u = -1.132350 + 0.015313I$		
$a = 0.529981 - 0.317231I$	$-2.57618 + 0.03241I$	$-6.83473 + 2.23858I$
$b = 0.499234 - 0.170729I$		
$u = -1.132350 - 0.015313I$		
$a = 0.529981 + 0.317231I$	$-2.57618 - 0.03241I$	$-6.83473 - 2.23858I$
$b = 0.499234 + 0.170729I$		
$u = 0.797110 + 0.332880I$		
$a = 0.93154 - 2.92490I$	$1.86824 - 4.30118I$	$-1.43694 + 7.83913I$
$b = 0.573126 - 0.489509I$		
$u = 0.797110 - 0.332880I$		
$a = 0.93154 + 2.92490I$	$1.86824 + 4.30118I$	$-1.43694 - 7.83913I$
$b = 0.573126 + 0.489509I$		
$u = -1.005330 + 0.593094I$		
$a = 0.285708 - 1.177370I$	$-0.86882 + 2.72261I$	$-4.26405 + 0.I$
$b = -0.222145 - 0.767554I$		
$u = -1.005330 - 0.593094I$		
$a = 0.285708 + 1.177370I$	$-0.86882 - 2.72261I$	$-4.26405 + 0.I$
$b = -0.222145 + 0.767554I$		

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.778504 + 0.873488I$ $a = 0.212728 + 0.508358I$ $b = -0.949362 + 0.147769I$	$4.30301 - 0.06144I$	$4.49581 + 0.I$
$u = 0.778504 - 0.873488I$ $a = 0.212728 - 0.508358I$ $b = -0.949362 - 0.147769I$	$4.30301 + 0.06144I$	$4.49581 + 0.I$
$u = -0.760268 + 0.241047I$ $a = -0.398024 + 1.076770I$ $b = -1.232000 + 0.398283I$	$1.36337 + 3.68980I$	$-4.58791 - 6.16767I$
$u = -0.760268 - 0.241047I$ $a = -0.398024 - 1.076770I$ $b = -1.232000 - 0.398283I$	$1.36337 - 3.68980I$	$-4.58791 + 6.16767I$
$u = 0.876318 + 0.829854I$ $a = -0.77583 - 1.74978I$ $b = 1.21040 - 1.31023I$	$7.73388 + 0.14159I$	0
$u = 0.876318 - 0.829854I$ $a = -0.77583 + 1.74978I$ $b = 1.21040 + 1.31023I$	$7.73388 - 0.14159I$	0
$u = 1.001920 + 0.674098I$ $a = -0.35058 - 1.68445I$ $b = 1.048960 - 0.498864I$	$1.72001 - 6.24237I$	0
$u = 1.001920 - 0.674098I$ $a = -0.35058 + 1.68445I$ $b = 1.048960 + 0.498864I$	$1.72001 + 6.24237I$	0
$u = -0.859996 + 0.852993I$ $a = -0.505439 + 0.295038I$ $b = -1.21247 + 1.10581I$	$9.10418 - 0.98120I$	0
$u = -0.859996 - 0.852993I$ $a = -0.505439 - 0.295038I$ $b = -1.21247 - 1.10581I$	$9.10418 + 0.98120I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.743198 + 0.258578I$ $a = 1.14961 + 2.70783I$ $b = -0.02378 + 1.65985I$	$-7.66046 - 1.07355I$	$-0.63774 + 8.35173I$
$u = 0.743198 - 0.258578I$ $a = 1.14961 - 2.70783I$ $b = -0.02378 - 1.65985I$	$-7.66046 + 1.07355I$	$-0.63774 - 8.35173I$
$u = -0.985859 + 0.708002I$ $a = -1.18958 + 1.16281I$ $b = 0.603722 + 0.517705I$	$1.33700 + 8.12439I$	$0. - 11.41912I$
$u = -0.985859 - 0.708002I$ $a = -1.18958 - 1.16281I$ $b = 0.603722 - 0.517705I$	$1.33700 - 8.12439I$	$0. + 11.41912I$
$u = -0.747298 + 0.958094I$ $a = 0.384523 - 0.093109I$ $b = 1.27040 - 1.04462I$	$8.45288 - 9.12237I$	$0$
$u = -0.747298 - 0.958094I$ $a = 0.384523 + 0.093109I$ $b = 1.27040 + 1.04462I$	$8.45288 + 9.12237I$	$0$
$u = 0.513333 + 0.577329I$ $a = 0.147645 - 0.303415I$ $b = -1.097740 - 0.294525I$	$2.71819 + 1.05648I$	$1.23406 + 1.60799I$
$u = 0.513333 - 0.577329I$ $a = 0.147645 + 0.303415I$ $b = -1.097740 + 0.294525I$	$2.71819 - 1.05648I$	$1.23406 - 1.60799I$
$u = 0.920582 + 0.813292I$ $a = -0.834573 - 0.068760I$ $b = -1.38008 - 1.21627I$	$7.59405 - 6.27627I$	$0$
$u = 0.920582 - 0.813292I$ $a = -0.834573 + 0.068760I$ $b = -1.38008 + 1.21627I$	$7.59405 + 6.27627I$	$0$



Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.188700 + 0.367540I$ $a = -0.51935 + 1.50281I$ $b = -0.734725 + 0.839423I$	$-0.58425 - 9.12112I$	0
$u = 1.188700 - 0.367540I$ $a = -0.51935 - 1.50281I$ $b = -0.734725 - 0.839423I$	$-0.58425 + 9.12112I$	0
$u = -0.943245 + 0.820348I$ $a = -0.77128 + 1.86248I$ $b = 1.05879 + 1.19926I$	$8.84141 + 7.20713I$	0
$u = -0.943245 - 0.820348I$ $a = -0.77128 - 1.86248I$ $b = 1.05879 - 1.19926I$	$8.84141 - 7.20713I$	0
$u = 0.816581 + 0.959000I$ $a = 0.543543 + 0.025883I$ $b = 1.20038 + 0.96984I$	$9.60140 + 1.01873I$	0
$u = 0.816581 - 0.959000I$ $a = 0.543543 - 0.025883I$ $b = 1.20038 - 0.96984I$	$9.60140 - 1.01873I$	0
$u = 0.729689 + 0.092257I$ $a = -2.17992 - 1.30658I$ $b = 0.296181 - 0.865356I$	$-4.76315 - 0.37609I$	$-6.92192 - 3.20821I$
$u = 0.729689 - 0.092257I$ $a = -2.17992 + 1.30658I$ $b = 0.296181 + 0.865356I$	$-4.76315 + 0.37609I$	$-6.92192 + 3.20821I$
$u = -0.958783 + 0.851896I$ $a = 0.574031 - 0.735538I$ $b = -0.272425 - 0.985135I$	$-0.94086 + 3.29997I$	0
$u = -0.958783 - 0.851896I$ $a = 0.574031 + 0.735538I$ $b = -0.272425 + 0.985135I$	$-0.94086 - 3.29997I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.008090 + 0.801211I$ $a = 0.049974 - 0.714510I$ $b = 1.004090 - 0.082477I$	$3.59655 - 6.16597I$	0
$u = 1.008090 - 0.801211I$ $a = 0.049974 + 0.714510I$ $b = 1.004090 + 0.082477I$	$3.59655 + 6.16597I$	0
$u = -0.634593 + 0.305711I$ $a = 1.70511 + 2.78485I$ $b = 0.475869 + 0.583891I$	$1.76589 - 1.46394I$	$-2.18428 - 1.39749I$
$u = -0.634593 - 0.305711I$ $a = 1.70511 - 2.78485I$ $b = 0.475869 - 0.583891I$	$1.76589 + 1.46394I$	$-2.18428 + 1.39749I$
$u = -1.32936$ $a = -0.425742$ $b = -0.130836$	$-2.35229$	0
$u = 1.022890 + 0.850141I$ $a = 0.46632 + 1.56053I$ $b = -1.17031 + 1.15196I$	$8.93314 - 7.65090I$	0
$u = 1.022890 - 0.850141I$ $a = 0.46632 - 1.56053I$ $b = -1.17031 - 1.15196I$	$8.93314 + 7.65090I$	0
$u = -1.054050 + 0.811352I$ $a = 0.55964 - 1.79633I$ $b = -1.23639 - 1.18766I$	$7.4752 + 15.6144I$	0
$u = -1.054050 - 0.811352I$ $a = 0.55964 + 1.79633I$ $b = -1.23639 + 1.18766I$	$7.4752 - 15.6144I$	0
$u = -0.200523 + 0.477929I$ $a = 0.745281 - 0.474801I$ $b = -0.274077 - 0.499104I$	$0.075701 + 1.180500I$	$0.98721 - 5.73205I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.200523 - 0.477929I$		
$a = 0.745281 + 0.474801I$	$0.075701 - 1.180500I$	$0.98721 + 5.73205I$
$b = -0.274077 + 0.499104I$		

**II.**

$$I_2^u = \langle u^{15} + u^{14} + \dots + b - 1, u^{14} + 2u^{13} + \dots + a - u, u^{17} + u^{16} + \dots + u + 1 \rangle$$

**(i) Arc colorings**

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

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_9 = \begin{pmatrix} -u^{14} - 2u^{13} + \dots - 3u^2 + u \\ -u^{15} - u^{14} + \dots + 2u + 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 2u^{16} + u^{15} + \dots - 11u^2 + 3 \\ u^{13} + u^{12} + \dots - u^2 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -2u^{16} - 2u^{15} + \dots + u + 1 \\ -u^{16} - u^{15} + \dots - 2u^2 + 1 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} u^{16} + 3u^{15} + \dots - 6u - 2 \\ u^{16} + u^{15} + \dots - 5u^2 - 2u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^{15} - 4u^{13} + \dots - u - 1 \\ -u^{15} - u^{14} + \dots + 2u + 1 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -u^{16} + u^{15} + \dots + 8u^2 - 2 \\ 2u^{16} + 2u^{15} + \dots - 3u^2 - u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u^{16} + 3u^{14} + \dots - 2u^2 + 2 \\ u^{16} + u^{15} + \dots - 6u^2 + 1 \end{pmatrix}$$

**(ii) Obstruction class = 1**

**(iii) Cusp Shapes**  $= -4u^{16} + u^{15} + 11u^{14} - 10u^{13} - 33u^{12} + 26u^{11} + 60u^{10} - 63u^9 - 83u^8 + 74u^7 + 83u^6 - 77u^5 - 57u^4 + 42u^3 + 26u^2 - 16u - 13$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$u^{17} - 7u^{16} + \dots + 7u - 1$
$c_2$	$u^{17} - u^{16} + \dots + u - 1$
$c_3$	$u^{17} + u^{16} + \dots + u - 1$
$c_4$	$u^{17} + 8u^{15} + \dots + u + 1$
$c_5$	$u^{17} + u^{16} + \dots + u + 1$
$c_6$	$u^{17} + u^{16} + \dots - 2u + 3$
$c_7$	$u^{17} - 4u^{16} + \dots + u - 1$
$c_8$	$u^{17} + 6u^{15} + \dots + u + 1$
$c_9$	$u^{17} - u^{16} + \dots - 2u - 3$
$c_{10}$	$u^{17} + 8u^{15} + \dots + u - 1$
$c_{11}, c_{12}$	$u^{17} + 4u^{16} + \dots + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1$	$y^{17} + 13y^{16} + \dots - 13y - 1$
$c_2, c_5$	$y^{17} - 7y^{16} + \dots + 7y - 1$
$c_3$	$y^{17} - y^{16} + \dots + 23y - 1$
$c_4, c_{10}$	$y^{17} + 16y^{16} + \dots - 15y - 1$
$c_6, c_9$	$y^{17} - 17y^{16} + \dots + 76y - 9$
$c_7, c_{11}, c_{12}$	$y^{17} - 16y^{16} + \dots + 9y - 1$
$c_8$	$y^{17} + 12y^{16} + \dots + 3y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.671850 + 0.699249I$ $a = 0.841267 - 0.388532I$ $b = -0.903817 - 0.063102I$	$3.25147 + 1.97750I$	$4.64322 - 3.77889I$
$u = 0.671850 - 0.699249I$ $a = 0.841267 + 0.388532I$ $b = -0.903817 + 0.063102I$	$3.25147 - 1.97750I$	$4.64322 + 3.77889I$
$u = 0.866153 + 0.652957I$ $a = 0.59645 + 1.79019I$ $b = 0.053159 + 1.090200I$	$-2.38366 - 2.53905I$	$-11.16316 + 2.70355I$
$u = 0.866153 - 0.652957I$ $a = 0.59645 - 1.79019I$ $b = 0.053159 - 1.090200I$	$-2.38366 + 2.53905I$	$-11.16316 - 2.70355I$
$u = -0.866800 + 0.682644I$ $a = 1.38670 - 1.09683I$ $b = 0.04620 - 1.82956I$	$-5.11635 + 2.63302I$	$-0.67661 - 3.79445I$
$u = -0.866800 - 0.682644I$ $a = 1.38670 + 1.09683I$ $b = 0.04620 + 1.82956I$	$-5.11635 - 2.63302I$	$-0.67661 + 3.79445I$
$u = -0.841839 + 0.249282I$ $a = -1.80507 + 0.60352I$ $b = 0.142712 + 0.798548I$	$-4.69017 + 1.10526I$	$-5.39958 - 6.02313I$
$u = -0.841839 - 0.249282I$ $a = -1.80507 - 0.60352I$ $b = 0.142712 - 0.798548I$	$-4.69017 - 1.10526I$	$-5.39958 + 6.02313I$
$u = 0.790910 + 0.155131I$ $a = -1.28257 - 2.60669I$ $b = 0.14748 - 1.56229I$	$-8.03189 - 0.67257I$	$-11.87928 - 2.66967I$
$u = 0.790910 - 0.155131I$ $a = -1.28257 + 2.60669I$ $b = 0.14748 + 1.56229I$	$-8.03189 + 0.67257I$	$-11.87928 + 2.66967I$

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.015230 + 0.682788I$ $a = -0.35180 - 1.41265I$ $b = 0.848573 - 0.216469I$	$2.19989 - 7.34377I$	$1.56348 + 8.60649I$
$u = 1.015230 - 0.682788I$ $a = -0.35180 + 1.41265I$ $b = 0.848573 + 0.216469I$	$2.19989 + 7.34377I$	$1.56348 - 8.60649I$
$u = -1.30846$ $a = 0.668334$ $b = 0.491899$	$-2.10341$	$15.5530$
$u = -0.448167 + 0.451140I$ $a = -1.27164 + 1.39509I$ $b = -0.799335 + 0.224628I$	$2.24044 + 2.96010I$	$2.17241 - 2.41528I$
$u = -0.448167 - 0.451140I$ $a = -1.27164 - 1.39509I$ $b = -0.799335 - 0.224628I$	$2.24044 - 2.96010I$	$2.17241 + 2.41528I$
$u = -1.033110 + 0.897117I$ $a = -0.447483 + 0.628029I$ $b = 0.219084 + 0.822435I$	$-1.22245 + 3.54950I$	$-12.5372 - 14.2971I$
$u = -1.033110 - 0.897117I$ $a = -0.447483 - 0.628029I$ $b = 0.219084 - 0.822435I$	$-1.22245 - 3.54950I$	$-12.5372 + 14.2971I$



### III. u-Polynomials

Crossings	u-Polynomials at each crossing
$c_1$	$(u^{17} - 7u^{16} + \dots + 7u - 1)(u^{61} + 18u^{60} + \dots + 5229u + 361)$
$c_2$	$(u^{17} - u^{16} + \dots + u - 1)(u^{61} + 2u^{60} + \dots + 17u + 19)$
$c_3$	$(u^{17} + u^{16} + \dots + u - 1)(u^{61} + 2u^{60} + \dots + 82113u + 15047)$
$c_4$	$(u^{17} + 8u^{15} + \dots + u + 1)(u^{61} + 3u^{60} + \dots + 21u + 1)$
$c_5$	$(u^{17} + u^{16} + \dots + u + 1)(u^{61} + 2u^{60} + \dots + 17u + 19)$
$c_6$	$(u^{17} + u^{16} + \dots - 2u + 3)(u^{61} - 28u^{59} + \dots - 4u + 1)$
$c_7$	$(u^{17} - 4u^{16} + \dots + u - 1)(u^{61} + u^{60} + \dots + 15u - 1)$
$c_8$	$(u^{17} + 6u^{15} + \dots + u + 1)(u^{61} - u^{60} + \dots + 5u - 11)$
$c_9$	$(u^{17} - u^{16} + \dots - 2u - 3)(u^{61} - 28u^{59} + \dots - 4u + 1)$
$c_{10}$	$(u^{17} + 8u^{15} + \dots + u - 1)(u^{61} + 3u^{60} + \dots + 21u + 1)$
$c_{11}, c_{12}$	$(u^{17} + 4u^{16} + \dots + u + 1)(u^{61} + u^{60} + \dots + 15u - 1)$

#### IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
$c_1$	$(y^{17} + 13y^{16} + \dots - 13y - 1)$ $\cdot (y^{61} + 58y^{60} + \dots - 1648747y - 130321)$
$c_2, c_5$	$(y^{17} - 7y^{16} + \dots + 7y - 1)(y^{61} - 18y^{60} + \dots + 5229y - 361)$
$c_3$	$(y^{17} - y^{16} + \dots + 23y - 1)$ $\cdot (y^{61} - 72y^{60} + \dots + 15660841481y - 226412209)$
$c_4, c_{10}$	$(y^{17} + 16y^{16} + \dots - 15y - 1)(y^{61} + 17y^{60} + \dots + 63y - 1)$
$c_6, c_9$	$(y^{17} - 17y^{16} + \dots + 76y - 9)(y^{61} - 56y^{60} + \dots + 94y - 1)$
$c_7, c_{11}, c_{12}$	$(y^{17} - 16y^{16} + \dots + 9y - 1)(y^{61} - 15y^{60} + \dots + 31y - 1)$
$c_8$	$(y^{17} + 12y^{16} + \dots + 3y - 1)(y^{61} + y^{60} + \dots + 7945y - 121)$