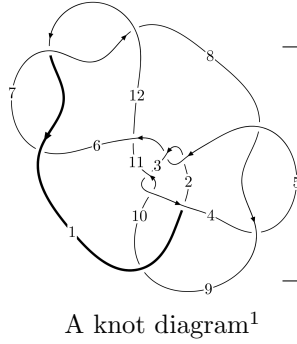
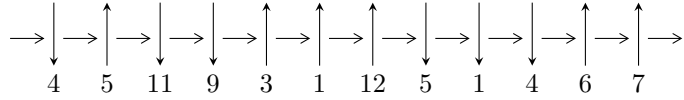


12n<sub>0794</sub> (K12n<sub>0794</sub>)



**Linearized knot diagram**



**Solving Sequence**

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

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

$$I_1^u = \langle 3.64825 \times 10^{60} u^{67} + 2.17531 \times 10^{61} u^{66} + \dots + 2.27197 \times 10^{61} b + 3.17348 \times 10^{62}, \\ - 3.41778 \times 10^{61} u^{67} + 4.19437 \times 10^{61} u^{66} + \dots + 4.31675 \times 10^{62} a - 8.54844 \times 10^{62}, \\ u^{68} + 32u^{66} + \dots - 17u + 19 \rangle$$

$$I_2^u = \langle u^{17} + u^{16} + \dots + b + 3u, u^{16} - u^{15} + \dots + a - 1, u^{18} + u^{17} + \dots + 2u + 1 \rangle$$

\* 2 irreducible components of  $\dim_{\mathbb{C}} = 0$ , with total 86 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.

$$\mathbf{I. } I_1^u = \langle 3.65 \times 10^{60} u^{67} + 2.18 \times 10^{61} u^{66} + \dots + 2.27 \times 10^{61} b + 3.17 \times 10^{62}, -3.42 \times 10^{61} u^{67} + 4.19 \times 10^{61} u^{66} + \dots + 4.32 \times 10^{62} a - 8.55 \times 10^{62}, u^{68} + 32u^{66} + \dots - 17u + 19 \rangle$$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.0791748u^{67} - 0.0971649u^{66} + \dots + 7.13718u + 1.98030 \\ -0.160576u^{67} - 0.957454u^{66} + \dots + 5.17375u - 13.9679 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.434570u^{67} + 0.198997u^{66} + \dots - 3.14705u - 2.64483 \\ -0.802804u^{67} - 0.137974u^{66} + \dots - 6.93147u - 0.143677 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.221569u^{67} - 0.256066u^{66} + \dots - 4.45414u - 5.67050 \\ -0.431397u^{67} - 0.300463u^{66} + \dots + 0.0481534u - 2.05464 \end{pmatrix}$$

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

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

$$a_9 = \begin{pmatrix} 0.0300223u^{67} - 0.192535u^{66} + \dots + 1.41247u - 0.794270 \\ -0.541452u^{67} + 1.19433u^{66} + \dots - 21.1227u + 14.5984 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u^3 - 2u \\ u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.254863u^{67} - 0.559737u^{66} + \dots + 5.39514u - 4.47736 \\ -0.0427600u^{67} - 1.30834u^{66} + \dots + 10.9051u - 18.4670 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.0300223u^{67} - 0.192535u^{66} + \dots + 1.41247u - 0.794270 \\ -0.757625u^{67} + 1.35968u^{66} + \dots - 24.9663u + 18.2566 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes =  $-0.759415u^{67} - 2.10567u^{66} + \dots + 23.3339u - 15.4588$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$u^{68} - 6u^{67} + \dots - 27u + 1$
$c_2, c_5$	$u^{68} - 2u^{67} + \dots - 2106u + 1161$
$c_3, c_{10}$	$u^{68} - u^{67} + \dots + 430u + 55$
$c_4, c_8$	$u^{68} + 2u^{67} + \dots + 157u + 31$
$c_6, c_7, c_{12}$	$u^{68} + 32u^{66} + \dots + 17u + 19$
$c_9$	$u^{68} + 4u^{67} + \dots - u + 1$
$c_{11}$	$u^{68} - 2u^{65} + \dots - 109361u + 34447$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1$	$y^{68} - 54y^{67} + \dots + 189y + 1$
$c_2, c_5$	$y^{68} - 34y^{67} + \dots - 27367308y + 1347921$
$c_3, c_{10}$	$y^{68} + 25y^{67} + \dots + 220450y + 3025$
$c_4, c_8$	$y^{68} + 24y^{67} + \dots + 22223y + 961$
$c_6, c_7, c_{12}$	$y^{68} + 64y^{67} + \dots - 2075y + 361$
$c_9$	$y^{68} - 50y^{67} + \dots + 217y + 1$
$c_{11}$	$y^{68} + 46y^{66} + \dots + 15032565303y + 1186595809$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.585021 + 0.839577I$ $a = -0.653745 + 0.824312I$ $b = 1.156370 - 0.575904I$	$-0.92653 - 6.48550I$	0
$u = 0.585021 - 0.839577I$ $a = -0.653745 - 0.824312I$ $b = 1.156370 + 0.575904I$	$-0.92653 + 6.48550I$	0
$u = 0.844238 + 0.314098I$ $a = -2.05637 + 0.11980I$ $b = 1.29281 + 0.70336I$	$0.71987 + 11.42660I$	$2.99478 - 7.86086I$
$u = 0.844238 - 0.314098I$ $a = -2.05637 - 0.11980I$ $b = 1.29281 - 0.70336I$	$0.71987 - 11.42660I$	$2.99478 + 7.86086I$
$u = -0.774174 + 0.442382I$ $a = -1.73133 - 0.65078I$ $b = 1.280470 - 0.119995I$	$4.56836 - 2.47145I$	$9.7968 + 11.8051I$
$u = -0.774174 - 0.442382I$ $a = -1.73133 + 0.65078I$ $b = 1.280470 + 0.119995I$	$4.56836 + 2.47145I$	$9.7968 - 11.8051I$
$u = -0.601969 + 0.651291I$ $a = 0.198331 + 0.799993I$ $b = -0.865200 - 0.503209I$	$-1.65284 - 0.01935I$	$0.571143 + 0.160005I$
$u = -0.601969 - 0.651291I$ $a = 0.198331 - 0.799993I$ $b = -0.865200 + 0.503209I$	$-1.65284 + 0.01935I$	$0.571143 - 0.160005I$
$u = -0.878561 + 0.090514I$ $a = -1.54583 - 0.41382I$ $b = 0.864053 - 0.090063I$	$3.96123 - 0.33995I$	$6.36296 - 1.08101I$
$u = -0.878561 - 0.090514I$ $a = -1.54583 + 0.41382I$ $b = 0.864053 + 0.090063I$	$3.96123 + 0.33995I$	$6.36296 + 1.08101I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.761968 + 0.375228I$ $a = 1.51651 + 0.13278I$ $b = -1.057950 + 0.707192I$	$-0.72761 - 4.58564I$	$1.01495 + 4.58399I$
$u = -0.761968 - 0.375228I$ $a = 1.51651 - 0.13278I$ $b = -1.057950 - 0.707192I$	$-0.72761 + 4.58564I$	$1.01495 - 4.58399I$
$u = 0.087906 + 1.195280I$ $a = -1.036050 - 0.725247I$ $b = 1.336380 - 0.253283I$	$4.71460 + 0.88214I$	0
$u = 0.087906 - 1.195280I$ $a = -1.036050 + 0.725247I$ $b = 1.336380 + 0.253283I$	$4.71460 - 0.88214I$	0
$u = 0.046584 + 1.212660I$ $a = -0.563907 + 1.049470I$ $b = -0.263145 + 1.187020I$	$-4.47402 - 2.56568I$	0
$u = 0.046584 - 1.212660I$ $a = -0.563907 - 1.049470I$ $b = -0.263145 - 1.187020I$	$-4.47402 + 2.56568I$	0
$u = 0.776255 + 0.084754I$ $a = 1.96737 + 0.45778I$ $b = -1.044090 - 0.751566I$	$4.20666 + 3.23614I$	$6.34201 - 8.24044I$
$u = 0.776255 - 0.084754I$ $a = 1.96737 - 0.45778I$ $b = -1.044090 + 0.751566I$	$4.20666 - 3.23614I$	$6.34201 + 8.24044I$
$u = -0.109251 + 1.214890I$ $a = 0.80584 + 2.16972I$ $b = -0.484418 - 0.064884I$	$-4.41125 + 1.64954I$	0
$u = -0.109251 - 1.214890I$ $a = 0.80584 - 2.16972I$ $b = -0.484418 + 0.064884I$	$-4.41125 - 1.64954I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.320207 + 1.177390I$ $a = 0.418143 - 0.634187I$ $b = -1.087520 + 0.478535I$	$0.881245 + 0.747708I$	0
$u = 0.320207 - 1.177390I$ $a = 0.418143 + 0.634187I$ $b = -1.087520 - 0.478535I$	$0.881245 - 0.747708I$	0
$u = -0.489550 + 1.132460I$ $a = -0.845195 - 0.209506I$ $b = 0.961776 - 0.091917I$	$0.75256 - 4.50250I$	0
$u = -0.489550 - 1.132460I$ $a = -0.845195 + 0.209506I$ $b = 0.961776 + 0.091917I$	$0.75256 + 4.50250I$	0
$u = 0.168395 + 1.254750I$ $a = 0.909624 - 0.738354I$ $b = -1.68054 + 0.07433I$	$1.09519 + 2.03459I$	0
$u = 0.168395 - 1.254750I$ $a = 0.909624 + 0.738354I$ $b = -1.68054 - 0.07433I$	$1.09519 - 2.03459I$	0
$u = 0.622042 + 0.266962I$ $a = -0.333728 + 1.061650I$ $b = 0.328416 - 1.217050I$	$-2.34650 + 4.70127I$	$1.66541 - 6.89019I$
$u = 0.622042 - 0.266962I$ $a = -0.333728 - 1.061650I$ $b = 0.328416 + 1.217050I$	$-2.34650 - 4.70127I$	$1.66541 + 6.89019I$
$u = 0.201780 + 1.344270I$ $a = 0.47779 - 1.40922I$ $b = -1.357800 - 0.380695I$	$0.11696 + 3.16123I$	0
$u = 0.201780 - 1.344270I$ $a = 0.47779 + 1.40922I$ $b = -1.357800 + 0.380695I$	$0.11696 - 3.16123I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.331726 + 1.319540I$ $a = 1.35514 - 0.94546I$ $b = -1.019720 - 0.935363I$	$-0.19484 + 7.23478I$	0
$u = 0.331726 - 1.319540I$ $a = 1.35514 + 0.94546I$ $b = -1.019720 + 0.935363I$	$-0.19484 - 7.23478I$	0
$u = -0.380858 + 1.315350I$ $a = -0.930411 - 0.962245I$ $b = 0.739624 - 0.217715I$	$-0.42239 - 4.83795I$	0
$u = -0.380858 - 1.315350I$ $a = -0.930411 + 0.962245I$ $b = 0.739624 + 0.217715I$	$-0.42239 + 4.83795I$	0
$u = -0.580317 + 0.214057I$ $a = 3.38471 - 0.40273I$ $b = -0.891148 + 0.455999I$	$-1.63250 - 3.94273I$	$3.88858 + 5.95678I$
$u = -0.580317 - 0.214057I$ $a = 3.38471 + 0.40273I$ $b = -0.891148 - 0.455999I$	$-1.63250 + 3.94273I$	$3.88858 - 5.95678I$
$u = -0.084571 + 1.382930I$ $a = -0.054497 + 0.537587I$ $b = 0.045186 + 0.944137I$	$-5.41837 - 1.91442I$	0
$u = -0.084571 - 1.382930I$ $a = -0.054497 - 0.537587I$ $b = 0.045186 - 0.944137I$	$-5.41837 + 1.91442I$	0
$u = 0.562673 + 0.242422I$ $a = -0.55392 + 1.40968I$ $b = 0.920370 + 0.284651I$	$7.32966 + 1.28471I$	$0.07472 - 6.09575I$
$u = 0.562673 - 0.242422I$ $a = -0.55392 - 1.40968I$ $b = 0.920370 - 0.284651I$	$7.32966 - 1.28471I$	$0.07472 + 6.09575I$



Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.235874 + 1.386730I$ $a = 1.69465 + 0.80471I$ $b = -1.178050 + 0.518685I$	$-6.75272 - 6.96733I$	0
$u = -0.235874 - 1.386730I$ $a = 1.69465 - 0.80471I$ $b = -1.178050 - 0.518685I$	$-6.75272 + 6.96733I$	0
$u = -0.190501 + 1.394310I$ $a = -0.048935 - 0.246393I$ $b = -0.90235 - 1.14942I$	$-7.39171 - 0.99406I$	0
$u = -0.190501 - 1.394310I$ $a = -0.048935 + 0.246393I$ $b = -0.90235 + 1.14942I$	$-7.39171 + 0.99406I$	0
$u = 0.420221 + 0.405604I$ $a = -2.51276 - 0.10334I$ $b = 0.464174 + 0.701970I$	$-3.13089 - 1.54804I$	$-1.36292 - 1.90908I$
$u = 0.420221 - 0.405604I$ $a = -2.51276 + 0.10334I$ $b = 0.464174 - 0.701970I$	$-3.13089 + 1.54804I$	$-1.36292 + 1.90908I$
$u = 0.23300 + 1.40172I$ $a = 0.136138 + 1.020950I$ $b = 0.642226 + 0.477177I$	$2.04560 + 4.25350I$	0
$u = 0.23300 - 1.40172I$ $a = 0.136138 - 1.020950I$ $b = 0.642226 - 0.477177I$	$2.04560 - 4.25350I$	0
$u = 0.25005 + 1.40302I$ $a = 0.452465 - 0.063748I$ $b = 0.51101 - 1.40622I$	$-7.67530 + 7.91631I$	0
$u = 0.25005 - 1.40302I$ $a = 0.452465 + 0.063748I$ $b = 0.51101 + 1.40622I$	$-7.67530 - 7.91631I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.16140 + 1.41858I$ $a = -1.24247 + 0.74107I$ $b = 0.915024 + 0.747286I$	$-8.91641 + 0.61969I$	0
$u = 0.16140 - 1.41858I$ $a = -1.24247 - 0.74107I$ $b = 0.915024 - 0.747286I$	$-8.91641 - 0.61969I$	0
$u = 0.537783 + 0.087841I$ $a = 2.96586 - 1.04036I$ $b = -1.52148 - 0.18593I$	$4.68996 + 0.46786I$	$7.22305 + 1.64442I$
$u = 0.537783 - 0.087841I$ $a = 2.96586 + 1.04036I$ $b = -1.52148 + 0.18593I$	$4.68996 - 0.46786I$	$7.22305 - 1.64442I$
$u = -0.462909 + 0.260608I$ $a = 1.080330 + 0.319178I$ $b = -0.662469 - 0.970115I$	$-2.09947 + 1.48120I$	$2.08400 + 2.14333I$
$u = -0.462909 - 0.260608I$ $a = 1.080330 - 0.319178I$ $b = -0.662469 + 0.970115I$	$-2.09947 - 1.48120I$	$2.08400 - 2.14333I$
$u = 0.33871 + 1.44643I$ $a = -1.15336 + 1.08090I$ $b = 1.34420 + 0.82627I$	$-4.9007 + 15.7068I$	0
$u = 0.33871 - 1.44643I$ $a = -1.15336 - 1.08090I$ $b = 1.34420 - 0.82627I$	$-4.9007 - 15.7068I$	0
$u = -0.30870 + 1.45326I$ $a = -0.867601 - 0.899252I$ $b = 1.274760 - 0.368438I$	$-1.42486 - 6.45156I$	0
$u = -0.30870 - 1.45326I$ $a = -0.867601 + 0.899252I$ $b = 1.274760 + 0.368438I$	$-1.42486 + 6.45156I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.29407 + 1.45891I$ $a = 0.812866 + 0.905342I$ $b = -1.08796 + 0.91104I$	$-6.61106 - 8.42932I$	0
$u = -0.29407 - 1.45891I$ $a = 0.812866 - 0.905342I$ $b = -1.08796 - 0.91104I$	$-6.61106 + 8.42932I$	0
$u = -0.15940 + 1.55376I$ $a = -0.323360 + 0.186562I$ $b = -0.528474 - 0.501666I$	$-8.96596 - 2.72922I$	0
$u = -0.15940 - 1.55376I$ $a = -0.323360 - 0.186562I$ $b = -0.528474 + 0.501666I$	$-8.96596 + 2.72922I$	0
$u = -0.226546 + 0.361814I$ $a = -0.207356 + 0.203335I$ $b = -0.236794 + 0.345165I$	$0.028670 - 0.891534I$	$0.60339 + 7.68948I$
$u = -0.226546 - 0.361814I$ $a = -0.207356 - 0.203335I$ $b = -0.236794 - 0.345165I$	$0.028670 + 0.891534I$	$0.60339 - 7.68948I$
$u = 0.05123 + 1.58208I$ $a = 0.0639758 + 0.0036631I$ $b = 0.792248 - 0.599111I$	$-9.31745 - 4.59027I$	0
$u = 0.05123 - 1.58208I$ $a = 0.0639758 - 0.0036631I$ $b = 0.792248 + 0.599111I$	$-9.31745 + 4.59027I$	0

$$I_2^u = \langle u^{17} + u^{16} + \dots + b + 3u, u^{16} - u^{15} + \dots + a - 1, u^{18} + u^{17} + \dots + 2u + 1 \rangle \quad \text{II.}$$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^{16} + u^{15} + \dots + 9u + 1 \\ -u^{17} - u^{16} + \dots - 2u^2 - 3u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^{17} - u^{16} + \dots - 8u^2 + 3 \\ -u^{17} + u^{16} + \dots + u + 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 2u^{17} + 18u^{15} + \dots - 12u^2 + 15u \\ -u^{17} - 3u^{16} + \dots - 5u - 1 \end{pmatrix}$$

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

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

$$a_9 = \begin{pmatrix} -2u^{17} - 2u^{16} + \dots - 12u - 2 \\ u^{17} + u^{16} + \dots - 2u^2 + 2u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u^3 - 2u \\ u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^{16} + u^{15} + \dots + 10u + 1 \\ -u^{15} - u^{14} + \dots - u^3 - 3u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -2u^{17} - 2u^{16} + \dots - 12u - 2 \\ 2u^{17} + 2u^{16} + \dots + 7u^3 + 4u \end{pmatrix}$$

(ii) Obstruction class = 1

$$\text{(iii) Cusp Shapes} = -u^{17} + 10u^{16} + 2u^{15} + 84u^{14} + 52u^{13} + 276u^{12} + 194u^{11} + 420u^{10} + 292u^9 + 227u^8 + 135u^7 - 85u^6 - 84u^5 - 67u^4 - 54u^3 + 53u^2 + 25u + 11$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$u^{18} - 3u^{17} + \dots + 4u^2 + 1$
$c_2$	$u^{18} + 3u^{17} + \dots + 3u + 1$
$c_3$	$u^{18} + 6u^{16} + \dots - u + 1$
$c_4$	$u^{18} + u^{17} + \dots + 9u^2 + 1$
$c_5$	$u^{18} - 3u^{17} + \dots - 3u + 1$
$c_6, c_7$	$u^{18} + u^{17} + \dots + 2u + 1$
$c_8$	$u^{18} - u^{17} + \dots + 9u^2 + 1$
$c_9$	$u^{18} + u^{17} + \dots + 6u^2 + 1$
$c_{10}$	$u^{18} + 6u^{16} + \dots + u + 1$
$c_{11}$	$u^{18} + u^{17} + \dots + 7u^2 + 1$
$c_{12}$	$u^{18} - u^{17} + \dots - 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1$	$y^{18} - 11y^{17} + \dots + 8y + 1$
$c_2, c_5$	$y^{18} - 15y^{17} + \dots + 3y + 1$
$c_3, c_{10}$	$y^{18} + 12y^{17} + \dots - 3y + 1$
$c_4, c_8$	$y^{18} + 15y^{17} + \dots + 18y + 1$
$c_6, c_7, c_{12}$	$y^{18} + 19y^{17} + \dots + 12y + 1$
$c_9$	$y^{18} - 3y^{17} + \dots + 12y + 1$
$c_{11}$	$y^{18} - y^{17} + \dots + 14y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.773934 + 0.231488I$ $a = -2.08394 - 0.31153I$ $b = 1.282150 - 0.263447I$	$4.46749 - 1.83303I$	$7.57936 + 0.69386I$
$u = -0.773934 - 0.231488I$ $a = -2.08394 + 0.31153I$ $b = 1.282150 + 0.263447I$	$4.46749 + 1.83303I$	$7.57936 - 0.69386I$
$u = -0.214946 + 1.181900I$ $a = -0.677293 - 1.058070I$ $b = 1.59277 + 0.19212I$	$1.81304 - 1.52738I$	$7.36454 + 0.16276I$
$u = -0.214946 - 1.181900I$ $a = -0.677293 + 1.058070I$ $b = 1.59277 - 0.19212I$	$1.81304 + 1.52738I$	$7.36454 - 0.16276I$
$u = 0.207784 + 1.231320I$ $a = 1.113550 + 0.166807I$ $b = -1.303010 + 0.187111I$	$4.69100 + 1.96995I$	$2.62542 - 4.79081I$
$u = 0.207784 - 1.231320I$ $a = 1.113550 - 0.166807I$ $b = -1.303010 - 0.187111I$	$4.69100 - 1.96995I$	$2.62542 + 4.79081I$
$u = -0.038102 + 1.259780I$ $a = 0.48564 + 1.79761I$ $b = 0.318175 + 0.845570I$	$-5.44116 + 2.12330I$	$-7.44188 - 2.77053I$
$u = -0.038102 - 1.259780I$ $a = 0.48564 - 1.79761I$ $b = 0.318175 - 0.845570I$	$-5.44116 - 2.12330I$	$-7.44188 + 2.77053I$
$u = 0.622411 + 0.160441I$ $a = 1.46043 - 1.42137I$ $b = -1.086800 - 0.210154I$	$7.94870 + 0.94161I$	$11.28164 - 0.01284I$
$u = 0.622411 - 0.160441I$ $a = 1.46043 + 1.42137I$ $b = -1.086800 + 0.210154I$	$7.94870 - 0.94161I$	$11.28164 + 0.01284I$

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.370236 + 1.364330I$		
$a = -1.119980 - 0.827045I$	$-0.53522 - 6.08319I$	$2.90511 + 6.25752I$
$b = 1.088670 - 0.482755I$		
$u = -0.370236 - 1.364330I$		
$a = -1.119980 + 0.827045I$	$-0.53522 + 6.08319I$	$2.90511 - 6.25752I$
$b = 1.088670 + 0.482755I$		
$u = 0.27236 + 1.38898I$		
$a = 0.169437 - 1.185730I$	$2.95502 + 4.25254I$	$5.77944 - 3.56884I$
$b = -0.899855 - 0.319836I$		
$u = 0.27236 - 1.38898I$		
$a = 0.169437 + 1.185730I$	$2.95502 - 4.25254I$	$5.77944 + 3.56884I$
$b = -0.899855 + 0.319836I$		
$u = -0.07316 + 1.53250I$		
$a = 0.048434 + 0.355139I$	$-8.72912 - 3.55791I$	$-0.20761 + 3.94043I$
$b = 0.205474 - 0.413665I$		
$u = -0.07316 - 1.53250I$		
$a = 0.048434 - 0.355139I$	$-8.72912 + 3.55791I$	$-0.20761 - 3.94043I$
$b = 0.205474 + 0.413665I$		
$u = -0.132177 + 0.304356I$		
$a = 0.60372 + 3.51396I$	$-2.23494 - 2.68244I$	$2.11398 + 3.46850I$
$b = 0.302437 - 0.618636I$		
$u = -0.132177 - 0.304356I$		
$a = 0.60372 - 3.51396I$	$-2.23494 + 2.68244I$	$2.11398 - 3.46850I$
$b = 0.302437 + 0.618636I$		



### III. u-Polynomials

Crossings	u-Polynomials at each crossing
$c_1$	$(u^{18} - 3u^{17} + \dots + 4u^2 + 1)(u^{68} - 6u^{67} + \dots - 27u + 1)$
$c_2$	$(u^{18} + 3u^{17} + \dots + 3u + 1)(u^{68} - 2u^{67} + \dots - 2106u + 1161)$
$c_3$	$(u^{18} + 6u^{16} + \dots - u + 1)(u^{68} - u^{67} + \dots + 430u + 55)$
$c_4$	$(u^{18} + u^{17} + \dots + 9u^2 + 1)(u^{68} + 2u^{67} + \dots + 157u + 31)$
$c_5$	$(u^{18} - 3u^{17} + \dots - 3u + 1)(u^{68} - 2u^{67} + \dots - 2106u + 1161)$
$c_6, c_7$	$(u^{18} + u^{17} + \dots + 2u + 1)(u^{68} + 32u^{66} + \dots + 17u + 19)$
$c_8$	$(u^{18} - u^{17} + \dots + 9u^2 + 1)(u^{68} + 2u^{67} + \dots + 157u + 31)$
$c_9$	$(u^{18} + u^{17} + \dots + 6u^2 + 1)(u^{68} + 4u^{67} + \dots - u + 1)$
$c_{10}$	$(u^{18} + 6u^{16} + \dots + u + 1)(u^{68} - u^{67} + \dots + 430u + 55)$
$c_{11}$	$(u^{18} + u^{17} + \dots + 7u^2 + 1)(u^{68} - 2u^{65} + \dots - 109361u + 34447)$
$c_{12}$	$(u^{18} - u^{17} + \dots - 2u + 1)(u^{68} + 32u^{66} + \dots + 17u + 19)$

#### IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
$c_1$	$(y^{18} - 11y^{17} + \dots + 8y + 1)(y^{68} - 54y^{67} + \dots + 189y + 1)$
$c_2, c_5$	$(y^{18} - 15y^{17} + \dots + 3y + 1)$ $\cdot (y^{68} - 34y^{67} + \dots - 27367308y + 1347921)$
$c_3, c_{10}$	$(y^{18} + 12y^{17} + \dots - 3y + 1)(y^{68} + 25y^{67} + \dots + 220450y + 3025)$
$c_4, c_8$	$(y^{18} + 15y^{17} + \dots + 18y + 1)(y^{68} + 24y^{67} + \dots + 22223y + 961)$
$c_6, c_7, c_{12}$	$(y^{18} + 19y^{17} + \dots + 12y + 1)(y^{68} + 64y^{67} + \dots - 2075y + 361)$
$c_9$	$(y^{18} - 3y^{17} + \dots + 12y + 1)(y^{68} - 50y^{67} + \dots + 217y + 1)$
$c_{11}$	$(y^{18} - y^{17} + \dots + 14y + 1)$ $\cdot (y^{68} + 46y^{66} + \dots + 15032565303y + 1186595809)$