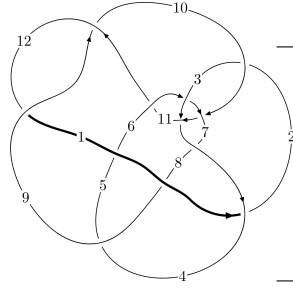
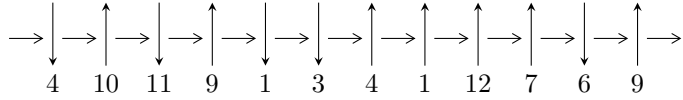


12n<sub>0704</sub> (K12n<sub>0704</sub>)

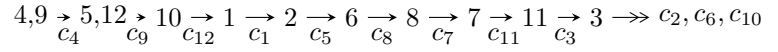


A knot diagram<sup>1</sup>

**Linearized knot diagram**



**Solving Sequence**



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

$$I_1^u = \langle 1.19445 \times 10^{198} u^{45} - 6.74601 \times 10^{197} u^{44} + \dots + 4.55141 \times 10^{201} b - 1.33536 \times 10^{201}, \\ 1.06146 \times 10^{200} u^{45} + 1.69938 \times 10^{199} u^{44} + \dots + 1.77505 \times 10^{203} a - 2.99606 \times 10^{203}, \\ u^{46} + 56u^{44} + \dots - 1378u + 507 \rangle$$

$$I_2^u = \langle 788638025662u^{15} - 78518326905455u^{14} + \dots + 919477490510109b - 419677061820201, \\ 73623372272275u^{15} - 47637302039197u^{14} + \dots + 919477490510109a + 2632097779359569, \\ u^{16} + u^{15} + \dots + 15u + 9 \rangle$$

\* 2 irreducible components of  $\dim_{\mathbb{C}} = 0$ , with total 62 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.

$$\mathbf{I. } I_1^u = \langle 1.19 \times 10^{198} u^{45} - 6.75 \times 10^{197} u^{44} + \dots + 4.55 \times 10^{201} b - 1.34 \times 10^{201}, 1.06 \times 10^{200} u^{45} + 1.70 \times 10^{199} u^{44} + \dots + 1.78 \times 10^{203} a - 3.00 \times 10^{203}, u^{46} + 56u^{44} + \dots - 1378u + 507 \rangle$$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} -0.000597989u^{45} - 0.0000957369u^{44} + \dots - 1.97693u + 1.68787 \\ -0.000262435u^{45} + 0.000148218u^{44} + \dots + 0.754607u + 0.293395 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.000625366u^{45} - 0.000355332u^{44} + \dots - 0.368332u + 1.08941 \\ 0.0000695995u^{45} + 0.000148080u^{44} + \dots + 1.20417u + 0.198918 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.000597989u^{45} - 0.0000957369u^{44} + \dots - 1.97693u + 1.68787 \\ -0.000174434u^{45} + 0.000154808u^{44} + \dots + 0.583352u + 0.244856 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.000423555u^{45} - 0.000250544u^{44} + \dots - 2.56028u + 1.44302 \\ -0.000174434u^{45} + 0.000154808u^{44} + \dots + 0.583352u + 0.244856 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.000392342u^{45} + 0.0000695995u^{44} + \dots + 0.902157u + 1.74482 \\ 0.000138440u^{45} + 0.0000385594u^{44} + \dots + 0.267201u + 0.0758209 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.000625366u^{45} + 0.000355332u^{44} + \dots + 0.368332u - 1.08941 \\ -0.0000243237u^{45} - 0.000122334u^{44} + \dots + 0.623241u - 0.0187641 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.000649690u^{45} + 0.000477667u^{44} + \dots - 0.254909u - 1.07065 \\ -0.0000243237u^{45} - 0.000122334u^{44} + \dots + 0.623241u - 0.0187641 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.000621843u^{45} - 0.0000319284u^{44} + \dots + 1.04140u + 2.54422 \\ -0.000195680u^{45} + 0.0000193035u^{44} + \dots + 1.10047u + 0.158773 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.000304275u^{45} - 0.000150311u^{44} + \dots - 2.53168u + 0.571523 \\ -0.000414380u^{45} - 0.0000218287u^{44} + \dots - 0.337787u + 0.0757931 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes =  $-0.00268732u^{45} + 0.000514392u^{44} + \dots - 6.90355u + 4.66863$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$u^{46} + 9u^{45} + \dots - 598194u + 53041$
$c_2$	$u^{46} + 14u^{44} + \dots - 11u + 1$
$c_3$	$u^{46} - 3u^{45} + \dots - 23u + 3$
$c_4$	$u^{46} + 56u^{44} + \dots - 1378u + 507$
$c_5$	$u^{46} - 2u^{45} + \dots - 250u + 1279$
$c_6$	$u^{46} + 5u^{45} + \dots - 9u + 1$
$c_7$	$u^{46} + 15u^{44} + \dots - 3108u + 149$
$c_8, c_9, c_{12}$	$u^{46} + 33u^{44} + \dots - 141u + 19$
$c_{10}$	$u^{46} - 5u^{45} + \dots - 51u + 31$
$c_{11}$	$u^{46} - u^{45} + \dots + 65u + 49$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1$	$y^{46} - 93y^{45} + \dots - 17713407268y + 2813347681$
$c_2$	$y^{46} + 28y^{45} + \dots + 261y + 1$
$c_3$	$y^{46} + 3y^{45} + \dots + 5y + 9$
$c_4$	$y^{46} + 112y^{45} + \dots + 2295020y + 257049$
$c_5$	$y^{46} - 108y^{45} + \dots - 67250928y + 1635841$
$c_6$	$y^{46} + 3y^{45} + \dots + 9y + 1$
$c_7$	$y^{46} + 30y^{45} + \dots - 4374634y + 22201$
$c_8, c_9, c_{12}$	$y^{46} + 66y^{45} + \dots + 8809y + 361$
$c_{10}$	$y^{46} + 13y^{45} + \dots + 21765y + 961$
$c_{11}$	$y^{46} + 19y^{45} + \dots + 55653y + 2401$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.722623 + 0.663783I$ $a = -0.189781 + 1.081440I$ $b = -0.761905 + 0.077110I$	$-4.43282 + 1.52715I$	$-7.37334 - 5.22015I$
$u = -0.722623 - 0.663783I$ $a = -0.189781 - 1.081440I$ $b = -0.761905 - 0.077110I$	$-4.43282 - 1.52715I$	$-7.37334 + 5.22015I$
$u = 1.042020 + 0.291189I$ $a = 0.311194 + 0.202668I$ $b = 0.527721 + 0.608546I$	$1.89860 + 0.93839I$	$-4.03451 + 1.19726I$
$u = 1.042020 - 0.291189I$ $a = 0.311194 - 0.202668I$ $b = 0.527721 - 0.608546I$	$1.89860 - 0.93839I$	$-4.03451 - 1.19726I$
$u = -0.594177 + 0.677482I$ $a = 0.97182 - 1.32120I$ $b = -0.344145 - 0.034677I$	$-4.23209 + 3.88598I$	$-4.75603 - 4.49965I$
$u = -0.594177 - 0.677482I$ $a = 0.97182 + 1.32120I$ $b = -0.344145 + 0.034677I$	$-4.23209 - 3.88598I$	$-4.75603 + 4.49965I$
$u = 0.181031 + 0.824245I$ $a = -0.373014 + 0.986862I$ $b = 0.386192 - 0.053287I$	$0.75821 + 4.93973I$	$1.37497 - 6.10201I$
$u = 0.181031 - 0.824245I$ $a = -0.373014 - 0.986862I$ $b = 0.386192 + 0.053287I$	$0.75821 - 4.93973I$	$1.37497 + 6.10201I$
$u = -0.168414 + 0.786367I$ $a = -1.019670 + 0.047056I$ $b = -0.890177 + 0.606122I$	$-4.06154 - 0.13020I$	$-4.76095 - 0.53915I$
$u = -0.168414 - 0.786367I$ $a = -1.019670 - 0.047056I$ $b = -0.890177 - 0.606122I$	$-4.06154 + 0.13020I$	$-4.76095 + 0.53915I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.685524 + 0.242386I$		
$a = 0.634928 + 0.396219I$	$1.64805 + 1.08045I$	$3.15096 - 7.04605I$
$b = 0.266521 + 0.975007I$		
$u = 0.685524 - 0.242386I$		
$a = 0.634928 - 0.396219I$	$1.64805 - 1.08045I$	$3.15096 + 7.04605I$
$b = 0.266521 - 0.975007I$		
$u = -0.606976 + 0.353597I$		
$a = 1.06341 - 1.70650I$	$-4.39199 + 5.06705I$	$-1.75956 - 6.04792I$
$b = 0.169419 - 1.237650I$		
$u = -0.606976 - 0.353597I$		
$a = 1.06341 + 1.70650I$	$-4.39199 - 5.06705I$	$-1.75956 + 6.04792I$
$b = 0.169419 + 1.237650I$		
$u = 0.082102 + 0.677726I$		
$a = 0.469990 - 0.277050I$	$3.41907 - 4.27710I$	$-1.86663 - 0.85536I$
$b = -0.29228 - 1.51820I$		
$u = 0.082102 - 0.677726I$		
$a = 0.469990 + 0.277050I$	$3.41907 + 4.27710I$	$-1.86663 + 0.85536I$
$b = -0.29228 + 1.51820I$		
$u = -0.099218 + 0.655160I$		
$a = 1.85892 + 0.20385I$	$-2.02807 + 0.89669I$	$-0.59333 - 2.63444I$
$b = -1.099660 + 0.530114I$		
$u = -0.099218 - 0.655160I$		
$a = 1.85892 - 0.20385I$	$-2.02807 - 0.89669I$	$-0.59333 + 2.63444I$
$b = -1.099660 - 0.530114I$		
$u = 0.213548 + 0.536576I$		
$a = 1.94510 - 0.08651I$	$-1.18834 + 2.94575I$	$2.79513 - 7.62929I$
$b = 0.391610 + 0.666555I$		
$u = 0.213548 - 0.536576I$		
$a = 1.94510 + 0.08651I$	$-1.18834 - 2.94575I$	$2.79513 + 7.62929I$
$b = 0.391610 - 0.666555I$		

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.225474 + 0.520584I$		
$a = 0.860068 + 0.132577I$	$-1.20487 + 1.08188I$	$-2.86879 - 1.93861I$
$b = -0.575467 + 0.297341I$		
$u = -0.225474 - 0.520584I$		
$a = 0.860068 - 0.132577I$	$-1.20487 - 1.08188I$	$-2.86879 + 1.93861I$
$b = -0.575467 - 0.297341I$		
$u = -0.529336 + 0.126590I$		
$a = -0.73767 + 1.92374I$	$-3.13560 - 2.98726I$	$-2.43600 + 6.69169I$
$b = -0.833828 + 0.084948I$		
$u = -0.529336 - 0.126590I$		
$a = -0.73767 - 1.92374I$	$-3.13560 + 2.98726I$	$-2.43600 - 6.69169I$
$b = -0.833828 - 0.084948I$		
$u = 0.362920 + 0.366463I$		
$a = 0.70009 + 2.45399I$	$-3.13163 - 10.16720I$	$-0.48934 + 7.57078I$
$b = 0.875473 - 0.158897I$		
$u = 0.362920 - 0.366463I$		
$a = 0.70009 - 2.45399I$	$-3.13163 + 10.16720I$	$-0.48934 - 7.57078I$
$b = 0.875473 + 0.158897I$		
$u = -1.47983 + 0.30015I$		
$a = -0.113526 + 0.386179I$	$2.38652 - 5.13357I$	0
$b = 0.466727 + 0.213716I$		
$u = -1.47983 - 0.30015I$		
$a = -0.113526 - 0.386179I$	$2.38652 + 5.13357I$	0
$b = 0.466727 - 0.213716I$		
$u = 0.206753 + 0.194399I$		
$a = 2.05172 - 0.92917I$	$1.35869 + 0.69751I$	$4.29607 - 0.54875I$
$b = 0.347573 + 0.385865I$		
$u = 0.206753 - 0.194399I$		
$a = 2.05172 + 0.92917I$	$1.35869 - 0.69751I$	$4.29607 + 0.54875I$
$b = 0.347573 - 0.385865I$		

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.82791 + 0.18540I$		
$a = 0.095317 - 0.729148I$	$-1.73016 + 2.21015I$	0
$b = -0.550395 - 1.005790I$		
$u = 1.82791 - 0.18540I$		
$a = 0.095317 + 0.729148I$	$-1.73016 - 2.21015I$	0
$b = -0.550395 + 1.005790I$		
$u = -0.19250 + 2.63308I$		
$a = 0.671878 - 0.103363I$	$-11.36540 + 5.64381I$	0
$b = -2.71999 + 0.09262I$		
$u = -0.19250 - 2.63308I$		
$a = 0.671878 + 0.103363I$	$-11.36540 - 5.64381I$	0
$b = -2.71999 - 0.09262I$		
$u = 0.30985 + 2.75631I$		
$a = 0.666351 + 0.066193I$	$-17.1201 + 5.1887I$	0
$b = -2.79148 + 0.01630I$		
$u = 0.30985 - 2.75631I$		
$a = 0.666351 - 0.066193I$	$-17.1201 - 5.1887I$	0
$b = -2.79148 - 0.01630I$		
$u = -0.49972 + 2.82464I$		
$a = -0.642407 + 0.112172I$	$-14.4376 + 0.6038I$	0
$b = 2.42127 + 0.01216I$		
$u = -0.49972 - 2.82464I$		
$a = -0.642407 - 0.112172I$	$-14.4376 - 0.6038I$	0
$b = 2.42127 - 0.01216I$		
$u = -0.11803 + 2.94113I$		
$a = -0.598923 + 0.099596I$	$-13.8680 + 5.1464I$	0
$b = 2.73153 + 0.31584I$		
$u = -0.11803 - 2.94113I$		
$a = -0.598923 - 0.099596I$	$-13.8680 - 5.1464I$	0
$b = 2.73153 - 0.31584I$		



Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.00605 + 3.10643I$		
$a = 0.580378 + 0.060548I$	$-13.5048 - 13.8523I$	0
$b = -2.92917 - 0.02937I$		
$u = -0.00605 - 3.10643I$		
$a = 0.580378 - 0.060548I$	$-13.5048 + 13.8523I$	0
$b = -2.92917 + 0.02937I$		
$u = -0.37723 + 3.19003I$		
$a = -0.548210 + 0.055625I$	$-13.65630 - 3.67082I$	0
$b = 2.97114 + 0.61922I$		
$u = -0.37723 - 3.19003I$		
$a = -0.548210 - 0.055625I$	$-13.65630 + 3.67082I$	0
$b = 2.97114 - 0.61922I$		
$u = 0.70791 + 3.28454I$		
$a = -0.491311 - 0.131780I$	$-13.12530 - 1.26369I$	0
$b = 3.23332 - 0.44420I$		
$u = 0.70791 - 3.28454I$		
$a = -0.491311 + 0.131780I$	$-13.12530 + 1.26369I$	0
$b = 3.23332 + 0.44420I$		

**II.**

$$I_2^u = \langle 7.89 \times 10^{11} u^{15} - 7.85 \times 10^{13} u^{14} + \dots + 9.19 \times 10^{14} b - 4.20 \times 10^{14}, 7.36 \times 10^{13} u^{15} - 4.76 \times 10^{13} u^{14} + \dots + 9.19 \times 10^{14} a + 2.63 \times 10^{15}, u^{16} + u^{15} + \dots + 15u + 9 \rangle$$

**(i) Arc colorings**

$$\begin{aligned} a_4 &= \begin{pmatrix} 1 \\ 0 \end{pmatrix} \\ a_9 &= \begin{pmatrix} 0 \\ u \end{pmatrix} \\ a_5 &= \begin{pmatrix} 1 \\ -u^2 \end{pmatrix} \\ a_{12} &= \begin{pmatrix} -0.0800709u^{15} + 0.0518091u^{14} + \dots - 1.62186u - 2.86260 \\ -0.000857702u^{15} + 0.0853945u^{14} + \dots + 1.39867u + 0.456430 \end{pmatrix} \\ a_{10} &= \begin{pmatrix} 0.422782u^{15} + 0.157685u^{14} + \dots + 9.37781u + 2.87737 \\ 0.0444333u^{15} + 0.0205806u^{14} + \dots + 1.43880u + 1.35558 \end{pmatrix} \\ a_1 &= \begin{pmatrix} -0.0800709u^{15} + 0.0518091u^{14} + \dots - 1.62186u - 2.86260 \\ 0.270758u^{15} - 0.0289705u^{14} + \dots + 2.65623u + 1.64335 \end{pmatrix} \\ a_2 &= \begin{pmatrix} -0.350829u^{15} + 0.0807796u^{14} + \dots - 4.27809u - 4.50595 \\ 0.270758u^{15} - 0.0289705u^{14} + \dots + 2.65623u + 1.64335 \end{pmatrix} \\ a_6 &= \begin{pmatrix} -0.150620u^{15} - 0.106187u^{14} + \dots - 4.01725u - 0.820503 \\ -0.0851810u^{15} - 0.0130518u^{14} + \dots - 0.872683u - 0.785729 \end{pmatrix} \\ a_8 &= \begin{pmatrix} -0.422782u^{15} - 0.157685u^{14} + \dots - 9.37781u - 2.87737 \\ 0.198744u^{15} - 0.0486526u^{14} + \dots + 0.732607u + 1.03028 \end{pmatrix} \\ a_7 &= \begin{pmatrix} -0.621526u^{15} - 0.109033u^{14} + \dots - 10.1104u - 3.90765 \\ 0.198744u^{15} - 0.0486526u^{14} + \dots + 0.732607u + 1.03028 \end{pmatrix} \\ a_{11} &= \begin{pmatrix} 0.0797236u^{15} + 0.0501001u^{14} + \dots - 2.52386u - 1.58118 \\ 0.0894444u^{15} - 0.0458413u^{14} + \dots + 2.06356u + 0.413661 \end{pmatrix} \\ a_3 &= \begin{pmatrix} -0.194771u^{15} + 0.236670u^{14} + \dots + 4.93424u - 0.393951 \\ 0.175039u^{15} - 0.121465u^{14} + \dots + 1.06866u + 1.69379 \end{pmatrix} \end{aligned}$$

**(ii) Obstruction class = 1**

**(iii) Cusp Shapes**

$$= -\frac{541123579097900}{306492496836703} u^{15} + \frac{279674211722222}{306492496836703} u^{14} + \dots - \frac{2560838929027227}{306492496836703} u - \frac{1228461990620122}{306492496836703}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$u^{16} - 10u^{15} + \dots - 11u + 1$
$c_2$	$u^{16} - u^{15} + \dots + 6u + 1$
$c_3$	$u^{16} + 3u^{14} + \dots + 2u + 1$
$c_4$	$u^{16} + u^{15} + \dots + 15u + 9$
$c_5$	$u^{16} - u^{15} + \dots + 91u + 17$
$c_6$	$u^{16} - 2u^{15} + \dots + 2u + 1$
$c_7$	$u^{16} + u^{15} + \dots - 11u + 5$
$c_8, c_9$	$u^{16} + u^{15} + \dots - 2u + 1$
$c_{10}$	$u^{16} + 2u^{15} + \dots + 2u + 1$
$c_{11}$	$u^{16} + 7u^{14} + \dots + 8u + 5$
$c_{12}$	$u^{16} - u^{15} + \dots + 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1$	$y^{16} - 10y^{15} + \dots + 5y + 1$
$c_2$	$y^{16} + 15y^{15} + \dots - 34y + 1$
$c_3$	$y^{16} + 6y^{15} + \dots + 18y + 1$
$c_4$	$y^{16} + 3y^{15} + \dots + 513y + 81$
$c_5$	$y^{16} - 5y^{15} + \dots - 427y + 289$
$c_6$	$y^{16} + 2y^{15} + \dots + 10y + 1$
$c_7$	$y^{16} + 5y^{15} + \dots - 161y + 25$
$c_8, c_9, c_{12}$	$y^{16} + 21y^{15} + \dots - 14y + 1$
$c_{10}$	$y^{16} + 4y^{15} + \dots + 6y + 1$
$c_{11}$	$y^{16} + 14y^{15} + \dots + 226y + 25$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.893310 + 0.263570I$ $a = -0.589954 + 0.134532I$ $b = -0.554370 + 0.638444I$	$2.21646 - 1.01376I$	$22.0835 + 5.4010I$
$u = -0.893310 - 0.263570I$ $a = -0.589954 - 0.134532I$ $b = -0.554370 - 0.638444I$	$2.21646 + 1.01376I$	$22.0835 - 5.4010I$
$u = 0.681825 + 0.479862I$ $a = -0.346166 + 0.209492I$ $b = 0.001679 + 1.263930I$	$3.85961 + 4.70319I$	$8.55831 - 7.51978I$
$u = 0.681825 - 0.479862I$ $a = -0.346166 - 0.209492I$ $b = 0.001679 - 1.263930I$	$3.85961 - 4.70319I$	$8.55831 + 7.51978I$
$u = -1.238650 + 0.203176I$ $a = 0.363333 - 1.017220I$ $b = -0.591621 - 0.222631I$	$-0.58691 + 2.51670I$	$3.45399 - 4.44673I$
$u = -1.238650 - 0.203176I$ $a = 0.363333 + 1.017220I$ $b = -0.591621 + 0.222631I$	$-0.58691 - 2.51670I$	$3.45399 + 4.44673I$
$u = 0.274389 + 0.600424I$ $a = -0.936590 - 1.009320I$ $b = -0.923402 + 0.053522I$	$-3.63004 - 1.23018I$	$1.45254 + 3.84800I$
$u = 0.274389 - 0.600424I$ $a = -0.936590 + 1.009320I$ $b = -0.923402 - 0.053522I$	$-3.63004 + 1.23018I$	$1.45254 - 3.84800I$
$u = -1.396590 + 0.109133I$ $a = 0.006693 - 0.834622I$ $b = -0.65590 - 1.38874I$	$-0.315524 + 0.953488I$	$0.808208 - 0.633683I$
$u = -1.396590 - 0.109133I$ $a = 0.006693 + 0.834622I$ $b = -0.65590 + 1.38874I$	$-0.315524 - 0.953488I$	$0.808208 + 0.633683I$

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.077983 + 0.460813I$ $a = -3.11541 + 0.03348I$ $b = 0.337699 + 0.657908I$	$-3.44078 - 3.74719I$	$4.59997 + 2.83303I$
$u = -0.077983 - 0.460813I$ $a = -3.11541 - 0.03348I$ $b = 0.337699 - 0.657908I$	$-3.44078 + 3.74719I$	$4.59997 - 2.83303I$
$u = 2.21181 + 0.23952I$ $a = 0.007267 + 0.633167I$ $b = -0.07038 + 1.95938I$	$-1.01719 - 6.39683I$	$0.14163 + 5.33600I$
$u = 2.21181 - 0.23952I$ $a = 0.007267 - 0.633167I$ $b = -0.07038 - 1.95938I$	$-1.01719 + 6.39683I$	$0.14163 - 5.33600I$
$u = -0.06149 + 3.20027I$ $a = -0.555836 - 0.009838I$ $b = 2.95629 + 0.20169I$	$-13.53500 - 2.98379I$	$-1.59812 - 0.80751I$
$u = -0.06149 - 3.20027I$ $a = -0.555836 + 0.009838I$ $b = 2.95629 - 0.20169I$	$-13.53500 + 2.98379I$	$-1.59812 + 0.80751I$

### III. u-Polynomials

Crossings	u-Polynomials at each crossing
$c_1$	$(u^{16} - 10u^{15} + \dots - 11u + 1)(u^{46} + 9u^{45} + \dots - 598194u + 53041)$
$c_2$	$(u^{16} - u^{15} + \dots + 6u + 1)(u^{46} + 14u^{44} + \dots - 11u + 1)$
$c_3$	$(u^{16} + 3u^{14} + \dots + 2u + 1)(u^{46} - 3u^{45} + \dots - 23u + 3)$
$c_4$	$(u^{16} + u^{15} + \dots + 15u + 9)(u^{46} + 56u^{44} + \dots - 1378u + 507)$
$c_5$	$(u^{16} - u^{15} + \dots + 91u + 17)(u^{46} - 2u^{45} + \dots - 250u + 1279)$
$c_6$	$(u^{16} - 2u^{15} + \dots + 2u + 1)(u^{46} + 5u^{45} + \dots - 9u + 1)$
$c_7$	$(u^{16} + u^{15} + \dots - 11u + 5)(u^{46} + 15u^{44} + \dots - 3108u + 149)$
$c_8, c_9$	$(u^{16} + u^{15} + \dots - 2u + 1)(u^{46} + 33u^{44} + \dots - 141u + 19)$
$c_{10}$	$(u^{16} + 2u^{15} + \dots + 2u + 1)(u^{46} - 5u^{45} + \dots - 51u + 31)$
$c_{11}$	$(u^{16} + 7u^{14} + \dots + 8u + 5)(u^{46} - u^{45} + \dots + 65u + 49)$
$c_{12}$	$(u^{16} - u^{15} + \dots + 2u + 1)(u^{46} + 33u^{44} + \dots - 141u + 19)$

#### IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
$c_1$	$(y^{16} - 10y^{15} + \dots + 5y + 1)$ $\cdot (y^{46} - 93y^{45} + \dots - 17713407268y + 2813347681)$
$c_2$	$(y^{16} + 15y^{15} + \dots - 34y + 1)(y^{46} + 28y^{45} + \dots + 261y + 1)$
$c_3$	$(y^{16} + 6y^{15} + \dots + 18y + 1)(y^{46} + 3y^{45} + \dots + 5y + 9)$
$c_4$	$(y^{16} + 3y^{15} + \dots + 513y + 81)$ $\cdot (y^{46} + 112y^{45} + \dots + 2295020y + 257049)$
$c_5$	$(y^{16} - 5y^{15} + \dots - 427y + 289)$ $\cdot (y^{46} - 108y^{45} + \dots - 67250928y + 1635841)$
$c_6$	$(y^{16} + 2y^{15} + \dots + 10y + 1)(y^{46} + 3y^{45} + \dots + 9y + 1)$
$c_7$	$(y^{16} + 5y^{15} + \dots - 161y + 25)$ $\cdot (y^{46} + 30y^{45} + \dots - 4374634y + 22201)$
$c_8, c_9, c_{12}$	$(y^{16} + 21y^{15} + \dots - 14y + 1)(y^{46} + 66y^{45} + \dots + 8809y + 361)$
$c_{10}$	$(y^{16} + 4y^{15} + \dots + 6y + 1)(y^{46} + 13y^{45} + \dots + 21765y + 961)$
$c_{11}$	$(y^{16} + 14y^{15} + \dots + 226y + 25)(y^{46} + 19y^{45} + \dots + 55653y + 2401)$