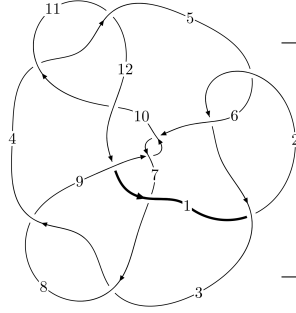
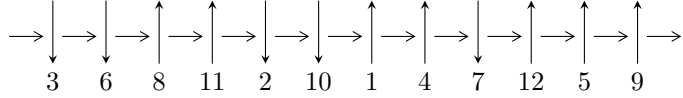


12a<sub>0324</sub> (K12a<sub>0324</sub>)



A knot diagram<sup>1</sup>

**Linearized knot diagram**



**Solving Sequence**

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

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

$$I_1^u = \langle -5.97705 \times 10^{454} u^{150} + 5.44321 \times 10^{453} u^{149} + \dots + 1.74550 \times 10^{455} b + 3.85569 \times 10^{456}, \\ 1.24527 \times 10^{457} u^{150} - 4.69754 \times 10^{456} u^{149} + \dots + 1.02984 \times 10^{457} a - 1.13363 \times 10^{459}, \\ u^{151} - u^{150} + \dots - 347u + 59 \rangle$$

$$I_2^u = \langle -6960094u^{37} - 14517025u^{36} + \dots + 2084882b + 33128019, \\ 100284480u^{37} + 64266775u^{36} + \dots + 2084882a - 144370152, u^{38} - 10u^{36} + \dots - 2u + 1 \rangle$$

\* 2 irreducible components of  $\dim_{\mathbb{C}} = 0$ , with total 189 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.

$$\text{I. } I_1^u = \langle -5.98 \times 10^{454} u^{150} + 5.44 \times 10^{453} u^{149} + \dots + 1.75 \times 10^{455} b + 3.86 \times 10^{456}, 1.25 \times 10^{457} u^{150} - 4.70 \times 10^{456} u^{149} + \dots + 1.03 \times 10^{457} a - 1.13 \times 10^{459}, u^{151} - u^{150} + \dots - 347u + 59 \rangle$$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} -1.20919u^{150} + 0.456142u^{149} + \dots - 509.338u + 110.078 \\ 0.342427u^{150} - 0.0311843u^{149} + \dots + 107.848u - 22.0893 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} 0.0321236u^{150} - 0.160065u^{149} + \dots + 124.646u - 27.6243 \\ 0.560103u^{150} - 0.0814844u^{149} + \dots + 176.427u - 36.0766 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -1.55162u^{150} + 0.487326u^{149} + \dots - 617.186u + 132.167 \\ 0.342427u^{150} - 0.0311843u^{149} + \dots + 107.848u - 22.0893 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.415768u^{150} - 0.161858u^{149} + \dots + 122.308u - 31.5806 \\ -0.307673u^{150} - 0.0169399u^{149} + \dots - 73.6657u + 14.9648 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.945289u^{150} + 0.0486104u^{149} + \dots - 261.709u + 50.8717 \\ 0.543340u^{150} - 0.113382u^{149} + \dots + 173.488u - 36.6489 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.234863u^{150} + 0.182289u^{149} + \dots + 20.9259u + 2.63592 \\ -0.188680u^{150} + 0.118465u^{149} + \dots - 71.2589u + 15.7347 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.597935u^{150} + 0.103993u^{149} + \dots + 141.486u - 21.8592 \\ -0.407732u^{150} + 0.124190u^{149} + \dots - 134.008u + 27.5308 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes =  $0.875815u^{150} + 0.572195u^{149} + \dots + 22.1449u + 33.7195$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$u^{151} + 59u^{150} + \dots - 241657u + 120409$
$c_2, c_5$	$u^{151} + 3u^{150} + \dots + 1193u - 347$
$c_3, c_8$	$u^{151} + u^{150} + \dots - 3953u - 319$
$c_4, c_{11}$	$u^{151} + u^{150} + \dots - 347u - 59$
$c_6, c_9$	$u^{151} - 6u^{150} + \dots + 220218u - 26057$
$c_7$	$u^{151} - 2u^{150} + \dots - 15334096u + 82036477$
$c_{10}$	$u^{151} - 73u^{150} + \dots + 62943u - 3481$
$c_{12}$	$u^{151} + 10u^{150} + \dots - 194288u - 9629$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1$	$y^{151} + 85y^{150} + \dots + 4342105053167y - 14498327281$
$c_2, c_5$	$y^{151} - 59y^{150} + \dots - 241657y - 120409$
$c_3, c_8$	$y^{151} - 101y^{150} + \dots + 16937937y - 101761$
$c_4, c_{11}$	$y^{151} - 73y^{150} + \dots + 62943y - 3481$
$c_6, c_9$	$y^{151} + 94y^{150} + \dots - 24366231410y - 678967249$
$c_7$	$y^{151} - 58y^{150} + \dots + 432393903636177302y - 6729983558571529$
$c_{10}$	$y^{151} + 27y^{150} + \dots - 2959833961y - 12117361$
$c_{12}$	$y^{151} - 34y^{150} + \dots + 5136926742y - 92717641$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.266173 + 0.955595I$ $a = -0.039639 - 0.162305I$ $b = -1.001740 - 0.126781I$	$0.0393853 + 0.0284279I$	0
$u = -0.266173 - 0.955595I$ $a = -0.039639 + 0.162305I$ $b = -1.001740 + 0.126781I$	$0.0393853 - 0.0284279I$	0
$u = 0.180807 + 0.968414I$ $a = 0.186766 + 0.331168I$ $b = 0.627417 + 0.335459I$	$-1.59974 - 1.64062I$	0
$u = 0.180807 - 0.968414I$ $a = 0.186766 - 0.331168I$ $b = 0.627417 - 0.335459I$	$-1.59974 + 1.64062I$	0
$u = -0.301843 + 0.933657I$ $a = 0.663027 + 0.942111I$ $b = 1.332720 + 0.459969I$	$6.43799 + 7.51813I$	0
$u = -0.301843 - 0.933657I$ $a = 0.663027 - 0.942111I$ $b = 1.332720 - 0.459969I$	$6.43799 - 7.51813I$	0
$u = -0.767737 + 0.609881I$ $a = -0.64597 - 1.64540I$ $b = 0.729574 - 0.844251I$	$-4.00055 - 4.07728I$	0
$u = -0.767737 - 0.609881I$ $a = -0.64597 + 1.64540I$ $b = 0.729574 + 0.844251I$	$-4.00055 + 4.07728I$	0
$u = 0.910083 + 0.463641I$ $a = 0.028649 + 0.538279I$ $b = -0.115994 + 0.705686I$	$-0.568526 - 0.503686I$	0
$u = 0.910083 - 0.463641I$ $a = 0.028649 - 0.538279I$ $b = -0.115994 - 0.705686I$	$-0.568526 + 0.503686I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.966948 + 0.094963I$ $a = -1.59959 - 0.17797I$ $b = 1.361200 + 0.067293I$	$6.58926 + 1.11575I$	0
$u = 0.966948 - 0.094963I$ $a = -1.59959 + 0.17797I$ $b = 1.361200 - 0.067293I$	$6.58926 - 1.11575I$	0
$u = 0.592643 + 0.763145I$ $a = 0.845780 - 0.577160I$ $b = 0.871487 - 0.507063I$	$-3.36943 - 0.94507I$	0
$u = 0.592643 - 0.763145I$ $a = 0.845780 + 0.577160I$ $b = 0.871487 + 0.507063I$	$-3.36943 + 0.94507I$	0
$u = -0.430995 + 0.861059I$ $a = 0.40197 + 1.41723I$ $b = -0.133292 + 1.137370I$	$0.79172 + 7.55240I$	0
$u = -0.430995 - 0.861059I$ $a = 0.40197 - 1.41723I$ $b = -0.133292 - 1.137370I$	$0.79172 - 7.55240I$	0
$u = -0.919760 + 0.265609I$ $a = -0.866660 + 0.895930I$ $b = 1.289860 + 0.314682I$	$3.71338 + 4.23491I$	0
$u = -0.919760 - 0.265609I$ $a = -0.866660 - 0.895930I$ $b = 1.289860 - 0.314682I$	$3.71338 - 4.23491I$	0
$u = 0.979888 + 0.358398I$ $a = -1.81724 + 3.44611I$ $b = 1.048720 - 0.040840I$	$7.20102 - 2.66249I$	0
$u = 0.979888 - 0.358398I$ $a = -1.81724 - 3.44611I$ $b = 1.048720 + 0.040840I$	$7.20102 + 2.66249I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.917889 + 0.265686I$ $a = 0.299366 - 0.613944I$ $b = -1.57710 + 0.03351I$	$6.03966 + 2.57566I$	0
$u = 0.917889 - 0.265686I$ $a = 0.299366 + 0.613944I$ $b = -1.57710 - 0.03351I$	$6.03966 - 2.57566I$	0
$u = 1.001240 + 0.305391I$ $a = -0.720437 + 0.860784I$ $b = 1.57230 - 0.23343I$	$6.37377 - 0.39083I$	0
$u = 1.001240 - 0.305391I$ $a = -0.720437 - 0.860784I$ $b = 1.57230 + 0.23343I$	$6.37377 + 0.39083I$	0
$u = -1.000190 + 0.314909I$ $a = 1.84864 + 0.49240I$ $b = -1.302810 + 0.197550I$	$4.12322 - 6.46883I$	0
$u = -1.000190 - 0.314909I$ $a = 1.84864 - 0.49240I$ $b = -1.302810 - 0.197550I$	$4.12322 + 6.46883I$	0
$u = 0.703455 + 0.795491I$ $a = 0.312828 + 0.491077I$ $b = 0.863591 + 0.357054I$	$-0.52833 + 5.15862I$	0
$u = 0.703455 - 0.795491I$ $a = 0.312828 - 0.491077I$ $b = 0.863591 - 0.357054I$	$-0.52833 - 5.15862I$	0
$u = 0.338545 + 1.008360I$ $a = -0.661891 + 0.816396I$ $b = -1.33310 + 0.58227I$	$4.5955 - 13.6183I$	0
$u = 0.338545 - 1.008360I$ $a = -0.661891 - 0.816396I$ $b = -1.33310 - 0.58227I$	$4.5955 + 13.6183I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.875174 + 0.610615I$ $a = -0.724669 - 0.751453I$ $b = -0.592619 - 1.014440I$	$-3.68787 - 0.71977I$	0
$u = -0.875174 - 0.610615I$ $a = -0.724669 + 0.751453I$ $b = -0.592619 + 1.014440I$	$-3.68787 + 0.71977I$	0
$u = 0.501332 + 0.783748I$ $a = -1.24533 + 0.89065I$ $b = -1.036630 + 0.336659I$	$-0.84542 - 5.01805I$	0
$u = 0.501332 - 0.783748I$ $a = -1.24533 - 0.89065I$ $b = -1.036630 - 0.336659I$	$-0.84542 + 5.01805I$	0
$u = 0.893044 + 0.174620I$ $a = -2.32937 + 1.21022I$ $b = -0.674592 - 0.255096I$	$6.46346 + 5.05998I$	0
$u = 0.893044 - 0.174620I$ $a = -2.32937 - 1.21022I$ $b = -0.674592 + 0.255096I$	$6.46346 - 5.05998I$	0
$u = -0.871275 + 0.658385I$ $a = 0.40610 - 1.46892I$ $b = 1.093100 - 0.210104I$	$2.28620 - 4.36380I$	0
$u = -0.871275 - 0.658385I$ $a = 0.40610 + 1.46892I$ $b = 1.093100 + 0.210104I$	$2.28620 + 4.36380I$	0
$u = 0.778150 + 0.461026I$ $a = 0.62429 - 1.45200I$ $b = -0.127338 - 0.705983I$	$-1.33743 + 1.95041I$	0
$u = 0.778150 - 0.461026I$ $a = 0.62429 + 1.45200I$ $b = -0.127338 + 0.705983I$	$-1.33743 - 1.95041I$	0



Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.016730 + 0.418997I$ $a = 1.43056 - 0.81313I$ $b = 0.098771 - 1.382640I$	$-0.150897 + 0.660964I$	0
$u = 1.016730 - 0.418997I$ $a = 1.43056 + 0.81313I$ $b = 0.098771 + 1.382640I$	$-0.150897 - 0.660964I$	0
$u = 0.947218 + 0.569441I$ $a = -0.223187 - 0.298072I$ $b = 0.183102 + 0.116630I$	$-0.39913 + 4.66537I$	0
$u = 0.947218 - 0.569441I$ $a = -0.223187 + 0.298072I$ $b = 0.183102 - 0.116630I$	$-0.39913 - 4.66537I$	0
$u = -1.11091$ $a = 0.661856$ $b = -1.06563$	2.32313	0
$u = -0.629888 + 0.619321I$ $a = -0.801701 + 0.244034I$ $b = -0.970989 + 0.084603I$	$1.70144 - 0.57477I$	0
$u = -0.629888 - 0.619321I$ $a = -0.801701 - 0.244034I$ $b = -0.970989 - 0.084603I$	$1.70144 + 0.57477I$	0
$u = -0.994623 + 0.523909I$ $a = 0.697019 + 1.019290I$ $b = 0.394830 + 0.808059I$	$-1.27413 - 5.76219I$	0
$u = -0.994623 - 0.523909I$ $a = 0.697019 - 1.019290I$ $b = 0.394830 - 0.808059I$	$-1.27413 + 5.76219I$	0
$u = 0.110888 + 0.868680I$ $a = 0.0181099 + 0.0004230I$ $b = 0.979038 + 0.216597I$	$-0.52350 + 4.20011I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.110888 - 0.868680I$ $a = 0.0181099 - 0.0004230I$ $b = 0.979038 - 0.216597I$	$-0.52350 - 4.20011I$	0
$u = 0.308405 + 0.817889I$ $a = -0.27040 + 1.39730I$ $b = -0.097431 + 0.989247I$	$2.00775 - 2.44556I$	0
$u = 0.308405 - 0.817889I$ $a = -0.27040 - 1.39730I$ $b = -0.097431 - 0.989247I$	$2.00775 + 2.44556I$	0
$u = -1.059500 + 0.381466I$ $a = 0.54761 + 2.32470I$ $b = -1.31172 + 0.66617I$	$9.18330 - 0.52130I$	0
$u = -1.059500 - 0.381466I$ $a = 0.54761 - 2.32470I$ $b = -1.31172 - 0.66617I$	$9.18330 + 0.52130I$	0
$u = 1.128790 + 0.037842I$ $a = -1.057410 - 0.005475I$ $b = -0.243625 + 0.731530I$	$6.53089 - 5.31320I$	0
$u = 1.128790 - 0.037842I$ $a = -1.057410 + 0.005475I$ $b = -0.243625 - 0.731530I$	$6.53089 + 5.31320I$	0
$u = -0.574701 + 0.972850I$ $a = -0.081660 - 0.440805I$ $b = -0.668104 - 0.626425I$	$0.12280 - 3.17215I$	0
$u = -0.574701 - 0.972850I$ $a = -0.081660 + 0.440805I$ $b = -0.668104 + 0.626425I$	$0.12280 + 3.17215I$	0
$u = -0.826640 + 0.269393I$ $a = 0.117716 - 0.139831I$ $b = -0.414105 + 0.081390I$	$1.291060 - 0.430892I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.826640 - 0.269393I$ $a = 0.117716 + 0.139831I$ $b = -0.414105 - 0.081390I$	$1.291060 + 0.430892I$	0
$u = 1.046410 + 0.432532I$ $a = 1.92962 + 0.02145I$ $b = -1.303460 + 0.078059I$	$8.74522 + 1.30880I$	0
$u = 1.046410 - 0.432532I$ $a = 1.92962 - 0.02145I$ $b = -1.303460 - 0.078059I$	$8.74522 - 1.30880I$	0
$u = -1.039470 + 0.454804I$ $a = 0.89826 + 3.43900I$ $b = -1.145480 + 0.088957I$	$8.61733 - 5.26654I$	0
$u = -1.039470 - 0.454804I$ $a = 0.89826 - 3.43900I$ $b = -1.145480 - 0.088957I$	$8.61733 + 5.26654I$	0
$u = 0.638241 + 0.943667I$ $a = -0.540211 - 0.467559I$ $b = -0.816241 - 0.025741I$	$-0.828545 + 0.993806I$	0
$u = 0.638241 - 0.943667I$ $a = -0.540211 + 0.467559I$ $b = -0.816241 + 0.025741I$	$-0.828545 - 0.993806I$	0
$u = 0.347928 + 0.780527I$ $a = 0.994860 - 0.850067I$ $b = 1.32562 - 0.60153I$	$0.94328 - 7.91215I$	0
$u = 0.347928 - 0.780527I$ $a = 0.994860 + 0.850067I$ $b = 1.32562 + 0.60153I$	$0.94328 + 7.91215I$	0
$u = 0.716511 + 0.900284I$ $a = 0.050177 - 0.584960I$ $b = 0.327357 - 0.673022I$	$-0.383606 - 1.084060I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.716511 - 0.900284I$ $a = 0.050177 + 0.584960I$ $b = 0.327357 + 0.673022I$	$-0.383606 + 1.084060I$	0
$u = -1.131230 + 0.233881I$ $a = 0.614960 + 0.638025I$ $b = -1.42700 - 0.39113I$	$5.59107 + 5.20508I$	0
$u = -1.131230 - 0.233881I$ $a = 0.614960 - 0.638025I$ $b = -1.42700 + 0.39113I$	$5.59107 - 5.20508I$	0
$u = -1.042720 + 0.502832I$ $a = -1.227280 - 0.618588I$ $b = -0.27177 - 1.45018I$	$-0.78836 - 5.67597I$	0
$u = -1.042720 - 0.502832I$ $a = -1.227280 + 0.618588I$ $b = -0.27177 + 1.45018I$	$-0.78836 + 5.67597I$	0
$u = -1.023990 + 0.550827I$ $a = -1.96687 - 1.22263I$ $b = 1.288210 - 0.133366I$	$5.81086 - 8.61662I$	0
$u = -1.023990 - 0.550827I$ $a = -1.96687 + 1.22263I$ $b = 1.288210 + 0.133366I$	$5.81086 + 8.61662I$	0
$u = -0.614586 + 0.548729I$ $a = 0.72044 + 1.89368I$ $b = -0.519949 + 0.584103I$	$-2.44864 + 1.41961I$	0
$u = -0.614586 - 0.548729I$ $a = 0.72044 - 1.89368I$ $b = -0.519949 - 0.584103I$	$-2.44864 - 1.41961I$	0
$u = 1.062050 + 0.508661I$ $a = -0.001809 - 0.567709I$ $b = -1.62642 + 0.48517I$	$8.31071 + 6.27709I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.062050 - 0.508661I$ $a = -0.001809 + 0.567709I$ $b = -1.62642 - 0.48517I$	$8.31071 - 6.27709I$	0
$u = -1.166650 + 0.181169I$ $a = 0.662822 + 0.059320I$ $b = 0.315986 + 0.844423I$	$6.95108 - 0.49917I$	0
$u = -1.166650 - 0.181169I$ $a = 0.662822 - 0.059320I$ $b = 0.315986 - 0.844423I$	$6.95108 + 0.49917I$	0
$u = 1.119040 + 0.389516I$ $a = -0.93816 + 2.01771I$ $b = 1.25759 + 0.75804I$	$9.21506 + 6.57820I$	0
$u = 1.119040 - 0.389516I$ $a = -0.93816 - 2.01771I$ $b = 1.25759 - 0.75804I$	$9.21506 - 6.57820I$	0
$u = -0.560895 + 0.573182I$ $a = 1.042140 - 0.673495I$ $b = -1.280270 - 0.258116I$	$4.40854 + 4.07935I$	0
$u = -0.560895 - 0.573182I$ $a = 1.042140 + 0.673495I$ $b = -1.280270 + 0.258116I$	$4.40854 - 4.07935I$	0
$u = -0.387958 + 0.679259I$ $a = -1.172130 - 0.757981I$ $b = -1.289050 - 0.429734I$	$2.50388 + 2.38188I$	0
$u = -0.387958 - 0.679259I$ $a = -1.172130 + 0.757981I$ $b = -1.289050 + 0.429734I$	$2.50388 - 2.38188I$	0
$u = -1.085440 + 0.552366I$ $a = -0.45780 - 2.03848I$ $b = 1.41138 - 0.53145I$	$4.53178 - 7.14521I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.085440 - 0.552366I$ $a = -0.45780 + 2.03848I$ $b = 1.41138 + 0.53145I$	$4.53178 + 7.14521I$	0
$u = 0.727980 + 0.284832I$ $a = 0.93112 - 1.82809I$ $b = -0.232317 - 1.101530I$	$-1.38151 + 2.46089I$	0
$u = 0.727980 - 0.284832I$ $a = 0.93112 + 1.82809I$ $b = -0.232317 + 1.101530I$	$-1.38151 - 2.46089I$	0
$u = 1.022460 + 0.666560I$ $a = 0.17775 - 1.61356I$ $b = -1.035590 - 0.560045I$	$-2.09793 + 6.35631I$	0
$u = 1.022460 - 0.666560I$ $a = 0.17775 + 1.61356I$ $b = -1.035590 + 0.560045I$	$-2.09793 - 6.35631I$	0
$u = 1.072220 + 0.612814I$ $a = 0.05312 + 2.11181I$ $b = 1.089490 + 0.417302I$	$0.87929 + 10.27800I$	0
$u = 1.072220 - 0.612814I$ $a = 0.05312 - 2.11181I$ $b = 1.089490 - 0.417302I$	$0.87929 - 10.27800I$	0
$u = 1.119310 + 0.524215I$ $a = 0.62470 - 1.50339I$ $b = -1.025990 - 0.022052I$	$2.27446 + 0.58633I$	0
$u = 1.119310 - 0.524215I$ $a = 0.62470 + 1.50339I$ $b = -1.025990 + 0.022052I$	$2.27446 - 0.58633I$	0
$u = -1.128380 + 0.514252I$ $a = -0.064006 + 0.139002I$ $b = 0.342622 + 0.417812I$	$3.73858 - 2.82652I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.128380 - 0.514252I$ $a = -0.064006 - 0.139002I$ $b = 0.342622 - 0.417812I$	$3.73858 + 2.82652I$	0
$u = -1.142800 + 0.484256I$ $a = 0.034324 - 0.476906I$ $b = 1.44649 + 0.58783I$	$8.54536 - 1.24048I$	0
$u = -1.142800 - 0.484256I$ $a = 0.034324 + 0.476906I$ $b = 1.44649 - 0.58783I$	$8.54536 + 1.24048I$	0
$u = 1.129510 + 0.576855I$ $a = 0.61495 - 1.88717I$ $b = -1.43606 - 0.65679I$	$3.25734 + 13.01480I$	0
$u = 1.129510 - 0.576855I$ $a = 0.61495 + 1.88717I$ $b = -1.43606 + 0.65679I$	$3.25734 - 13.01480I$	0
$u = 1.141410 + 0.569329I$ $a = -0.892689 + 0.878577I$ $b = 0.110140 + 1.092760I$	$4.48661 + 7.57578I$	0
$u = 1.141410 - 0.569329I$ $a = -0.892689 - 0.878577I$ $b = 0.110140 - 1.092760I$	$4.48661 - 7.57578I$	0
$u = -1.257330 + 0.219490I$ $a = -0.281673 - 0.236119I$ $b = 1.126470 - 0.004721I$	$5.60164 - 4.17808I$	0
$u = -1.257330 - 0.219490I$ $a = -0.281673 + 0.236119I$ $b = 1.126470 + 0.004721I$	$5.60164 + 4.17808I$	0
$u = 0.001164 + 0.713788I$ $a = 0.129995 + 0.819265I$ $b = -0.462542 + 0.444744I$	$0.80713 - 1.54342I$	$3.62434 + 4.97368I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.001164 - 0.713788I$ $a = 0.129995 - 0.819265I$ $b = -0.462542 - 0.444744I$	$0.80713 + 1.54342I$	$3.62434 - 4.97368I$
$u = -1.127370 + 0.626934I$ $a = 0.854578 + 0.802560I$ $b = 0.035326 + 1.277960I$	$2.90700 - 13.06440I$	0
$u = -1.127370 - 0.626934I$ $a = 0.854578 - 0.802560I$ $b = 0.035326 - 1.277960I$	$2.90700 + 13.06440I$	0
$u = 1.212730 + 0.480193I$ $a = -0.826730 + 1.008040I$ $b = 0.696510 + 0.513744I$	$4.26305 + 6.00567I$	0
$u = 1.212730 - 0.480193I$ $a = -0.826730 - 1.008040I$ $b = 0.696510 - 0.513744I$	$4.26305 - 6.00567I$	0
$u = -1.148850 + 0.634497I$ $a = -0.50496 - 1.33818I$ $b = 1.174070 - 0.173092I$	$2.58694 - 5.73432I$	0
$u = -1.148850 - 0.634497I$ $a = -0.50496 + 1.33818I$ $b = 1.174070 + 0.173092I$	$2.58694 + 5.73432I$	0
$u = -0.175956 + 0.664223I$ $a = -0.53812 + 1.75140I$ $b = -1.31971 + 0.54145I$	$5.77286 - 3.16618I$	$5.94206 + 3.29527I$
$u = -0.175956 - 0.664223I$ $a = -0.53812 - 1.75140I$ $b = -1.31971 - 0.54145I$	$5.77286 + 3.16618I$	$5.94206 - 3.29527I$
$u = -0.493879 + 0.472580I$ $a = -0.63891 - 1.83433I$ $b = 0.360525 - 1.196920I$	$-2.44983 + 1.54099I$	$1.35815 - 5.08517I$



Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.493879 - 0.472580I$ $a = -0.63891 + 1.83433I$ $b = 0.360525 + 1.196920I$	$-2.44983 - 1.54099I$	$1.35815 + 5.08517I$
$u = 0.664726 + 0.141815I$ $a = -0.39588 - 2.29330I$ $b = 0.1384260 + 0.0284114I$	$-0.78196 + 2.78750I$	$9.43682 - 6.77718I$
$u = 0.664726 - 0.141815I$ $a = -0.39588 + 2.29330I$ $b = 0.1384260 - 0.0284114I$	$-0.78196 - 2.78750I$	$9.43682 + 6.77718I$
$u = -1.190470 + 0.611840I$ $a = 0.58877 + 1.87555I$ $b = -1.37974 + 0.49688I$	$9.1314 - 13.1308I$	0
$u = -1.190470 - 0.611840I$ $a = 0.58877 - 1.87555I$ $b = -1.37974 - 0.49688I$	$9.1314 + 13.1308I$	0
$u = 1.158250 + 0.685906I$ $a = 0.251647 + 0.021577I$ $b = -0.254537 + 0.116977I$	$1.10518 + 7.69617I$	0
$u = 1.158250 - 0.685906I$ $a = 0.251647 - 0.021577I$ $b = -0.254537 - 0.116977I$	$1.10518 - 7.69617I$	0
$u = -1.204770 + 0.608589I$ $a = 0.466183 + 0.990085I$ $b = -1.083040 + 0.482008I$	$2.05221 - 3.73821I$	0
$u = -1.204770 - 0.608589I$ $a = 0.466183 - 0.990085I$ $b = -1.083040 - 0.482008I$	$2.05221 + 3.73821I$	0
$u = 1.344910 + 0.206006I$ $a = 0.681521 - 0.052152I$ $b = -1.351160 + 0.355856I$	$12.02940 - 3.69313I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.344910 - 0.206006I$ $a = 0.681521 + 0.052152I$ $b = -1.351160 - 0.355856I$	$12.02940 + 3.69313I$	0
$u = -0.618615 + 0.154062I$ $a = 3.07962 + 2.34354I$ $b = 1.035340 - 0.151371I$	$6.86850 + 1.92294I$	$7.01924 - 1.26116I$
$u = -0.618615 - 0.154062I$ $a = 3.07962 - 2.34354I$ $b = 1.035340 + 0.151371I$	$6.86850 - 1.92294I$	$7.01924 + 1.26116I$
$u = 1.209920 + 0.647265I$ $a = -0.58496 + 1.71551I$ $b = 1.41069 + 0.59610I$	$7.2814 + 19.5798I$	0
$u = 1.209920 - 0.647265I$ $a = -0.58496 - 1.71551I$ $b = 1.41069 - 0.59610I$	$7.2814 - 19.5798I$	0
$u = -1.072150 + 0.858021I$ $a = -0.259497 - 0.987287I$ $b = 1.038200 - 0.500709I$	$1.59114 - 3.42886I$	0
$u = -1.072150 - 0.858021I$ $a = -0.259497 + 0.987287I$ $b = 1.038200 + 0.500709I$	$1.59114 + 3.42886I$	0
$u = 0.999392 + 0.941873I$ $a = 0.170208 - 0.756920I$ $b = -0.777511 - 0.495042I$	$0.44844 + 7.68666I$	0
$u = 0.999392 - 0.941873I$ $a = 0.170208 + 0.756920I$ $b = -0.777511 + 0.495042I$	$0.44844 - 7.68666I$	0
$u = 0.412582 + 0.411865I$ $a = -0.46992 + 2.27122I$ $b = 1.48300 + 0.26877I$	$6.42856 - 2.14920I$	$5.88821 + 3.25514I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.412582 - 0.411865I$ $a = -0.46992 - 2.27122I$ $b = 1.48300 - 0.26877I$	$6.42856 + 2.14920I$	$5.88821 - 3.25514I$
$u = -1.42305 + 0.15920I$ $a = -0.565903 - 0.081802I$ $b = 1.283480 + 0.423406I$	$10.8172 + 9.5544I$	0
$u = -1.42305 - 0.15920I$ $a = -0.565903 + 0.081802I$ $b = 1.283480 - 0.423406I$	$10.8172 - 9.5544I$	0
$u = 1.34747 + 0.49188I$ $a = -0.703756 + 0.809388I$ $b = 1.008220 + 0.090448I$	$4.90929 + 4.95614I$	0
$u = 1.34747 - 0.49188I$ $a = -0.703756 - 0.809388I$ $b = 1.008220 - 0.090448I$	$4.90929 - 4.95614I$	0
$u = -1.35767 + 0.56506I$ $a = 0.627188 + 0.795642I$ $b = -1.168900 + 0.214784I$	$3.88655 - 9.53027I$	0
$u = -1.35767 - 0.56506I$ $a = 0.627188 - 0.795642I$ $b = -1.168900 - 0.214784I$	$3.88655 + 9.53027I$	0
$u = 0.021922 + 0.464940I$ $a = -0.0739811 + 0.0609871I$ $b = 0.376905 + 0.582632I$	$-1.62666 - 1.27118I$	$-1.93388 - 0.65553I$
$u = 0.021922 - 0.464940I$ $a = -0.0739811 - 0.0609871I$ $b = 0.376905 - 0.582632I$	$-1.62666 + 1.27118I$	$-1.93388 + 0.65553I$
$u = 0.176008 + 0.224005I$ $a = -4.32723 + 1.57990I$ $b = 1.312990 - 0.103475I$	$6.58871 + 2.03230I$	$7.98619 - 3.34032I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.176008 - 0.224005I$		
$a = -4.32723 - 1.57990I$	$6.58871 - 2.03230I$	$7.98619 + 3.34032I$
$b = 1.312990 + 0.103475I$		

**II.**

$$I_2^u = \langle -6.96 \times 10^6 u^{37} - 1.45 \times 10^7 u^{36} + \dots + 2.08 \times 10^6 b + 3.31 \times 10^7, 1.00 \times 10^8 u^{37} + 6.43 \times 10^7 u^{36} + \dots + 2.08 \times 10^6 a - 1.44 \times 10^8, u^{38} - 10u^{36} + \dots - 2u + 1 \rangle$$

**(i) Arc colorings**

$$\begin{aligned} a_4 &= \begin{pmatrix} 1 \\ 0 \end{pmatrix} \\ a_{11} &= \begin{pmatrix} 0 \\ u \end{pmatrix} \\ a_5 &= \begin{pmatrix} 1 \\ -u^2 \end{pmatrix} \\ a_9 &= \begin{pmatrix} -48.1008u^{37} - 30.8251u^{36} + \dots - 58.8735u + 69.2462 \\ 3.33836u^{37} + 6.96300u^{36} + \dots + 16.7005u - 15.8896 \end{pmatrix} \\ a_{12} &= \begin{pmatrix} u \\ -u^3 + u \end{pmatrix} \\ a_1 &= \begin{pmatrix} 78.4681u^{37} + 39.3080u^{36} + \dots + 35.5827u - 76.6318 \\ -11.4818u^{37} + 3.10017u^{36} + \dots + 0.310773u + 13.6024 \end{pmatrix} \\ a_8 &= \begin{pmatrix} -51.4392u^{37} - 37.7881u^{36} + \dots - 75.5740u + 85.1358 \\ 3.33836u^{37} + 6.96300u^{36} + \dots + 16.7005u - 15.8896 \end{pmatrix} \\ a_3 &= \begin{pmatrix} -38.9546u^{37} - 16.1203u^{36} + \dots - 31.5668u + 30.7708 \\ 32.1084u^{37} + 12.8650u^{36} + \dots + 25.0202u - 43.1165 \end{pmatrix} \\ a_2 &= \begin{pmatrix} -12.4976u^{37} + 12.5424u^{36} + \dots + 49.5414u - 5.88595 \\ 9.43326u^{37} - 5.48016u^{36} + \dots - 20.5475u - 14.4989 \end{pmatrix} \\ a_7 &= \begin{pmatrix} -15.4635u^{37} - 17.6621u^{36} + \dots - 32.1753u + 42.2745 \\ -26.0272u^{37} - 27.5754u^{36} + \dots - 48.9256u + 23.2119 \end{pmatrix} \\ a_{10} &= \begin{pmatrix} -u^3 \\ u^5 - u^3 + u \end{pmatrix} \\ a_6 &= \begin{pmatrix} -9.02470u^{37} - 5.25605u^{36} + \dots - 23.2549u + 40.5975 \\ -19.9853u^{37} - 29.8409u^{36} + \dots - 44.3911u + 10.7593 \end{pmatrix} \end{aligned}$$

**(ii) Obstruction class = 1**

$$\text{(iii) Cusp Shapes} = -\frac{443066941}{2084882}u^{37} - \frac{528025979}{2084882}u^{36} + \dots - \frac{347974495}{1042441}u + \frac{312998335}{2084882}$$

(iv)  $u$ -Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$u^{38} - 18u^{37} + \dots - 22u + 1$
$c_2$	$u^{38} + 2u^{37} + \dots + 2u + 1$
$c_3$	$u^{38} - 12u^{36} + \dots - 2u + 1$
$c_4$	$u^{38} - 10u^{36} + \dots - 2u + 1$
$c_5$	$u^{38} - 2u^{37} + \dots - 2u + 1$
$c_6$	$u^{38} - 7u^{37} + \dots - 7u + 1$
$c_7$	$u^{38} - u^{37} + \dots - u + 1$
$c_8$	$u^{38} - 12u^{36} + \dots + 2u + 1$
$c_9$	$u^{38} + 7u^{37} + \dots + 7u + 1$
$c_{10}$	$u^{38} + 20u^{37} + \dots + 14u + 1$
$c_{11}$	$u^{38} - 10u^{36} + \dots + 2u + 1$
$c_{12}$	$u^{38} - 3u^{37} + \dots - 7u + 1$





(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1$	$y^{38} + 22y^{37} + \cdots + 18y + 1$
$c_2, c_5$	$y^{38} - 18y^{37} + \cdots - 22y + 1$
$c_3, c_8$	$y^{38} - 24y^{37} + \cdots - 16y + 1$
$c_4, c_{11}$	$y^{38} - 20y^{37} + \cdots - 14y + 1$
$c_6, c_9$	$y^{38} + 19y^{37} + \cdots + 19y + 1$
$c_7$	$y^{38} - 9y^{37} + \cdots - 17y + 1$
$c_{10}$	$y^{38} + 12y^{37} + \cdots + 10y + 1$
$c_{12}$	$y^{38} - 5y^{37} + \cdots + 19y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.969625 + 0.291098I$ $a = 0.585516 + 0.702920I$ $b = 1.246660 + 0.247660I$	$7.98711 - 3.33140I$	$11.04134 + 4.17388I$
$u = -0.969625 - 0.291098I$ $a = 0.585516 - 0.702920I$ $b = 1.246660 - 0.247660I$	$7.98711 + 3.33140I$	$11.04134 - 4.17388I$
$u = -0.909102 + 0.283433I$ $a = 2.52203 + 2.18260I$ $b = -1.281690 + 0.185860I$	$7.75366 + 0.97119I$	$11.22990 + 0.77185I$
$u = -0.909102 - 0.283433I$ $a = 2.52203 - 2.18260I$ $b = -1.281690 - 0.185860I$	$7.75366 - 0.97119I$	$11.22990 - 0.77185I$
$u = 0.965169 + 0.415284I$ $a = 1.41398 - 0.81072I$ $b = 0.019707 - 1.017520I$	$-0.764006 + 0.486262I$	$-1.52398 + 1.36642I$
$u = 0.965169 - 0.415284I$ $a = 1.41398 + 0.81072I$ $b = 0.019707 + 1.017520I$	$-0.764006 - 0.486262I$	$-1.52398 - 1.36642I$
$u = -0.717170 + 0.569540I$ $a = -0.379433 - 1.043820I$ $b = -0.035636 - 1.020860I$	$-2.52710 + 0.48218I$	$-0.737542 + 1.120850I$
$u = -0.717170 - 0.569540I$ $a = -0.379433 + 1.043820I$ $b = -0.035636 + 1.020860I$	$-2.52710 - 0.48218I$	$-0.737542 - 1.120850I$
$u = 1.035960 + 0.339022I$ $a = -2.23962 + 2.19472I$ $b = 1.072280 + 0.310836I$	$7.25600 + 6.07680I$	$8.73339 - 8.10413I$
$u = 1.035960 - 0.339022I$ $a = -2.23962 - 2.19472I$ $b = 1.072280 - 0.310836I$	$7.25600 - 6.07680I$	$8.73339 + 8.10413I$

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.980873 + 0.545549I$ $a = -0.923221 - 0.600509I$ $b = -0.004188 - 0.980185I$	$-1.64410 - 4.95385I$	$0. + 4.81570I$
$u = -0.980873 - 0.545549I$ $a = -0.923221 + 0.600509I$ $b = -0.004188 + 0.980185I$	$-1.64410 + 4.95385I$	$0. - 4.81570I$
$u = 0.831171 + 0.268269I$ $a = -1.82636 + 2.42242I$ $b = -0.998402 + 0.348706I$	$6.40421 - 3.57024I$	$6.95194 + 3.49908I$
$u = 0.831171 - 0.268269I$ $a = -1.82636 - 2.42242I$ $b = -0.998402 - 0.348706I$	$6.40421 + 3.57024I$	$6.95194 - 3.49908I$
$u = -0.499890 + 1.014760I$ $a = -0.076153 - 0.180110I$ $b = -0.590547 - 0.173073I$	$-1.47254 - 0.41673I$	$-4.21513 + 0.I$
$u = -0.499890 - 1.014760I$ $a = -0.076153 + 0.180110I$ $b = -0.590547 + 0.173073I$	$-1.47254 + 0.41673I$	$-4.21513 + 0.I$
$u = -1.104790 + 0.312508I$ $a = -0.511874 - 0.540228I$ $b = 1.41499 + 0.08876I$	$7.01013 - 3.11838I$	$10.60055 + 3.92869I$
$u = -1.104790 - 0.312508I$ $a = -0.511874 + 0.540228I$ $b = 1.41499 - 0.08876I$	$7.01013 + 3.11838I$	$10.60055 - 3.92869I$
$u = 0.722724 + 0.337213I$ $a = 0.53159 - 1.97962I$ $b = -0.047100 - 0.927769I$	$-1.62680 + 2.79836I$	$-4.51266 - 12.65381I$
$u = 0.722724 - 0.337213I$ $a = 0.53159 + 1.97962I$ $b = -0.047100 + 0.927769I$	$-1.62680 - 2.79836I$	$-4.51266 + 12.65381I$

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.118320 + 0.481398I$		
$a = 1.108200 - 0.694887I$	$4.59587 + 7.86572I$	$0. - 7.16447I$
$b = -1.300970 - 0.104228I$		
$u = 1.118320 - 0.481398I$		
$a = 1.108200 + 0.694887I$	$4.59587 - 7.86572I$	$0. + 7.16447I$
$b = -1.300970 + 0.104228I$		
$u = -0.747518 + 0.188283I$		
$a = 0.904238 + 0.947692I$	$5.50079 + 0.97987I$	$1.75374 + 0.22526I$
$b = -1.54470 - 0.04905I$		
$u = -0.747518 - 0.188283I$		
$a = 0.904238 - 0.947692I$	$5.50079 - 0.97987I$	$1.75374 - 0.22526I$
$b = -1.54470 + 0.04905I$		
$u = 0.031944 + 0.748782I$		
$a = -0.300436 + 0.268385I$	$-1.46400 + 2.53482I$	$-0.72301 - 4.85420I$
$b = 0.493431 - 0.222525I$		
$u = 0.031944 - 0.748782I$		
$a = -0.300436 - 0.268385I$	$-1.46400 - 2.53482I$	$-0.72301 + 4.85420I$
$b = 0.493431 + 0.222525I$		
$u = 0.670883 + 0.322552I$		
$a = -1.41201 - 0.14583I$	$2.77937 - 4.46570I$	$-0.13807 + 4.09528I$
$b = 1.338280 - 0.260057I$		
$u = 0.670883 - 0.322552I$		
$a = -1.41201 + 0.14583I$	$2.77937 + 4.46570I$	$-0.13807 - 4.09528I$
$b = 1.338280 + 0.260057I$		
$u = -0.967882 + 0.845121I$		
$a = 0.132208 - 0.985298I$	$-0.22400 - 6.23705I$	$0$
$b = 0.946922 - 0.396098I$		
$u = -0.967882 - 0.845121I$		
$a = 0.132208 + 0.985298I$	$-0.22400 + 6.23705I$	$0$
$b = 0.946922 + 0.396098I$		

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.087000 + 0.797543I$ $a = 0.238397 - 1.005030I$ $b = -1.095670 - 0.419101I$	$0.72404 + 3.45537I$	0
$u = 1.087000 - 0.797543I$ $a = 0.238397 + 1.005030I$ $b = -1.095670 + 0.419101I$	$0.72404 - 3.45537I$	0
$u = -1.198180 + 0.684453I$ $a = -0.048070 + 0.824017I$ $b = -0.717388 + 0.175683I$	$1.72500 - 8.21836I$	0
$u = -1.198180 - 0.684453I$ $a = -0.048070 - 0.824017I$ $b = -0.717388 - 0.175683I$	$1.72500 + 8.21836I$	0
$u = 1.317020 + 0.482479I$ $a = -0.701987 + 0.671161I$ $b = 0.723019 + 0.337464I$	$3.84086 + 5.19868I$	0
$u = 1.317020 - 0.482479I$ $a = -0.701987 - 0.671161I$ $b = 0.723019 - 0.337464I$	$3.84086 - 5.19868I$	0
$u = 0.314855 + 0.456776I$ $a = -1.016990 - 0.675621I$ $b = 0.360995 - 0.466501I$	$-1.44128 + 2.49020I$	$-1.48894 - 3.44933I$
$u = 0.314855 - 0.456776I$ $a = -1.016990 + 0.675621I$ $b = 0.360995 + 0.466501I$	$-1.44128 - 2.49020I$	$-1.48894 + 3.44933I$

### III. u-Polynomials

Crossings	u-Polynomials at each crossing
$c_1$	$(u^{38} - 18u^{37} + \dots - 22u + 1) \cdot (u^{151} + 59u^{150} + \dots - 241657u + 120409)$
$c_2$	$(u^{38} + 2u^{37} + \dots + 2u + 1)(u^{151} + 3u^{150} + \dots + 1193u - 347)$
$c_3$	$(u^{38} - 12u^{36} + \dots - 2u + 1)(u^{151} + u^{150} + \dots - 3953u - 319)$
$c_4$	$(u^{38} - 10u^{36} + \dots - 2u + 1)(u^{151} + u^{150} + \dots - 347u - 59)$
$c_5$	$(u^{38} - 2u^{37} + \dots - 2u + 1)(u^{151} + 3u^{150} + \dots + 1193u - 347)$
$c_6$	$(u^{38} - 7u^{37} + \dots - 7u + 1)(u^{151} - 6u^{150} + \dots + 220218u - 26057)$
$c_7$	$(u^{38} - u^{37} + \dots - u + 1)(u^{151} - 2u^{150} + \dots - 1.53341 \times 10^7 u + 8.20365 \times 10^7)$
$c_8$	$(u^{38} - 12u^{36} + \dots + 2u + 1)(u^{151} + u^{150} + \dots - 3953u - 319)$
$c_9$	$(u^{38} + 7u^{37} + \dots + 7u + 1)(u^{151} - 6u^{150} + \dots + 220218u - 26057)$
$c_{10}$	$(u^{38} + 20u^{37} + \dots + 14u + 1)(u^{151} - 73u^{150} + \dots + 62943u - 3481)$
$c_{11}$	$(u^{38} - 10u^{36} + \dots + 2u + 1)(u^{151} + u^{150} + \dots - 347u - 59)$
$c_{12}$	$(u^{38} - 3u^{37} + \dots - 7u + 1)(u^{151} + 10u^{150} + \dots - 194288u - 9629)$

#### IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
$c_1$	$(y^{38} + 22y^{37} + \dots + 18y + 1)$ $\cdot (y^{151} + 85y^{150} + \dots + 4342105053167y - 14498327281)$
$c_2, c_5$	$(y^{38} - 18y^{37} + \dots - 22y + 1)$ $\cdot (y^{151} - 59y^{150} + \dots - 241657y - 120409)$
$c_3, c_8$	$(y^{38} - 24y^{37} + \dots - 16y + 1)$ $\cdot (y^{151} - 101y^{150} + \dots + 16937937y - 101761)$
$c_4, c_{11}$	$(y^{38} - 20y^{37} + \dots - 14y + 1)(y^{151} - 73y^{150} + \dots + 62943y - 3481)$
$c_6, c_9$	$(y^{38} + 19y^{37} + \dots + 19y + 1)$ $\cdot (y^{151} + 94y^{150} + \dots - 24366231410y - 678967249)$
$c_7$	$(y^{38} - 9y^{37} + \dots - 17y + 1)$ $\cdot (y^{151} - 58y^{150} + \dots + 432393903636177302y - 6729983558571529)$
$c_{10}$	$(y^{38} + 12y^{37} + \dots + 10y + 1)$ $\cdot (y^{151} + 27y^{150} + \dots - 2959833961y - 12117361)$
$c_{12}$	$(y^{38} - 5y^{37} + \dots + 19y + 1)$ $\cdot (y^{151} - 34y^{150} + \dots + 5136926742y - 92717641)$