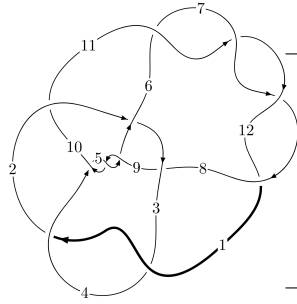
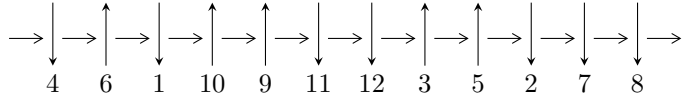


12a₁₀₁₇ (K12a₁₀₁₇)



A knot diagram¹

Linearized knot diagram



Solving Sequence

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

Ideals for irreducible components² of X_{par}

$$I_1^u = \langle -2.60368 \times 10^{56} u^{58} + 4.19299 \times 10^{56} u^{57} + \dots + 1.57047 \times 10^{57} b + 1.44031 \times 10^{57}, \\ -1.44721 \times 10^{58} u^{58} + 2.32648 \times 10^{58} u^{57} + \dots + 1.72751 \times 10^{58} a - 2.18987 \times 10^{58}, u^{59} - 2u^{58} + \dots + 2u \rangle$$

$$I_2^u = \langle b + 1, -6u^4 - u^3 - 4u^2 + 11a - 6u - 2, u^5 - u^4 + 2u^3 - u^2 + u - 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 64 representations.

¹The 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>).

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

I.

$$I_1^u = \langle -2.60 \times 10^{56} u^{58} + 4.19 \times 10^{56} u^{57} + \dots + 1.57 \times 10^{57} b + 1.44 \times 10^{57}, -1.45 \times 10^{58} u^{58} + 2.33 \times 10^{58} u^{57} + \dots + 1.73 \times 10^{58} a - 2.19 \times 10^{58}, u^{59} - 2u^{58} + \dots + 2u - 1 \rangle$$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.837744u^{58} - 1.34673u^{57} + \dots + 9.36260u + 1.26764 \\ 0.165790u^{58} - 0.266990u^{57} + \dots - 0.250227u - 0.917125 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} -1.37006u^{58} + 2.70687u^{57} + \dots - 2.20419u - 7.53648 \\ 0.323082u^{58} - 0.735433u^{57} + \dots + 0.636173u + 0.712700 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1.00353u^{58} - 1.61372u^{57} + \dots + 9.11237u + 0.350517 \\ 0.165790u^{58} - 0.266990u^{57} + \dots - 0.250227u - 0.917125 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.813781u^{58} - 1.27902u^{57} + \dots + 9.23409u + 1.12697 \\ 0.101081u^{58} - 0.176699u^{57} + \dots - 0.139831u - 0.934603 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1.22085u^{58} - 1.69130u^{57} + \dots + 1.86963u + 5.41585 \\ -0.341950u^{58} + 0.451068u^{57} + \dots + 0.714485u - 0.813658 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -1.10578u^{58} + 1.81302u^{57} + \dots - 8.88249u - 6.38263 \\ 0.522951u^{58} - 1.01970u^{57} + \dots - 0.297256u + 0.859688 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.815570u^{58} + 1.08491u^{57} + \dots + 7.19499u - 5.10912 \\ 0.485858u^{58} - 0.909085u^{57} + \dots - 1.03362u + 0.314960 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes = $2.95860u^{58} - 4.62866u^{57} + \dots - 1.56836u + 1.88588$

(iv) u-Polynomials at the component

| Crossings | u-Polynomials at each crossing |
|--------------------------------|---|
| c_1, c_3 | $u^{59} - 6u^{58} + \dots - 222u - 121$ |
| c_2 | $u^{59} - 5u^{58} + \dots - 9856u - 3872$ |
| c_4, c_5, c_9 | $u^{59} - 2u^{58} + \dots + 2u - 1$ |
| c_6, c_7, c_{11} c_{12} | $u^{59} - 2u^{58} + \dots - 2u - 1$ |
| c_8 | $11(11u^{59} + 7u^{58} + \dots - 474357u - 87053)$ |
| c_{10} | $11(11u^{59} + 48u^{58} + \dots - 267960u + 42881)$ |

(v) Riley Polynomials at the component

| Crossings | Riley Polynomials at each crossing |
|--------------------------------|---|
| c_1, c_3 | $y^{59} - 56y^{58} + \dots + 212150y - 14641$ |
| c_2 | $y^{59} + 33y^{58} + \dots - 70687232y - 14992384$ |
| c_4, c_5, c_9 | $y^{59} + 60y^{58} + \dots - 8y - 1$ |
| c_6, c_7, c_{11} c_{12} | $y^{59} - 72y^{58} + \dots - 8y - 1$ |
| c_8 | $121(121y^{59} + 4725y^{58} + \dots + 3.57051 \times 10^{10}y - 7.57822 \times 10^9)$ |
| c_{10} | $121(121y^{59} - 6660y^{58} + \dots + 8.46566 \times 10^{10}y - 1.83878 \times 10^9)$ |

(vi) Complex Volumes and Cusp Shapes

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|--|---------------------------------------|------------|
| $u = 0.796037 + 0.604484I$ $a = -0.74747 + 1.39314I$ $b = 1.49990 - 0.41719I$ | $-15.3122 + 10.3381I$ | 0 |
| $u = 0.796037 - 0.604484I$ $a = -0.74747 - 1.39314I$ $b = 1.49990 + 0.41719I$ | $-15.3122 - 10.3381I$ | 0 |
| $u = 0.198490 + 0.977565I$ $a = 0.562353 + 0.184287I$ $b = 0.471286 - 0.024219I$ | $-0.98563 + 1.68469I$ | 0 |
| $u = 0.198490 - 0.977565I$ $a = 0.562353 - 0.184287I$ $b = 0.471286 + 0.024219I$ | $-0.98563 - 1.68469I$ | 0 |
| $u = 0.858738 + 0.528700I$ $a = -1.152010 + 0.399429I$ $b = 1.45085 + 0.23811I$ | $-15.0363 - 4.8637I$ | 0 |
| $u = 0.858738 - 0.528700I$ $a = -1.152010 - 0.399429I$ $b = 1.45085 - 0.23811I$ | $-15.0363 + 4.8637I$ | 0 |
| $u = -0.817032 + 0.626568I$ $a = -0.648949 - 1.133500I$ $b = 1.38602 + 0.29741I$ | $-6.17225 - 7.56398I$ | 0 |
| $u = -0.817032 - 0.626568I$ $a = -0.648949 + 1.133500I$ $b = 1.38602 - 0.29741I$ | $-6.17225 + 7.56398I$ | 0 |
| $u = -0.893731 + 0.562783I$ $a = -0.876424 - 0.537932I$ $b = 1.347250 - 0.074003I$ | $-5.89406 + 1.87040I$ | 0 |
| $u = -0.893731 - 0.562783I$ $a = -0.876424 + 0.537932I$ $b = 1.347250 + 0.074003I$ | $-5.89406 - 1.87040I$ | 0 |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|---|---------------------------------------|------------------------|
| $u = 0.874153 + 0.628437I$ $a = -0.661838 + 0.795197I$ $b = 1.311200 - 0.117019I$ | $-3.14430 + 2.95119I$ | 0 |
| $u = 0.874153 - 0.628437I$ $a = -0.661838 - 0.795197I$ $b = 1.311200 + 0.117019I$ | $-3.14430 - 2.95119I$ | 0 |
| $u = -0.773705$ $a = -0.220081$ $b = 0.601717$ | -3.27963 | 1.19980 |
| $u = -0.396789 + 1.233380I$ $a = 0.219506 - 0.235740I$ $b = 0.709981 - 0.143756I$ | $-6.97611 - 4.18850I$ | 0 |
| $u = -0.396789 - 1.233380I$ $a = 0.219506 + 0.235740I$ $b = 0.709981 + 0.143756I$ | $-6.97611 + 4.18850I$ | 0 |
| $u = 0.484963 + 0.479670I$ $a = 0.08284 - 1.77415I$ $b = -0.303027 + 1.146960I$ | $-9.50379 + 4.88030I$ | $-7.71303 - 6.76491I$ |
| $u = 0.484963 - 0.479670I$ $a = 0.08284 + 1.77415I$ $b = -0.303027 - 1.146960I$ | $-9.50379 - 4.88030I$ | $-7.71303 + 6.76491I$ |
| $u = -0.183341 + 0.604919I$ $a = 1.00666 + 1.24021I$ $b = -1.51219 - 0.51372I$ | $-13.31950 - 1.94537I$ | $-13.47697 + 3.50593I$ |
| $u = -0.183341 - 0.604919I$ $a = 1.00666 - 1.24021I$ $b = -1.51219 + 0.51372I$ | $-13.31950 + 1.94537I$ | $-13.47697 - 3.50593I$ |
| $u = -0.474884 + 0.413829I$ $a = 0.19300 + 1.46597I$ $b = -0.208163 - 0.850495I$ | $-1.11164 - 3.54239I$ | $-5.29217 + 9.29513I$ |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|---|---------------------------------------|-----------------------|
| $u = -0.474884 - 0.413829I$ $a = 0.19300 - 1.46597I$ $b = -0.208163 + 0.850495I$ | $-1.11164 + 3.54239I$ | $-5.29217 - 9.29513I$ |
| $u = 0.06846 + 1.41970I$ $a = 1.51433 - 1.48737I$ $b = -0.588804 - 0.059904I$ | $-14.7804 - 0.1036I$ | 0 |
| $u = 0.06846 - 1.41970I$ $a = 1.51433 + 1.48737I$ $b = -0.588804 + 0.059904I$ | $-14.7804 + 0.1036I$ | 0 |
| $u = -0.08071 + 1.43356I$ $a = 0.457428 + 1.119880I$ $b = -0.482493 - 0.333450I$ | $-6.79984 - 0.65977I$ | 0 |
| $u = -0.08071 - 1.43356I$ $a = 0.457428 - 1.119880I$ $b = -0.482493 + 0.333450I$ | $-6.79984 + 0.65977I$ | 0 |
| $u = 0.433200 + 0.354869I$ $a = 2.49189 + 0.41018I$ $b = -0.334250 - 0.608931I$ | $-9.24314 - 1.69409I$ | $-6.45770 - 2.18401I$ |
| $u = 0.433200 - 0.354869I$ $a = 2.49189 - 0.41018I$ $b = -0.334250 + 0.608931I$ | $-9.24314 + 1.69409I$ | $-6.45770 + 2.18401I$ |
| $u = 0.481378 + 0.284287I$ $a = 0.331714 - 0.880870I$ $b = 0.012838 + 0.449350I$ | $0.847712 + 0.957954I$ | $3.55490 - 3.49861I$ |
| $u = 0.481378 - 0.284287I$ $a = 0.331714 + 0.880870I$ $b = 0.012838 - 0.449350I$ | $0.847712 - 0.957954I$ | $3.55490 + 3.49861I$ |
| $u = 0.167534 + 0.526581I$ $a = 0.549164 - 1.250740I$ $b = -1.304810 + 0.390671I$ | $-4.53243 + 1.53708I$ | $-14.0615 - 4.6733I$ |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|---|---------------------------------------|-----------------------|
| $u = 0.167534 - 0.526581I$ $a = 0.549164 + 1.250740I$ $b = -1.304810 - 0.390671I$ | $-4.53243 - 1.53708I$ | $-14.0615 + 4.6733I$ |
| $u = 0.12471 + 1.45410I$ $a = 0.004794 - 0.718738I$ $b = -0.277273 + 0.839860I$ | $-4.85539 + 3.02727I$ | 0 |
| $u = 0.12471 - 1.45410I$ $a = 0.004794 + 0.718738I$ $b = -0.277273 - 0.839860I$ | $-4.85539 - 3.02727I$ | 0 |
| $u = -0.02219 + 1.47985I$ $a = -1.184660 + 0.716156I$ $b = -1.270660 - 0.208426I$ | $-7.84581 - 1.05414I$ | 0 |
| $u = -0.02219 - 1.47985I$ $a = -1.184660 - 0.716156I$ $b = -1.270660 + 0.208426I$ | $-7.84581 + 1.05414I$ | 0 |
| $u = -0.13458 + 1.48905I$ $a = -0.212419 + 0.736437I$ $b = -0.364158 - 1.264080I$ | $-7.38067 - 5.69306I$ | 0 |
| $u = -0.13458 - 1.48905I$ $a = -0.212419 - 0.736437I$ $b = -0.364158 + 1.264080I$ | $-7.38067 + 5.69306I$ | 0 |
| $u = 0.13963 + 1.50988I$ $a = -0.312693 - 0.771821I$ $b = -0.40912 + 1.57743I$ | $-16.0816 + 7.1054I$ | 0 |
| $u = 0.13963 - 1.50988I$ $a = -0.312693 + 0.771821I$ $b = -0.40912 - 1.57743I$ | $-16.0816 - 7.1054I$ | 0 |
| $u = -0.324223 + 0.354209I$ $a = 1.72152 + 0.17031I$ $b = -0.192221 + 0.236728I$ | $-1.22883 + 0.71007I$ | $-5.89409 - 0.17363I$ |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|--|---------------------------------------|-----------------------|
| $u = -0.324223 - 0.354209I$ $a = 1.72152 - 0.17031I$ $b = -0.192221 - 0.236728I$ | $-1.22883 - 0.71007I$ | $-5.89409 + 0.17363I$ |
| $u = 0.04032 + 1.51980I$ $a = -0.376465 - 0.573934I$ $b = -1.66993 + 0.60898I$ | $-11.34980 + 2.24363I$ | 0 |
| $u = 0.04032 - 1.51980I$ $a = -0.376465 + 0.573934I$ $b = -1.66993 - 0.60898I$ | $-11.34980 - 2.24363I$ | 0 |
| $u = -0.04376 + 1.53939I$ $a = -0.162577 + 0.558268I$ $b = -1.96174 - 0.79822I$ | $19.0042 - 2.7199I$ | 0 |
| $u = -0.04376 - 1.53939I$ $a = -0.162577 - 0.558268I$ $b = -1.96174 + 0.79822I$ | $19.0042 + 2.7199I$ | 0 |
| $u = -0.413308$ $a = 6.18719$ $b = -1.24773$ | -11.3722 | 2.89400 |
| $u = 0.26816 + 1.57009I$ $a = 0.353918 + 1.205710I$ $b = 1.60951 - 0.53863I$ | $17.0282 + 14.2654I$ | 0 |
| $u = 0.26816 - 1.57009I$ $a = 0.353918 - 1.205710I$ $b = 1.60951 + 0.53863I$ | $17.0282 - 14.2654I$ | 0 |
| $u = -0.26921 + 1.57903I$ $a = 0.349462 - 1.077470I$ $b = 1.52595 + 0.44331I$ | $-13.4198 - 11.5636I$ | 0 |
| $u = -0.26921 - 1.57903I$ $a = 0.349462 + 1.077470I$ $b = 1.52595 - 0.44331I$ | $-13.4198 + 11.5636I$ | 0 |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|---|---------------------------------------|-----------------------|
| $u = 0.31035 + 1.57601I$ $a = 0.005917 + 0.764911I$ $b = 1.51814 + 0.02689I$ | $17.5634 - 0.5001I$ | 0 |
| $u = 0.31035 - 1.57601I$ $a = 0.005917 - 0.764911I$ $b = 1.51814 - 0.02689I$ | $17.5634 + 0.5001I$ | 0 |
| $u = 0.27658 + 1.59112I$ $a = 0.306850 + 0.928705I$ $b = 1.45225 - 0.31276I$ | $-10.47530 + 7.16280I$ | 0 |
| $u = 0.27658 - 1.59112I$ $a = 0.306850 - 0.928705I$ $b = 1.45225 + 0.31276I$ | $-10.47530 - 7.16280I$ | 0 |
| $u = -0.29657 + 1.59268I$ $a = 0.174916 - 0.817280I$ $b = 1.45444 + 0.14492I$ | $-13.01790 - 2.55081I$ | 0 |
| $u = -0.29657 - 1.59268I$ $a = 0.174916 + 0.817280I$ $b = 1.45444 - 0.14492I$ | $-13.01790 + 2.55081I$ | 0 |
| $u = -0.149750 + 0.332749I$ $a = -0.60011 + 2.68313I$ $b = -1.005990 - 0.128622I$ | $-1.78637 - 0.56805I$ | $-5.68333 - 3.31211I$ |
| $u = -0.149750 - 0.332749I$ $a = -0.60011 - 2.68313I$ $b = -1.005990 + 0.128622I$ | $-1.78637 + 0.56805I$ | $-5.68333 + 3.31211I$ |
| $u = 0.315139$ $a = 7.79706$ $b = -1.08358$ | -2.97694 | 19.5050 |

$$\text{II. } I_2^u = \langle b + 1, -6u^4 - u^3 - 4u^2 + 11a - 6u - 2, u^5 - u^4 + 2u^3 - u^2 + u - 1 \rangle$$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.545455u^4 + 0.0909091u^3 + \dots + 0.545455u + 0.181818 \\ -1 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} -0.280992u^4 - 0.0165289u^3 + \dots + 0.0826446u - 0.487603 \\ 0.636364u^4 - 0.727273u^3 + \dots + 0.636364u + 0.545455 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.545455u^4 + 0.0909091u^3 + \dots + 0.545455u - 0.818182 \\ -1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.545455u^4 + 0.0909091u^3 + \dots + 0.545455u + 0.181818 \\ -1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.157025u^4 + 0.0495868u^3 + \dots - 0.247934u + 0.462810 \\ 0.0909091u^4 + 0.181818u^3 + \dots + 0.0909091u + 0.363636 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.0991736u^4 - 0.347107u^3 + \dots - 1.26446u - 0.239669 \\ 0.363636u^4 + 0.727273u^3 + \dots + 0.363636u + 0.454545 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.752066u^4 + 0.132231u^3 + \dots + 0.338843u - 1.09917 \\ 0.909091u^4 - 1.18182u^3 + \dots - 0.0909091u + 0.636364 \end{pmatrix}$$

(ii) Obstruction class = 1

$$\text{(iii) Cusp Shapes} = -\frac{4}{121}u^4 + \frac{619}{121}u^3 - \frac{527}{121}u^2 + \frac{414}{121}u - \frac{1523}{121}$$

(iv) u-Polynomials at the component

| Crossings | u-Polynomials at each crossing |
|------------------|-------------------------------------|
| c_1 | $(u - 1)^5$ |
| c_2 | u^5 |
| c_3 | $(u + 1)^5$ |
| c_4, c_5 | $u^5 - u^4 + 2u^3 - u^2 + u - 1$ |
| c_6, c_7 | $u^5 + u^4 - 2u^3 - u^2 + u - 1$ |
| c_8 | $11(11u^5 - 2u^4 + 6u^3 + u^2 + 1)$ |
| c_9 | $u^5 + u^4 + 2u^3 + u^2 + u + 1$ |
| c_{10} | $11(11u^5 + 13u^4 - 3u^2 + u + 1)$ |
| c_{11}, c_{12} | $u^5 - u^4 - 2u^3 + u^2 + u + 1$ |

(v) Riley Polynomials at the component

| Crossings | Riley Polynomials at each crossing |
|--------------------------------|--|
| c_1, c_3 | $(y - 1)^5$ |
| c_2 | y^5 |
| c_4, c_5, c_9 | $y^5 + 3y^4 + 4y^3 + y^2 - y - 1$ |
| c_6, c_7, c_{11} c_{12} | $y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1$ |
| c_8 | $121(121y^5 + 128y^4 + 40y^3 + 3y^2 - 2y - 1)$ |
| c_{10} | $121(121y^5 - 169y^4 + 100y^3 - 35y^2 + 7y - 1)$ |

(vi) Complex Volumes and Cusp Shapes

| Solutions to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|--|---------------------------------------|-----------------------|
| $u = -0.339110 + 0.822375I$ $a = -0.146090 + 0.562510I$ $b = -1.00000$ | $-1.97403 - 1.53058I$ | $-7.98225 + 3.82841I$ |
| $u = -0.339110 - 0.822375I$ $a = -0.146090 - 0.562510I$ $b = -1.00000$ | $-1.97403 + 1.53058I$ | $-7.98225 - 3.82841I$ |
| $u = 0.766826$ $a = 1.04351$ $b = -1.00000$ | -4.04602 | -10.2290 |
| $u = 0.455697 + 1.200150I$ $a = -0.012026 - 0.507727I$ $b = -1.00000$ | $-7.51750 + 4.40083I$ | $-15.2587 - 5.5869I$ |
| $u = 0.455697 - 1.200150I$ $a = -0.012026 + 0.507727I$ $b = -1.00000$ | $-7.51750 - 4.40083I$ | $-15.2587 + 5.5869I$ |

III. u-Polynomials

| Crossings | u-Polynomials at each crossing |
|------------------|--|
| c_1 | $((u-1)^5)(u^{59} - 6u^{58} + \dots - 222u - 121)$ |
| c_2 | $u^5(u^{59} - 5u^{58} + \dots - 9856u - 3872)$ |
| c_3 | $((u+1)^5)(u^{59} - 6u^{58} + \dots - 222u - 121)$ |
| c_4, c_5 | $(u^5 - u^4 + 2u^3 - u^2 + u - 1)(u^{59} - 2u^{58} + \dots + 2u - 1)$ |
| c_6, c_7 | $(u^5 + u^4 - 2u^3 - u^2 + u - 1)(u^{59} - 2u^{58} + \dots - 2u - 1)$ |
| c_8 | $121(11u^5 - 2u^4 + 6u^3 + u^2 + 1)$ $\cdot (11u^{59} + 7u^{58} + \dots - 474357u - 87053)$ |
| c_9 | $(u^5 + u^4 + 2u^3 + u^2 + u + 1)(u^{59} - 2u^{58} + \dots + 2u - 1)$ |
| c_{10} | $121(11u^5 + 13u^4 - 3u^2 + u + 1)$ $\cdot (11u^{59} + 48u^{58} + \dots - 267960u + 42881)$ |
| c_{11}, c_{12} | $(u^5 - u^4 - 2u^3 + u^2 + u + 1)(u^{59} - 2u^{58} + \dots - 2u - 1)$ |

IV. Riley Polynomials

| Crossings | Riley Polynomials at each crossing |
|--------------------------------|--|
| c_1, c_3 | $((y - 1)^5)(y^{59} - 56y^{58} + \dots + 212150y - 14641)$ |
| c_2 | $y^5(y^{59} + 33y^{58} + \dots - 7.06872 \times 10^7 y - 1.49924 \times 10^7)$ |
| c_4, c_5, c_9 | $(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)(y^{59} + 60y^{58} + \dots - 8y - 1)$ |
| c_6, c_7, c_{11} c_{12} | $(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)(y^{59} - 72y^{58} + \dots - 8y - 1)$ |
| c_8 | $14641(121y^5 + 128y^4 + 40y^3 + 3y^2 - 2y - 1)$ $\cdot (121y^{59} + 4725y^{58} + \dots + 35705105211y - 7578224809)$ |
| c_{10} | $14641(121y^5 - 169y^4 + 100y^3 - 35y^2 + 7y - 1)$ $\cdot (121y^{59} - 6660y^{58} + \dots + 84656570160y - 1838780161)$ |