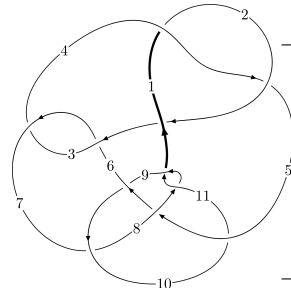
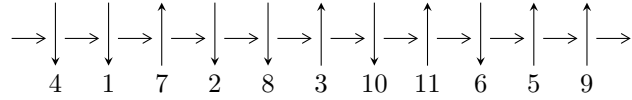


11a₂₆ (K11a₂₆)



A knot diagram¹

Linearized knot diagram



Solving Sequence

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

Ideals for irreducible components² of X_{par}

$$I_1^u = \langle 5.01473 \times 10^{70} u^{83} + 3.35718 \times 10^{71} u^{82} + \dots + 4.78692 \times 10^{70} b + 3.84233 \times 10^{70}, \\ 3.48846 \times 10^{71} u^{83} + 2.03127 \times 10^{72} u^{82} + \dots + 4.78692 \times 10^{70} a + 1.50947 \times 10^{70}, u^{84} + 7u^{83} + \dots + 3u + 1 \rangle \\ I_2^u = \langle b - a + 1, a^6 - 5a^5 + 9a^4 - 8a^3 + 5a^2 - 2a + 1, u - 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 90 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.

$$I_1^u = \langle 5.01 \times 10^{70} u^{83} + 3.36 \times 10^{71} u^{82} + \dots + 4.79 \times 10^{70} b + 3.84 \times 10^{70}, 3.49 \times 10^{71} u^{83} + 2.03 \times 10^{72} u^{82} + \dots + 4.79 \times 10^{70} a + 1.51 \times 10^{70}, u^{84} + 7u^{83} + \dots + 3u + 1 \rangle$$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -7.28749u^{83} - 42.4337u^{82} + \dots + 68.1358u - 0.315332 \\ -1.04759u^{83} - 7.01323u^{82} + \dots - 4.76652u - 0.802671 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -5.90618u^{83} - 34.5694u^{82} + \dots + 66.7237u + 3.09487 \\ 1.65285u^{83} + 10.0206u^{82} + \dots - 0.430299u + 2.21652 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -3.26390u^{83} - 19.2317u^{82} + \dots + 6.89193u - 6.39737 \\ -2.92755u^{83} - 18.7843u^{82} + \dots - 3.42332u - 3.43162 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -2.95981u^{83} - 19.0451u^{82} + \dots - 27.6514u - 5.08421 \\ 4.22596u^{83} + 24.4825u^{82} + \dots + 9.63893u + 3.12800 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.136122u^{83} - 2.27013u^{82} + \dots + 75.7067u + 5.71691 \\ 9.00790u^{83} + 57.2317u^{82} + \dots + 14.5350u + 9.59135 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.297603u^{83} + 0.0843443u^{82} + \dots + 17.4398u + 1.52108 \\ 0.435133u^{83} + 4.60968u^{82} + \dots - 0.0556085u + 0.732737 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes = $-34.4571u^{83} - 206.279u^{82} + \dots - 74.1253u - 20.5385$

(iv) u-Polynomials at the component

| Crossings | u-Polynomials at each crossing |
|---------------|------------------------------------------|
| c_1, c_4 | $u^{84} - 7u^{83} + \dots - 3u + 1$ |
| c_2 | $u^{84} + 41u^{83} + \dots - 157u + 1$ |
| c_3, c_6 | $u^{84} - u^{83} + \dots - 320u + 64$ |
| c_5 | $u^{84} - 6u^{83} + \dots - 2u + 1$ |
| c_7 | $u^{84} - 14u^{83} + \dots - 2u + 1$ |
| c_8, c_{11} | $u^{84} + 2u^{83} + \dots + 14u + 1$ |
| c_9 | $u^{84} + 2u^{83} + \dots - 418u + 367$ |
| c_{10} | $u^{84} + 6u^{83} + \dots - 1166u - 101$ |

(v) Riley Polynomials at the component

| Crossings | Riley Polynomials at each crossing |
|---------------|-------------------------------------------------|
| c_1, c_4 | $y^{84} - 41y^{83} + \dots + 157y + 1$ |
| c_2 | $y^{84} + 11y^{83} + \dots - 14895y + 1$ |
| c_3, c_6 | $y^{84} - 39y^{83} + \dots - 61440y + 4096$ |
| c_5 | $y^{84} + 14y^{83} + \dots + 6y + 1$ |
| c_7 | $y^{84} - 6y^{83} + \dots - 14y + 1$ |
| c_8, c_{11} | $y^{84} - 54y^{83} + \dots - 14y + 1$ |
| c_9 | $y^{84} - 66y^{83} + \dots + 5678926y + 134689$ |
| c_{10} | $y^{84} - 82y^{83} + \dots - 878594y + 10201$ |

(vi) Complex Volumes and Cusp Shapes

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|-------------------------------------------------------------------------------------------|---------------------------------------|------------|
| $u = -0.332631 + 0.958315I$ $a = 1.67820 + 0.07513I$ $b = -1.37591 + 0.55145I$ | $5.73608 - 12.12140I$ | 0 |
| $u = -0.332631 - 0.958315I$ $a = 1.67820 - 0.07513I$ $b = -1.37591 - 0.55145I$ | $5.73608 + 12.12140I$ | 0 |
| $u = -0.951859 + 0.248441I$ $a = -0.218069 + 0.361485I$ $b = -1.120340 + 0.633983I$ | $-1.61526 - 4.99229I$ | 0 |
| $u = -0.951859 - 0.248441I$ $a = -0.218069 - 0.361485I$ $b = -1.120340 - 0.633983I$ | $-1.61526 + 4.99229I$ | 0 |
| $u = 0.967113 + 0.342930I$ $a = -3.13088 - 5.37988I$ $b = 0.997274 - 0.064037I$ | $-0.170119 - 1.192110I$ | 0 |
| $u = 0.967113 - 0.342930I$ $a = -3.13088 + 5.37988I$ $b = 0.997274 + 0.064037I$ | $-0.170119 + 1.192110I$ | 0 |
| $u = 0.928263 + 0.443032I$ $a = -2.21795 - 1.93233I$ $b = 1.27275 - 0.62263I$ | $1.46677 - 3.41872I$ | 0 |
| $u = 0.928263 - 0.443032I$ $a = -2.21795 + 1.93233I$ $b = 1.27275 + 0.62263I$ | $1.46677 + 3.41872I$ | 0 |
| $u = -0.653182 + 0.674145I$ $a = -0.419780 + 0.077857I$ $b = 0.453075 + 0.998389I$ | $3.23379 + 3.44018I$ | 0 |
| $u = -0.653182 - 0.674145I$ $a = -0.419780 - 0.077857I$ $b = 0.453075 - 0.998389I$ | $3.23379 - 3.44018I$ | 0 |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|------------------------------------------------------------------------------------------|---------------------------------------|------------|
| $u = 1.043360 + 0.207956I$ $a = 1.44638 + 2.71546I$ $b = 0.911327 + 0.012256I$ | $-0.506438 - 0.641182I$ | 0 |
| $u = 1.043360 - 0.207956I$ $a = 1.44638 - 2.71546I$ $b = 0.911327 - 0.012256I$ | $-0.506438 + 0.641182I$ | 0 |
| $u = -0.879247 + 0.308527I$ $a = 0.151761 + 0.454759I$ $b = -0.664606 + 0.732185I$ | $-3.09506 + 1.90596I$ | 0 |
| $u = -0.879247 - 0.308527I$ $a = 0.151761 - 0.454759I$ $b = -0.664606 - 0.732185I$ | $-3.09506 - 1.90596I$ | 0 |
| $u = -0.535364 + 0.758601I$ $a = -1.84796 + 0.45576I$ $b = 1.58214 + 0.40524I$ | $6.53306 + 0.44104I$ | 0 |
| $u = -0.535364 - 0.758601I$ $a = -1.84796 - 0.45576I$ $b = 1.58214 - 0.40524I$ | $6.53306 - 0.44104I$ | 0 |
| $u = -0.996208 + 0.396743I$ $a = 0.714153 - 0.928374I$ $b = -0.437239 - 1.006900I$ | $-3.77732 + 0.83071I$ | 0 |
| $u = -0.996208 - 0.396743I$ $a = 0.714153 + 0.928374I$ $b = -0.437239 + 1.006900I$ | $-3.77732 - 0.83071I$ | 0 |
| $u = -0.445418 + 0.802301I$ $a = -1.370510 + 0.178277I$ $b = 1.41107 - 0.70362I$ | $5.99281 - 3.52843I$ | 0 |
| $u = -0.445418 - 0.802301I$ $a = -1.370510 - 0.178277I$ $b = 1.41107 + 0.70362I$ | $5.99281 + 3.52843I$ | 0 |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|-----------------------------------------------------------------------------------------|---------------------------------------|------------|
| $u = -0.369678 + 1.018600I$ $a = 1.50883 + 0.01924I$ $b = -1.102510 + 0.205014I$ | $4.58405 - 3.81524I$ | 0 |
| $u = -0.369678 - 1.018600I$ $a = 1.50883 - 0.01924I$ $b = -1.102510 - 0.205014I$ | $4.58405 + 3.81524I$ | 0 |
| $u = -0.340933 + 0.839696I$ $a = 0.202650 + 0.452508I$ $b = 0.019790 - 1.184810I$ | $1.35757 - 6.09736I$ | 0 |
| $u = -0.340933 - 0.839696I$ $a = 0.202650 - 0.452508I$ $b = 0.019790 + 1.184810I$ | $1.35757 + 6.09736I$ | 0 |
| $u = 0.292041 + 0.834139I$ $a = 1.49488 - 0.31220I$ $b = -1.018820 + 0.211435I$ | $1.52052 - 3.66155I$ | 0 |
| $u = 0.292041 - 0.834139I$ $a = 1.49488 + 0.31220I$ $b = -1.018820 - 0.211435I$ | $1.52052 + 3.66155I$ | 0 |
| $u = -0.965351 + 0.572013I$ $a = 0.760441 + 0.115778I$ $b = 0.753131 - 0.965934I$ | $2.30506 + 1.39249I$ | 0 |
| $u = -0.965351 - 0.572013I$ $a = 0.760441 - 0.115778I$ $b = 0.753131 + 0.965934I$ | $2.30506 - 1.39249I$ | 0 |
| $u = 0.507684 + 0.708326I$ $a = 2.14880 + 0.41256I$ $b = -1.269980 - 0.456591I$ | $2.49717 + 6.15202I$ | 0 |
| $u = 0.507684 - 0.708326I$ $a = 2.14880 - 0.41256I$ $b = -1.269980 + 0.456591I$ | $2.49717 - 6.15202I$ | 0 |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|------------------------------------------------------------------------------------------|---------------------------------------|-----------------------|
| $u = 0.790504 + 0.363992I$ $a = -2.05684 - 1.83461I$ $b = 1.372270 + 0.321304I$ | $2.02169 - 0.07920I$ | 0 |
| $u = 0.790504 - 0.363992I$ $a = -2.05684 + 1.83461I$ $b = 1.372270 - 0.321304I$ | $2.02169 + 0.07920I$ | 0 |
| $u = -1.080770 + 0.356839I$ $a = 0.265945 - 0.700185I$ $b = -0.863087 - 0.537497I$ | $-2.46714 + 6.77503I$ | 0 |
| $u = -1.080770 - 0.356839I$ $a = 0.265945 + 0.700185I$ $b = -0.863087 + 0.537497I$ | $-2.46714 - 6.77503I$ | 0 |
| $u = 1.084120 + 0.362868I$ $a = 0.489829 + 0.030229I$ $b = -0.122932 - 0.103046I$ | $-2.25525 - 1.15492I$ | 0 |
| $u = 1.084120 - 0.362868I$ $a = 0.489829 - 0.030229I$ $b = -0.122932 + 0.103046I$ | $-2.25525 + 1.15492I$ | 0 |
| $u = 1.038050 + 0.485618I$ $a = -1.140930 + 0.116289I$ $b = -0.059119 - 1.083010I$ | $-3.10217 - 5.44544I$ | 0 |
| $u = 1.038050 - 0.485618I$ $a = -1.140930 - 0.116289I$ $b = -0.059119 + 1.083010I$ | $-3.10217 + 5.44544I$ | 0 |
| $u = -0.446596 + 0.719406I$ $a = -3.45070 - 1.11496I$ $b = 1.082570 - 0.076456I$ | $3.90317 - 1.17062I$ | $-12.4798 - 11.4287I$ |
| $u = -0.446596 - 0.719406I$ $a = -3.45070 + 1.11496I$ $b = 1.082570 + 0.076456I$ | $3.90317 + 1.17062I$ | $-12.4798 + 11.4287I$ |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|-----------------------------------------------------------------------------------------|---------------------------------------|----------------------|
| $u = 1.161770 + 0.086552I$ $a = 1.236190 + 0.634667I$ $b = 1.185150 + 0.478372I$ | $0.55551 + 1.40163I$ | 0 |
| $u = 1.161770 - 0.086552I$ $a = 1.236190 - 0.634667I$ $b = 1.185150 - 0.478372I$ | $0.55551 - 1.40163I$ | 0 |
| $u = -1.028210 + 0.552628I$ $a = 0.320805 - 0.994333I$ $b = 0.760656 - 0.267559I$ | $1.30476 + 4.74367I$ | 0 |
| $u = -1.028210 - 0.552628I$ $a = 0.320805 + 0.994333I$ $b = 0.760656 + 0.267559I$ | $1.30476 - 4.74367I$ | 0 |
| $u = -0.547458 + 0.616819I$ $a = 0.380436 + 1.281360I$ $b = 0.533566 + 0.191258I$ | $2.75270 - 0.12135I$ | $4.31662 + 2.02203I$ |
| $u = -0.547458 - 0.616819I$ $a = 0.380436 - 1.281360I$ $b = 0.533566 - 0.191258I$ | $2.75270 + 0.12135I$ | $4.31662 - 2.02203I$ |
| $u = -0.807220 + 0.862104I$ $a = 1.76520 - 0.56811I$ $b = -1.359920 - 0.328154I$ | $8.89963 + 7.63957I$ | 0 |
| $u = -0.807220 - 0.862104I$ $a = 1.76520 + 0.56811I$ $b = -1.359920 + 0.328154I$ | $8.89963 - 7.63957I$ | 0 |
| $u = 1.18173$ $a = 0.931526$ $b = -0.234317$ | -2.49567 | 0 |
| $u = -0.318606 + 0.734288I$ $a = 0.612231 - 0.184593I$ $b = 0.013745 - 0.300945I$ | $1.66501 - 1.71486I$ | $-61.361742 + 0.10I$ |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|-----------------------------------------------------------------------------------------|---------------------------------------|----------------------|
| $u = -0.318606 - 0.734288I$ $a = 0.612231 + 0.184593I$ $b = 0.013745 + 0.300945I$ | $1.66501 + 1.71486I$ | $-61.361742 + 0.10I$ |
| $u = 0.984748 + 0.690918I$ $a = 1.54329 + 0.82282I$ $b = -0.949424 + 0.157182I$ | $-0.71473 - 2.85212I$ | 0 |
| $u = 0.984748 - 0.690918I$ $a = 1.54329 - 0.82282I$ $b = -0.949424 - 0.157182I$ | $-0.71473 + 2.85212I$ | 0 |
| $u = 1.056260 + 0.592575I$ $a = 1.87255 + 1.59328I$ $b = -1.32371 + 0.54168I$ | $0.85835 - 11.16100I$ | 0 |
| $u = 1.056260 - 0.592575I$ $a = 1.87255 - 1.59328I$ $b = -1.32371 - 0.54168I$ | $0.85835 + 11.16100I$ | 0 |
| $u = -1.042270 + 0.620203I$ $a = -0.79199 + 1.22850I$ $b = 1.66970 - 0.27894I$ | $5.01931 + 4.78307I$ | 0 |
| $u = -1.042270 - 0.620203I$ $a = -0.79199 - 1.22850I$ $b = 1.66970 + 0.27894I$ | $5.01931 - 4.78307I$ | 0 |
| $u = -0.880373 + 0.849310I$ $a = 1.37328 - 0.77373I$ $b = -1.313920 + 0.221045I$ | $8.69358 - 1.42500I$ | 0 |
| $u = -0.880373 - 0.849310I$ $a = 1.37328 + 0.77373I$ $b = -1.313920 - 0.221045I$ | $8.69358 + 1.42500I$ | 0 |
| $u = -1.079070 + 0.586402I$ $a = -2.04909 + 2.47569I$ $b = 1.079110 + 0.152121I$ | $2.03656 + 6.17754I$ | 0 |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|-------------------------------------------------------------------------------------------|---------------------------------------|-----------------------|
| $u = -1.079070 - 0.586402I$ $a = -2.04909 - 2.47569I$ $b = 1.079110 - 0.152121I$ | $2.03656 - 6.17754I$ | 0 |
| $u = 1.231670 + 0.215746I$ $a = 0.764987 + 0.972003I$ $b = -0.102288 + 0.984625I$ | $-3.75795 + 2.95090I$ | 0 |
| $u = 1.231670 - 0.215746I$ $a = 0.764987 - 0.972003I$ $b = -0.102288 - 0.984625I$ | $-3.75795 - 2.95090I$ | 0 |
| $u = -1.097490 + 0.619257I$ $a = -1.33392 + 1.58874I$ $b = 1.36356 + 0.82563I$ | $4.05037 + 8.85752I$ | 0 |
| $u = -1.097490 - 0.619257I$ $a = -1.33392 - 1.58874I$ $b = 1.36356 - 0.82563I$ | $4.05037 - 8.85752I$ | 0 |
| $u = -1.135860 + 0.560749I$ $a = 0.022478 + 0.205110I$ $b = -0.133149 + 0.453460I$ | $-0.73011 + 6.65250I$ | 0 |
| $u = -1.135860 - 0.560749I$ $a = 0.022478 - 0.205110I$ $b = -0.133149 - 0.453460I$ | $-0.73011 - 6.65250I$ | 0 |
| $u = -1.149120 + 0.600939I$ $a = -0.994556 + 0.196558I$ $b = -0.068869 + 1.265220I$ | $-1.04730 + 11.43990I$ | 0 |
| $u = -1.149120 - 0.600939I$ $a = -0.994556 - 0.196558I$ $b = -0.068869 - 1.265220I$ | $-1.04730 - 11.43990I$ | 0 |
| $u = 0.599364 + 0.250259I$ $a = 0.926149 + 0.825816I$ $b = 0.049986 - 0.360419I$ | $-0.95967 - 1.37657I$ | $-3.31883 + 4.67522I$ |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|-----------------------------------------------------------------------------------------|---------------------------------------|-----------------------|
| $u = 0.599364 - 0.250259I$ $a = 0.926149 - 0.825816I$ $b = 0.049986 + 0.360419I$ | $-0.95967 + 1.37657I$ | $-3.31883 - 4.67522I$ |
| $u = -1.195940 + 0.633491I$ $a = 1.37020 - 1.59964I$ $b = -1.37982 - 0.60344I$ | $3.1034 + 17.9006I$ | 0 |
| $u = -1.195940 - 0.633491I$ $a = 1.37020 + 1.59964I$ $b = -1.37982 + 0.60344I$ | $3.1034 - 17.9006I$ | 0 |
| $u = 1.347240 + 0.200389I$ $a = 0.024274 - 0.287891I$ $b = -1.287330 - 0.518358I$ | $-0.05021 + 8.32055I$ | 0 |
| $u = 1.347240 - 0.200389I$ $a = 0.024274 + 0.287891I$ $b = -1.287330 + 0.518358I$ | $-0.05021 - 8.32055I$ | 0 |
| $u = -1.198560 + 0.662000I$ $a = 1.20928 - 1.12409I$ $b = -1.116610 - 0.326840I$ | $2.02563 + 9.85203I$ | 0 |
| $u = -1.198560 - 0.662000I$ $a = 1.20928 + 1.12409I$ $b = -1.116610 + 0.326840I$ | $2.02563 - 9.85203I$ | 0 |
| $u = 1.317000 + 0.412094I$ $a = 0.419058 + 0.540978I$ $b = -0.869525 + 0.090739I$ | $-1.87887 - 1.58264I$ | 0 |
| $u = 1.317000 - 0.412094I$ $a = 0.419058 - 0.540978I$ $b = -0.869525 - 0.090739I$ | $-1.87887 + 1.58264I$ | 0 |
| $u = 1.40291$ $a = 0.520882$ $b = -0.825783$ | -2.21927 | 0 |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|-----------------------------------------------------------------------------------------|---------------------------------------|-----------------------|
| $u = 0.332881 + 0.406496I$ $a = 0.404933 - 1.218440I$ $b = -0.058016 + 0.768540I$ | $-1.24805 + 1.52698I$ | $-2.33035 - 1.80956I$ |
| $u = 0.332881 - 0.406496I$ $a = 0.404933 + 1.218440I$ $b = -0.058016 - 0.768540I$ | $-1.24805 - 1.52698I$ | $-2.33035 + 1.80956I$ |
| $u = 0.0030157 + 0.1073640I$ $a = 2.68974 + 9.40123I$ $b = 1.016320 - 0.211690I$ | $1.89935 - 0.79593I$ | $4.72564 - 0.80285I$ |
| $u = 0.0030157 - 0.1073640I$ $a = 2.68974 - 9.40123I$ $b = 1.016320 + 0.211690I$ | $1.89935 + 0.79593I$ | $4.72564 + 0.80285I$ |

$$\text{II. } I_2^u = \langle b - a + 1, a^6 - 5a^5 + 9a^4 - 8a^3 + 5a^2 - 2a + 1, u - 1 \rangle$$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} a \\ a - 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} a^2 - a + 1 \\ a^2 - 2a + 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -a^3 + 2a^2 - a + 1 \\ -a^3 + 3a^2 - 2a \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0 \\ a^5 - 4a^4 + 4a^3 + a^2 - 2a + 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} a \\ a^2 - 2a + 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0 \\ a^5 - 4a^4 + 4a^3 + a^2 - 2a + 1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

(ii) Obstruction class = 1

(iii) Cusp Shapes = $3a^5 - 16a^4 + 35a^3 - 37a^2 + 21a - 11$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

| Solutions to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|-----------------------------|---------------------------------------|-----------------------|
| $u = 1.00000$ | | |
| $a = 0.571757 + 0.664531I$ | $-3.53554 + 0.92430I$ | $-6.31051 - 0.25702I$ |
| $b = -0.428243 + 0.664531I$ | | |
| $u = 1.00000$ | | |
| $a = 0.571757 - 0.664531I$ | $-3.53554 - 0.92430I$ | $-6.31051 + 0.25702I$ |
| $b = -0.428243 - 0.664531I$ | | |
| $u = 1.00000$ | | |
| $a = -0.073950 + 0.558752I$ | $-1.64493 - 5.69302I$ | $-0.29418 + 8.33058I$ |
| $b = -1.073950 + 0.558752I$ | | |
| $u = 1.00000$ | | |
| $a = -0.073950 - 0.558752I$ | $-1.64493 + 5.69302I$ | $-0.29418 - 8.33058I$ |
| $b = -1.073950 - 0.558752I$ | | |
| $u = 1.00000$ | | |
| $a = 2.00219 + 0.29554I$ | $0.245672 + 0.924305I$ | $0.60470 + 5.55069I$ |
| $b = 1.002190 + 0.295542I$ | | |
| $u = 1.00000$ | | |
| $a = 2.00219 - 0.29554I$ | $0.245672 - 0.924305I$ | $0.60470 - 5.55069I$ |
| $b = 1.002190 - 0.295542I$ | | |

III. u-Polynomials

| Crossings | u-Polynomials at each crossing |
|------------|-------------------------------------------------------------------------------------|
| c_1 | $((u - 1)^6)(u^{84} - 7u^{83} + \dots - 3u + 1)$ |
| c_2 | $((u + 1)^6)(u^{84} + 41u^{83} + \dots - 157u + 1)$ |
| c_3, c_6 | $u^6(u^{84} - u^{83} + \dots - 320u + 64)$ |
| c_4 | $((u + 1)^6)(u^{84} - 7u^{83} + \dots - 3u + 1)$ |
| c_5 | $(u^6 - 3u^5 + 5u^4 - 4u^3 + 2u^2 - u + 1)(u^{84} - 6u^{83} + \dots - 2u + 1)$ |
| c_7 | $(u^6 + u^5 - u^4 - 2u^3 + u + 1)(u^{84} - 14u^{83} + \dots - 2u + 1)$ |
| c_8 | $(u^6 - u^5 - u^4 + 2u^3 - u + 1)(u^{84} + 2u^{83} + \dots + 14u + 1)$ |
| c_9 | $(u^6 - u^5 - u^4 + 2u^3 - u + 1)(u^{84} + 2u^{83} + \dots - 418u + 367)$ |
| c_{10} | $(u^6 - 3u^5 + 5u^4 - 4u^3 + 2u^2 - u + 1)(u^{84} + 6u^{83} + \dots - 1166u - 101)$ |
| c_{11} | $(u^6 + u^5 - u^4 - 2u^3 + u + 1)(u^{84} + 2u^{83} + \dots + 14u + 1)$ |

IV. Riley Polynomials

| Crossings | Riley Polynomials at each crossing |
|---------------|--------------------------------------------------------------------------------------------------------|
| c_1, c_4 | $((y - 1)^6)(y^{84} - 41y^{83} + \dots + 157y + 1)$ |
| c_2 | $((y - 1)^6)(y^{84} + 11y^{83} + \dots - 14895y + 1)$ |
| c_3, c_6 | $y^6(y^{84} - 39y^{83} + \dots - 61440y + 4096)$ |
| c_5 | $(y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1)(y^{84} + 14y^{83} + \dots + 6y + 1)$ |
| c_7 | $(y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1)(y^{84} - 6y^{83} + \dots - 14y + 1)$ |
| c_8, c_{11} | $(y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1)(y^{84} - 54y^{83} + \dots - 14y + 1)$ |
| c_9 | $(y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1)$ $\cdot (y^{84} - 66y^{83} + \dots + 5678926y + 134689)$ |
| c_{10} | $(y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1)(y^{84} - 82y^{83} + \dots - 878594y + 10201)$ |