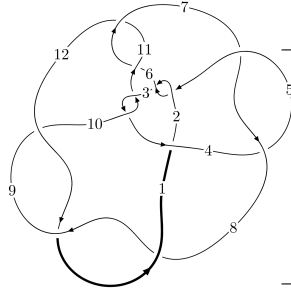
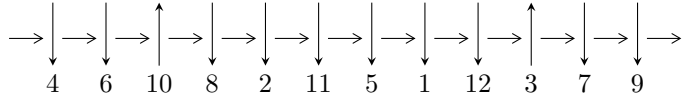


12a₀₉₄₇ (K12a₀₉₄₇)



A knot diagram¹

Linearized knot diagram



Solving Sequence

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

Ideals for irreducible components² of X_{par}

$$I_1^u = \langle 7.66580 \times 10^{216} u^{95} + 3.01207 \times 10^{217} u^{94} + \dots + 1.39904 \times 10^{215} b - 6.84600 \times 10^{217}, \\ 1.29437 \times 10^{218} u^{95} + 5.06589 \times 10^{218} u^{94} + \dots + 1.39904 \times 10^{215} a - 1.09950 \times 10^{219}, u^{96} + 4u^{95} + \dots - 25000 \rangle$$

$$I_2^u = \langle 1711u^{17} - 5392u^{16} + \dots + 2500b - 6081, -3773u^{17} + 11256u^{16} + \dots + 2500a + 13183, \\ u^{18} - 3u^{17} + \dots - 8u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 114 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.

$$\mathbf{I. } I_1^u = \langle 7.67 \times 10^{216} u^{95} + 3.01 \times 10^{217} u^{94} + \dots + 1.40 \times 10^{215} b - 6.85 \times 10^{217}, 1.29 \times 10^{218} u^{95} + 5.07 \times 10^{218} u^{94} + \dots + 1.40 \times 10^{215} a - 1.10 \times 10^{219}, u^{96} + 4u^{95} + \dots - 25u - 1 \rangle$$

(i) Arc colorings

$$\begin{aligned} a_1 &= \begin{pmatrix} 0 \\ u \end{pmatrix} \\ a_8 &= \begin{pmatrix} 1 \\ 0 \end{pmatrix} \\ a_5 &= \begin{pmatrix} -925.186u^{95} - 3620.99u^{94} + \dots + 138205.u + 7859.01 \\ -54.7935u^{95} - 215.296u^{94} + \dots + 8402.17u + 489.337 \end{pmatrix} \\ a_9 &= \begin{pmatrix} 1 \\ u^2 \end{pmatrix} \\ a_4 &= \begin{pmatrix} -979.980u^{95} - 3836.28u^{94} + \dots + 146607.u + 8348.35 \\ -54.7935u^{95} - 215.296u^{94} + \dots + 8402.17u + 489.337 \end{pmatrix} \\ a_2 &= \begin{pmatrix} 3187.09u^{95} + 12055.6u^{94} + \dots - 285324.u - 13138.4 \\ -336.870u^{95} - 1289.44u^{94} + \dots + 36955.3u + 1887.42 \end{pmatrix} \\ a_7 &= \begin{pmatrix} 1579.76u^{95} + 6036.96u^{94} + \dots - 169129.u - 8544.27 \\ 307.658u^{95} + 1175.84u^{94} + \dots - 33247.8u - 1685.90 \end{pmatrix} \\ a_{12} &= \begin{pmatrix} u \\ u^3 + u \end{pmatrix} \\ a_{10} &= \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix} \\ a_3 &= \begin{pmatrix} -920.556u^{95} - 3608.52u^{94} + \dots + 140115.u + 8009.42 \\ -51.2527u^{95} - 201.384u^{94} + \dots + 8012.54u + 469.142 \end{pmatrix} \\ a_{11} &= \begin{pmatrix} 3385.53u^{95} + 12905.7u^{94} + \dots - 348333.u - 17274.1 \\ 200.126u^{95} + 764.543u^{94} + \dots - 21202.5u - 1065.35 \end{pmatrix} \\ a_6 &= \begin{pmatrix} -3201.35u^{95} - 12106.0u^{94} + \dots + 285009.u + 13082.2 \\ 348.559u^{95} + 1334.10u^{94} + \dots - 38296.5u - 1957.71 \end{pmatrix} \end{aligned}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes = $-1561.38u^{95} - 5923.49u^{94} + \dots + 147695.u + 7028.63$

(iv) u-Polynomials at the component

| Crossings | u-Polynomials at each crossing |
|--------------------|--|
| c_1 | $u^{96} - 12u^{95} + \dots + 50079u - 22271$ |
| c_2, c_5 | $u^{96} + u^{95} + \dots + 22242u - 604$ |
| c_3, c_{10} | $u^{96} + u^{95} + \dots - 12111u + 11963$ |
| c_4, c_7 | $u^{96} - 8u^{95} + \dots + 2325u + 599$ |
| c_6, c_{11} | $u^{96} - u^{95} + \dots + 29368u + 2361$ |
| c_8, c_9, c_{12} | $u^{96} - 4u^{95} + \dots + 25u - 1$ |

(v) Riley Polynomials at the component

| Crossings | Riley Polynomials at each crossing |
|--------------------|--|
| c_1 | $y^{96} + 22y^{95} + \dots + 13135555953y + 495997441$ |
| c_2, c_5 | $y^{96} - 79y^{95} + \dots - 781387916y + 364816$ |
| c_3, c_{10} | $y^{96} + 83y^{95} + \dots - 3976989661y + 143113369$ |
| c_4, c_7 | $y^{96} + 74y^{95} + \dots + 27105699y + 358801$ |
| c_6, c_{11} | $y^{96} - 73y^{95} + \dots - 1783425250y + 5574321$ |
| c_8, c_9, c_{12} | $y^{96} + 98y^{95} + \dots - 125y + 1$ |

(vi) Complex Volumes and Cusp Shapes

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|--|---------------------------------------|------------|
| $u = 0.668054 + 0.736176I$ $a = -0.429663 + 0.886280I$ $b = -0.273010 - 1.079940I$ | $1.87671 - 3.14768I$ | 0 |
| $u = 0.668054 - 0.736176I$ $a = -0.429663 - 0.886280I$ $b = -0.273010 + 1.079940I$ | $1.87671 + 3.14768I$ | 0 |
| $u = 0.774207 + 0.606189I$ $a = 0.915311 - 0.669410I$ $b = 0.133604 + 1.038010I$ | $1.49646 - 2.68540I$ | 0 |
| $u = 0.774207 - 0.606189I$ $a = 0.915311 + 0.669410I$ $b = 0.133604 - 1.038010I$ | $1.49646 + 2.68540I$ | 0 |
| $u = -0.498397 + 0.839577I$ $a = -0.08073 + 1.53160I$ $b = 0.574093 - 0.358999I$ | $-8.84762 - 2.96103I$ | 0 |
| $u = -0.498397 - 0.839577I$ $a = -0.08073 - 1.53160I$ $b = 0.574093 + 0.358999I$ | $-8.84762 + 2.96103I$ | 0 |
| $u = -0.906591 + 0.538873I$ $a = 0.708668 + 0.801467I$ $b = 0.539203 - 1.263990I$ | $-6.8746 + 12.7575I$ | 0 |
| $u = -0.906591 - 0.538873I$ $a = 0.708668 - 0.801467I$ $b = 0.539203 + 1.263990I$ | $-6.8746 - 12.7575I$ | 0 |
| $u = 0.642962 + 0.634792I$ $a = 0.705564 - 0.816030I$ $b = 0.614653 + 1.195540I$ | $-1.62318 - 7.04624I$ | 0 |
| $u = 0.642962 - 0.634792I$ $a = 0.705564 + 0.816030I$ $b = 0.614653 - 1.195540I$ | $-1.62318 + 7.04624I$ | 0 |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|--|---------------------------------------|------------|
| $u = 0.823842 + 0.327264I$ $a = -0.400902 - 0.137615I$ $b = 0.345374 - 0.991459I$ | $-2.63541 + 2.26716I$ | 0 |
| $u = 0.823842 - 0.327264I$ $a = -0.400902 + 0.137615I$ $b = 0.345374 + 0.991459I$ | $-2.63541 - 2.26716I$ | 0 |
| $u = 0.667116 + 0.468592I$ $a = -1.53049 + 0.79417I$ $b = -0.411037 - 1.217960I$ | $-1.76974 - 6.29232I$ | 0 |
| $u = 0.667116 - 0.468592I$ $a = -1.53049 - 0.79417I$ $b = -0.411037 + 1.217960I$ | $-1.76974 + 6.29232I$ | 0 |
| $u = -0.979656 + 0.724547I$ $a = -0.444493 - 0.520408I$ $b = 0.354693 + 1.111030I$ | $-6.48587 - 6.61272I$ | 0 |
| $u = -0.979656 - 0.724547I$ $a = -0.444493 + 0.520408I$ $b = 0.354693 - 1.111030I$ | $-6.48587 + 6.61272I$ | 0 |
| $u = 0.273545 + 1.199010I$ $a = -0.019882 + 0.518557I$ $b = -0.154446 - 0.611071I$ | $2.09188 - 2.59239I$ | 0 |
| $u = 0.273545 - 1.199010I$ $a = -0.019882 - 0.518557I$ $b = -0.154446 + 0.611071I$ | $2.09188 + 2.59239I$ | 0 |
| $u = -0.696468 + 0.319796I$ $a = 0.387796 - 0.165500I$ $b = 1.049040 + 0.160137I$ | $-10.34670 + 7.16521I$ | 0 |
| $u = -0.696468 - 0.319796I$ $a = 0.387796 + 0.165500I$ $b = 1.049040 - 0.160137I$ | $-10.34670 - 7.16521I$ | 0 |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|--|---------------------------------------|------------|
| $u = -1.163950 + 0.429343I$ $a = -0.338442 - 0.653919I$ $b = -0.239374 + 1.220300I$ | $-0.75881 + 5.38751I$ | 0 |
| $u = -1.163950 - 0.429343I$ $a = -0.338442 + 0.653919I$ $b = -0.239374 - 1.220300I$ | $-0.75881 - 5.38751I$ | 0 |
| $u = 0.590524 + 0.473244I$ $a = -0.555181 + 0.658882I$ $b = -0.786117 - 0.003987I$ | $-5.43999 - 2.01203I$ | 0 |
| $u = 0.590524 - 0.473244I$ $a = -0.555181 - 0.658882I$ $b = -0.786117 + 0.003987I$ | $-5.43999 + 2.01203I$ | 0 |
| $u = -0.334446 + 1.211940I$ $a = 0.436652 - 0.624605I$ $b = -0.0686828 - 0.1203880I$ | $-1.64270 + 1.53619I$ | 0 |
| $u = -0.334446 - 1.211940I$ $a = 0.436652 + 0.624605I$ $b = -0.0686828 + 0.1203880I$ | $-1.64270 - 1.53619I$ | 0 |
| $u = -0.239165 + 1.236350I$ $a = -0.960999 + 0.305868I$ $b = 0.062907 + 0.929306I$ | $-3.21662 + 4.59968I$ | 0 |
| $u = -0.239165 - 1.236350I$ $a = -0.960999 - 0.305868I$ $b = 0.062907 - 0.929306I$ | $-3.21662 - 4.59968I$ | 0 |
| $u = -0.718935 + 0.159858I$ $a = -0.424784 + 0.609798I$ $b = -0.625472 + 0.146870I$ | $-4.80317 + 2.40591I$ | 0 |
| $u = -0.718935 - 0.159858I$ $a = -0.424784 - 0.609798I$ $b = -0.625472 - 0.146870I$ | $-4.80317 - 2.40591I$ | 0 |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|---|---------------------------------------|------------|
| $u = 0.598357 + 0.380180I$ $a = 0.210313 - 0.387022I$ $b = -0.363056 + 1.191810I$ | $-1.82836 + 2.13302I$ | 0 |
| $u = 0.598357 - 0.380180I$ $a = 0.210313 + 0.387022I$ $b = -0.363056 - 1.191810I$ | $-1.82836 - 2.13302I$ | 0 |
| $u = -0.388642 + 0.581905I$ $a = 1.232050 + 0.617206I$ $b = 0.004208 - 1.122470I$ | $3.09946 - 0.88819I$ | 0 |
| $u = -0.388642 - 0.581905I$ $a = 1.232050 - 0.617206I$ $b = 0.004208 + 1.122470I$ | $3.09946 + 0.88819I$ | 0 |
| $u = -0.200518 + 1.292240I$ $a = 0.808068 + 0.422740I$ $b = 0.629734 - 0.807012I$ | $-2.97629 + 1.71649I$ | 0 |
| $u = -0.200518 - 1.292240I$ $a = 0.808068 - 0.422740I$ $b = 0.629734 + 0.807012I$ | $-2.97629 - 1.71649I$ | 0 |
| $u = -0.651902 + 0.011051I$ $a = 0.48383 - 1.60027I$ $b = 0.358350 - 0.916006I$ | $-6.96647 - 1.33186I$ | 0 |
| $u = -0.651902 - 0.011051I$ $a = 0.48383 + 1.60027I$ $b = 0.358350 + 0.916006I$ | $-6.96647 + 1.33186I$ | 0 |
| $u = -0.067232 + 1.355170I$ $a = 0.658539 - 0.383013I$ $b = 0.681245 + 0.819076I$ | $-2.94394 - 3.38274I$ | 0 |
| $u = -0.067232 - 1.355170I$ $a = 0.658539 + 0.383013I$ $b = 0.681245 - 0.819076I$ | $-2.94394 + 3.38274I$ | 0 |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|--|---------------------------------------|------------|
| $u = -0.012508 + 1.365180I$ $a = 0.467529 + 1.277170I$ $b = -1.07644 - 1.16046I$ | $2.32136 - 0.99850I$ | 0 |
| $u = -0.012508 - 1.365180I$ $a = 0.467529 - 1.277170I$ $b = -1.07644 + 1.16046I$ | $2.32136 + 0.99850I$ | 0 |
| $u = -0.044464 + 1.387330I$ $a = -0.78788 + 3.18341I$ $b = 0.046890 - 1.016990I$ | $-2.92861 + 5.06579I$ | 0 |
| $u = -0.044464 - 1.387330I$ $a = -0.78788 - 3.18341I$ $b = 0.046890 + 1.016990I$ | $-2.92861 - 5.06579I$ | 0 |
| $u = 0.039477 + 1.389100I$ $a = 0.748873 - 0.921047I$ $b = -1.164940 + 0.583436I$ | $2.88902 + 0.10276I$ | 0 |
| $u = 0.039477 - 1.389100I$ $a = 0.748873 + 0.921047I$ $b = -1.164940 - 0.583436I$ | $2.88902 - 0.10276I$ | 0 |
| $u = -0.039094 + 1.392830I$ $a = 0.34099 - 2.56779I$ $b = -0.03424 + 1.45584I$ | $2.74416 + 2.23104I$ | 0 |
| $u = -0.039094 - 1.392830I$ $a = 0.34099 + 2.56779I$ $b = -0.03424 - 1.45584I$ | $2.74416 - 2.23104I$ | 0 |
| $u = -0.236781 + 1.381320I$ $a = 0.199484 - 0.439820I$ $b = -1.018700 + 0.328866I$ | $0.13082 + 5.78530I$ | 0 |
| $u = -0.236781 - 1.381320I$ $a = 0.199484 + 0.439820I$ $b = -1.018700 - 0.328866I$ | $0.13082 - 5.78530I$ | 0 |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|---|---------------------------------------|------------|
| $u = -0.487460 + 0.337071I$ $a = -1.43333 - 0.19210I$ $b = -0.361403 + 1.207450I$ | $2.21607 + 3.89167I$ | 0 |
| $u = -0.487460 - 0.337071I$ $a = -1.43333 + 0.19210I$ $b = -0.361403 - 1.207450I$ | $2.21607 - 3.89167I$ | 0 |
| $u = -0.00983 + 1.42816I$ $a = -2.25692 + 3.77262I$ $b = 2.43742 - 3.56985I$ | $1.51043 - 0.22749I$ | 0 |
| $u = -0.00983 - 1.42816I$ $a = -2.25692 - 3.77262I$ $b = 2.43742 + 3.56985I$ | $1.51043 + 0.22749I$ | 0 |
| $u = 0.09307 + 1.43320I$ $a = 0.0202345 + 0.1232400I$ $b = 0.710877 - 0.165736I$ | $5.21611 - 2.54667I$ | 0 |
| $u = 0.09307 - 1.43320I$ $a = 0.0202345 - 0.1232400I$ $b = 0.710877 + 0.165736I$ | $5.21611 + 2.54667I$ | 0 |
| $u = -0.23560 + 1.43527I$ $a = -0.747540 + 0.345048I$ $b = 1.367330 - 0.026498I$ | $-4.69844 + 10.49820I$ | 0 |
| $u = -0.23560 - 1.43527I$ $a = -0.747540 - 0.345048I$ $b = 1.367330 + 0.026498I$ | $-4.69844 - 10.49820I$ | 0 |
| $u = -0.15472 + 1.45796I$ $a = -0.58666 - 1.95673I$ $b = -0.53503 + 1.40775I$ | $8.10551 + 6.17069I$ | 0 |
| $u = -0.15472 - 1.45796I$ $a = -0.58666 + 1.95673I$ $b = -0.53503 - 1.40775I$ | $8.10551 - 6.17069I$ | 0 |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|--|---------------------------------------|-----------------------|
| $u = 0.272832 + 0.457961I$ $a = -0.20693 - 3.00470I$ $b = 0.450825 + 0.683358I$ | $-3.73987 - 1.13063I$ | $-8.00000 + 6.44488I$ |
| $u = 0.272832 - 0.457961I$ $a = -0.20693 + 3.00470I$ $b = 0.450825 - 0.683358I$ | $-3.73987 + 1.13063I$ | $-8.00000 - 6.44488I$ |
| $u = 0.17231 + 1.46579I$ $a = 0.218752 + 0.471901I$ $b = -0.834008 + 0.034716I$ | $0.84957 - 4.70495I$ | 0 |
| $u = 0.17231 - 1.46579I$ $a = 0.218752 - 0.471901I$ $b = -0.834008 - 0.034716I$ | $0.84957 + 4.70495I$ | 0 |
| $u = 0.24482 + 1.49732I$ $a = -0.94373 + 1.88436I$ $b = -0.499876 - 1.284310I$ | $4.61884 - 9.65625I$ | 0 |
| $u = 0.24482 - 1.49732I$ $a = -0.94373 - 1.88436I$ $b = -0.499876 + 1.284310I$ | $4.61884 + 9.65625I$ | 0 |
| $u = -0.13121 + 1.51782I$ $a = 0.57604 + 1.82619I$ $b = 0.300348 - 1.335480I$ | $10.03230 + 1.02772I$ | 0 |
| $u = -0.13121 - 1.51782I$ $a = 0.57604 - 1.82619I$ $b = 0.300348 + 1.335480I$ | $10.03230 - 1.02772I$ | 0 |
| $u = 0.470058$ $a = 0.0993130$ $b = -0.560975$ | -1.11295 | -8.05890 |
| $u = 0.349554 + 0.313696I$ $a = 0.936534 + 0.194848I$ $b = 0.175834 - 0.238730I$ | $-0.444696 - 1.022470I$ | $-6.57018 + 6.95164I$ |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|--|---------------------------------------|-----------------------|
| $u = 0.349554 - 0.313696I$ $a = 0.936534 - 0.194848I$ $b = 0.175834 + 0.238730I$ | $-0.444696 + 1.022470I$ | $-6.57018 - 6.95164I$ |
| $u = 0.26328 + 1.53802I$ $a = 0.72739 - 1.59076I$ $b = 0.360979 + 1.207530I$ | $8.41684 - 6.46441I$ | 0 |
| $u = 0.26328 - 1.53802I$ $a = 0.72739 + 1.59076I$ $b = 0.360979 - 1.207530I$ | $8.41684 + 6.46441I$ | 0 |
| $u = 0.21457 + 1.54770I$ $a = -0.34526 + 1.94680I$ $b = -0.39627 - 1.42796I$ | $9.20138 - 6.35589I$ | 0 |
| $u = 0.21457 - 1.54770I$ $a = -0.34526 - 1.94680I$ $b = -0.39627 + 1.42796I$ | $9.20138 + 6.35589I$ | 0 |
| $u = 0.20980 + 1.54963I$ $a = 0.18117 - 1.94632I$ $b = 0.72524 + 1.47629I$ | $5.55276 - 10.18430I$ | 0 |
| $u = 0.20980 - 1.54963I$ $a = 0.18117 + 1.94632I$ $b = 0.72524 - 1.47629I$ | $5.55276 + 10.18430I$ | 0 |
| $u = -0.32267 + 1.54800I$ $a = 0.53435 + 1.91809I$ $b = 0.60673 - 1.42875I$ | $-0.1238 + 17.2373I$ | 0 |
| $u = -0.32267 - 1.54800I$ $a = 0.53435 - 1.91809I$ $b = 0.60673 + 1.42875I$ | $-0.1238 - 17.2373I$ | 0 |
| $u = -0.37589 + 1.53929I$ $a = -0.59083 - 1.74605I$ $b = -0.39913 + 1.41885I$ | $5.62567 + 10.69680I$ | 0 |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|--|---------------------------------------|---------------------|
| $u = -0.37589 - 1.53929I$ $a = -0.59083 + 1.74605I$ $b = -0.39913 - 1.41885I$ | $5.62567 - 10.69680I$ | 0 |
| $u = 0.01947 + 1.61854I$ $a = -0.33091 - 1.79541I$ $b = -0.003582 + 1.053620I$ | $3.43321 - 2.22847I$ | 0 |
| $u = 0.01947 - 1.61854I$ $a = -0.33091 + 1.79541I$ $b = -0.003582 - 1.053620I$ | $3.43321 + 2.22847I$ | 0 |
| $u = 0.44264 + 1.61609I$ $a = -0.487156 + 1.092090I$ $b = -0.056623 - 1.010290I$ | $3.08627 - 2.66733I$ | 0 |
| $u = 0.44264 - 1.61609I$ $a = -0.487156 - 1.092090I$ $b = -0.056623 + 1.010290I$ | $3.08627 + 2.66733I$ | 0 |
| $u = -0.64303 + 1.55298I$ $a = 0.520043 + 1.301040I$ $b = 0.076727 - 1.251140I$ | $2.67014 + 2.02484I$ | 0 |
| $u = -0.64303 - 1.55298I$ $a = 0.520043 - 1.301040I$ $b = 0.076727 + 1.251140I$ | $2.67014 - 2.02484I$ | 0 |
| $u = 0.32399 + 1.67785I$ $a = 0.24779 - 1.57927I$ $b = -0.004793 + 1.161890I$ | $3.80848 - 2.17152I$ | 0 |
| $u = 0.32399 - 1.67785I$ $a = 0.24779 + 1.57927I$ $b = -0.004793 - 1.161890I$ | $3.80848 + 2.17152I$ | 0 |
| $u = 0.057804 + 0.269522I$ $a = 0.083320 + 0.844994I$ $b = 1.46795 - 1.03819I$ | $-3.97882 - 0.28086I$ | $16.2514 + 8.3840I$ |

| Solutions to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|---|---------------------------------------|------------------------|
| $u = 0.057804 - 0.269522I$ $a = 0.083320 - 0.844994I$ $b = 1.46795 + 1.03819I$ | $-3.97882 + 0.28086I$ | $16.2514 - 8.3840I$ |
| $u = -0.202663$ $a = -2.46839$ $b = -0.717324$ | -1.36266 | -4.79040 |
| $u = -0.170774 + 0.028925I$ $a = 11.35460 - 5.61146I$ $b = 0.317634 + 0.778646I$ | $-7.57638 - 4.37351I$ | $-17.4089 + 10.8016I$ |
| $u = -0.170774 - 0.028925I$ $a = 11.35460 + 5.61146I$ $b = 0.317634 - 0.778646I$ | $-7.57638 + 4.37351I$ | $-17.4089 - 10.8016I$ |
| $u = -0.165992 + 0.031137I$ $a = -3.11658 - 4.33383I$ $b = -0.446519 + 1.137610I$ | $-2.04036 + 1.55418I$ | $-12.60686 + 0.54268I$ |
| $u = -0.165992 - 0.031137I$ $a = -3.11658 + 4.33383I$ $b = -0.446519 - 1.137610I$ | $-2.04036 - 1.55418I$ | $-12.60686 - 0.54268I$ |

$$\text{II. } I_2^u = \langle 1711u^{17} - 5392u^{16} + \dots + 2500b - 6081, -3773u^{17} + 11256u^{16} + \dots + 2500a + 13183, u^{18} - 3u^{17} + \dots - 8u + 1 \rangle$$

(i) Arc colorings

$$\begin{aligned} a_1 &= \begin{pmatrix} 0 \\ u \end{pmatrix} \\ a_8 &= \begin{pmatrix} 1 \\ 0 \end{pmatrix} \\ a_5 &= \begin{pmatrix} 1.50920u^{17} - 4.50240u^{16} + \dots + 10.2684u - 5.27320 \\ -0.684400u^{17} + 2.15680u^{16} + \dots - 8.11880u + 2.43240 \end{pmatrix} \\ a_9 &= \begin{pmatrix} 1 \\ u^2 \end{pmatrix} \\ a_4 &= \begin{pmatrix} 0.824800u^{17} - 2.34560u^{16} + \dots + 2.14960u - 2.84080 \\ -0.684400u^{17} + 2.15680u^{16} + \dots - 8.11880u + 2.43240 \end{pmatrix} \\ a_2 &= \begin{pmatrix} -0.577600u^{17} + 2.10720u^{16} + \dots + 4.84480u - 1.63040 \\ -0.506800u^{17} + 1.84960u^{16} + \dots - 5.76360u + 1.46280 \end{pmatrix} \\ a_7 &= \begin{pmatrix} -1.95600u^{17} + 5.03200u^{16} + \dots - 15.4120u + 7.47600 \\ 0.493200u^{17} - 1.15040u^{16} + \dots + 2.23640u - 1.53720 \end{pmatrix} \\ a_{12} &= \begin{pmatrix} u \\ u^3 + u \end{pmatrix} \\ a_{10} &= \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix} \\ a_3 &= \begin{pmatrix} 1.57520u^{17} - 4.45440u^{16} + \dots + 10.6504u - 5.55920 \\ -0.458800u^{17} + 1.79360u^{16} + \dots - 7.66760u + 2.25480 \end{pmatrix} \\ a_{11} &= \begin{pmatrix} -0.840800u^{17} + 1.69760u^{16} + \dots - 21.1816u + 9.57680 \\ 0.0388000u^{17} - 0.553600u^{16} + \dots + 7.32760u - 2.43480 \end{pmatrix} \\ a_6 &= \begin{pmatrix} 0.106800u^{17} - 0.0496000u^{16} + \dots + 12.9636u - 4.06280 \\ -0.840400u^{17} + 2.58880u^{16} + \dots - 5.93080u + 1.10840 \end{pmatrix} \end{aligned}$$

(ii) Obstruction class = 1

$$\text{(iii) Cusp Shapes} = -\frac{1519}{625}u^{17} + \frac{4418}{625}u^{16} + \dots - \frac{33663}{625}u + \frac{1249}{625}$$

(iv) u-Polynomials at the component

| Crossings | u-Polynomials at each crossing |
|------------|--------------------------------------|
| c_1 | $u^{18} + u^{17} + \dots - 12u + 1$ |
| c_2 | $u^{18} + 6u^{17} + \dots + 6u + 4$ |
| c_3 | $u^{18} + 11u^{16} + \dots + 2u - 1$ |
| c_4 | $u^{18} - u^{17} + \dots + 2u - 1$ |
| c_5 | $u^{18} - 6u^{17} + \dots - 6u + 4$ |
| c_6 | $u^{18} - 2u^{17} + \dots - u + 1$ |
| c_7 | $u^{18} + u^{17} + \dots - 2u - 1$ |
| c_8, c_9 | $u^{18} - 3u^{17} + \dots - 8u + 1$ |
| c_{10} | $u^{18} + 11u^{16} + \dots - 2u - 1$ |
| c_{11} | $u^{18} + 2u^{17} + \dots + u + 1$ |
| c_{12} | $u^{18} + 3u^{17} + \dots + 8u + 1$ |

(v) Riley Polynomials at the component

| Crossings | Riley Polynomials at each crossing |
|--------------------|--|
| c_1 | $y^{18} - 7y^{17} + \dots - 22y + 1$ |
| c_2, c_5 | $y^{18} - 16y^{17} + \dots - 92y + 16$ |
| c_3, c_{10} | $y^{18} + 22y^{17} + \dots + 16y + 1$ |
| c_4, c_7 | $y^{18} + 21y^{17} + \dots + 16y + 1$ |
| c_6, c_{11} | $y^{18} - 14y^{17} + \dots - 9y + 1$ |
| c_8, c_9, c_{12} | $y^{18} + 21y^{17} + \dots - 28y + 1$ |

(vi) Complex Volumes and Cusp Shapes

| Solutions to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|---|---------------------------------------|------------------------|
| $u = 0.825579 + 0.459114I$ $a = -0.673049 + 0.611182I$ $b = -0.321183 - 1.121890I$ | $0.92410 - 4.04672I$ | $-9.09721 + 6.95627I$ |
| $u = 0.825579 - 0.459114I$ $a = -0.673049 - 0.611182I$ $b = -0.321183 + 1.121890I$ | $0.92410 + 4.04672I$ | $-9.09721 - 6.95627I$ |
| $u = -0.271306 + 1.045750I$ $a = -0.123098 - 0.081090I$ $b = -0.302281 + 0.869322I$ | $-0.80131 + 2.45440I$ | $-6.30262 - 3.65557I$ |
| $u = -0.271306 - 1.045750I$ $a = -0.123098 + 0.081090I$ $b = -0.302281 - 0.869322I$ | $-0.80131 - 2.45440I$ | $-6.30262 + 3.65557I$ |
| $u = -0.108969 + 1.266110I$ $a = 0.704994 - 1.223770I$ $b = 0.286103 - 0.620375I$ | $-4.36306 + 5.33485I$ | $-14.2280 - 6.0722I$ |
| $u = -0.108969 - 1.266110I$ $a = 0.704994 + 1.223770I$ $b = 0.286103 + 0.620375I$ | $-4.36306 - 5.33485I$ | $-14.2280 + 6.0722I$ |
| $u = 0.261265 + 1.271200I$ $a = 0.061309 + 0.755102I$ $b = -0.186633 - 0.368180I$ | $1.56342 - 2.47350I$ | $-13.08111 + 0.98817I$ |
| $u = 0.261265 - 1.271200I$ $a = 0.061309 - 0.755102I$ $b = -0.186633 + 0.368180I$ | $1.56342 + 2.47350I$ | $-13.08111 - 0.98817I$ |
| $u = -0.04544 + 1.42820I$ $a = -0.11303 + 2.78740I$ $b = 0.16186 - 2.45137I$ | $1.58829 - 0.39851I$ | $-0.73427 - 1.49409I$ |
| $u = -0.04544 - 1.42820I$ $a = -0.11303 - 2.78740I$ $b = 0.16186 + 2.45137I$ | $1.58829 + 0.39851I$ | $-0.73427 + 1.49409I$ |

| Solutions to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|--|---------------------------------------|-----------------------|
| $u = -0.300208 + 0.462207I$ $a = -3.15957 - 2.29135I$ $b = 0.231787 + 0.767672I$ | $-7.28159 - 3.95624I$ | $-7.65037 - 1.68005I$ |
| $u = -0.300208 - 0.462207I$ $a = -3.15957 + 2.29135I$ $b = 0.231787 - 0.767672I$ | $-7.28159 + 3.95624I$ | $-7.65037 + 1.68005I$ |
| $u = 0.24398 + 1.49796I$ $a = -0.56061 + 1.81795I$ $b = -0.51883 - 1.32707I$ | $7.24916 - 7.68005I$ | $-6.70985 + 5.96610I$ |
| $u = 0.24398 - 1.49796I$ $a = -0.56061 - 1.81795I$ $b = -0.51883 + 1.32707I$ | $7.24916 + 7.68005I$ | $-6.70985 - 5.96610I$ |
| $u = 0.409550$ $a = -0.503485$ $b = -0.925959$ | -1.89973 | -23.0090 |
| $u = 0.59845 + 1.71036I$ $a = 0.400205 - 1.291660I$ $b = 0.050637 + 1.152290I$ | $4.12262 - 2.88178I$ | $2.49993 + 8.28230I$ |
| $u = 0.59845 - 1.71036I$ $a = 0.400205 + 1.291660I$ $b = 0.050637 - 1.152290I$ | $4.12262 + 2.88178I$ | $2.49993 - 8.28230I$ |
| $u = 0.183745$ $a = -3.57082$ $b = 1.12304$ | -4.10353 | -7.38370 |

III. u-Polynomials

| Crossings | u-Polynomials at each crossing |
|------------|---|
| c_1 | $(u^{18} + u^{17} + \dots - 12u + 1)(u^{96} - 12u^{95} + \dots + 50079u - 22271)$ |
| c_2 | $(u^{18} + 6u^{17} + \dots + 6u + 4)(u^{96} + u^{95} + \dots + 22242u - 604)$ |
| c_3 | $(u^{18} + 11u^{16} + \dots + 2u - 1)(u^{96} + u^{95} + \dots - 12111u + 11963)$ |
| c_4 | $(u^{18} - u^{17} + \dots + 2u - 1)(u^{96} - 8u^{95} + \dots + 2325u + 599)$ |
| c_5 | $(u^{18} - 6u^{17} + \dots - 6u + 4)(u^{96} + u^{95} + \dots + 22242u - 604)$ |
| c_6 | $(u^{18} - 2u^{17} + \dots - u + 1)(u^{96} - u^{95} + \dots + 29368u + 2361)$ |
| c_7 | $(u^{18} + u^{17} + \dots - 2u - 1)(u^{96} - 8u^{95} + \dots + 2325u + 599)$ |
| c_8, c_9 | $(u^{18} - 3u^{17} + \dots - 8u + 1)(u^{96} - 4u^{95} + \dots + 25u - 1)$ |
| c_{10} | $(u^{18} + 11u^{16} + \dots - 2u - 1)(u^{96} + u^{95} + \dots - 12111u + 11963)$ |
| c_{11} | $(u^{18} + 2u^{17} + \dots + u + 1)(u^{96} - u^{95} + \dots + 29368u + 2361)$ |
| c_{12} | $(u^{18} + 3u^{17} + \dots + 8u + 1)(u^{96} - 4u^{95} + \dots + 25u - 1)$ |

IV. Riley Polynomials

| Crossings | Riley Polynomials at each crossing |
|--------------------|--|
| c_1 | $(y^{18} - 7y^{17} + \dots - 22y + 1)$ $\cdot (y^{96} + 22y^{95} + \dots + 13135555953y + 495997441)$ |
| c_2, c_5 | $(y^{18} - 16y^{17} + \dots - 92y + 16)$ $\cdot (y^{96} - 79y^{95} + \dots - 781387916y + 364816)$ |
| c_3, c_{10} | $(y^{18} + 22y^{17} + \dots + 16y + 1)$ $\cdot (y^{96} + 83y^{95} + \dots - 3976989661y + 143113369)$ |
| c_4, c_7 | $(y^{18} + 21y^{17} + \dots + 16y + 1)$ $\cdot (y^{96} + 74y^{95} + \dots + 27105699y + 358801)$ |
| c_6, c_{11} | $(y^{18} - 14y^{17} + \dots - 9y + 1)$ $\cdot (y^{96} - 73y^{95} + \dots - 1783425250y + 5574321)$ |
| c_8, c_9, c_{12} | $(y^{18} + 21y^{17} + \dots - 28y + 1)(y^{96} + 98y^{95} + \dots - 125y + 1)$ |