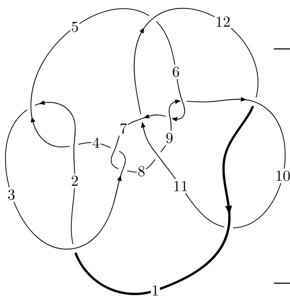
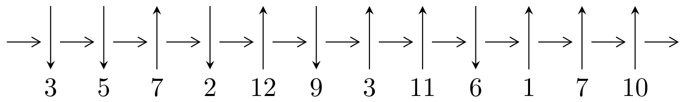
$12n_{0227}$ ($K12n_{0227}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

Ideals for irreducible components[2]of $X_{\mathbf{par}}$

$$\begin{aligned}
I_1^u = \langle & 5.42478 \times 10^{238} u^{70} - 6.98254 \times 10^{238} u^{69} + \cdots + 1.26682 \times 10^{239} b - 3.55544 \times 10^{241}, \\
& 1.09913 \times 10^{240} u^{70} - 2.05633 \times 10^{240} u^{69} + \cdots + 2.15359 \times 10^{240} a - 2.29980 \times 10^{243}, \\
& u^{71} - 2u^{70} + \cdots - 3584u + 512 \rangle \\
I_2^u = \langle & b,\ 9u^4 - 4u^3 + 3u^2 + 17a - 18u + 1,\ u^5 + u^4 + 2u^3 + u^2 + u + 1 \rangle
\end{aligned}$$

$$\begin{aligned}
I_1^v = \langle & a,\ 16726v^8 - 41423v^7 + \cdots + 11959b + 26601, \\
& v^9 - 3v^8 - 2v^7 - 6v^6 + 25v^5 - 11v^4 - 9v^3 + 2v^2 + 3v - 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 85 representations.

[1]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`).

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

I. $\boldsymbol{I_1^u = \langle 5.42 \times 10^{238} u^{70} - 6.98 \times 10^{238} u^{69} + \cdots + 1.27 \times 10^{239} b - 3.56 \times 10^{241},\ 1.10 \times 10^{240} u^{70} - 2.06 \times 10^{240} u^{69} + \cdots + 2.15 \times 10^{240} a - 2.30 \times 10^{243},\ u^{71} - 2u^{70} + \cdots - 3584u + 512 \rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.510370u^{70} + 0.954840u^{69} + \cdots - 3684.20u + 1067.89 \\ -0.428222u^{70} + 0.551187u^{69} + \cdots - 1698.21u + 280.659 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.479721u^{70} + 0.835639u^{69} + \cdots - 3127.86u + 850.474 \\ -0.541913u^{70} + 0.734975u^{69} + \cdots - 2349.21u + 422.606 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.938592u^{70} + 1.50603u^{69} + \cdots - 5382.41u + 1348.55 \\ -0.428222u^{70} + 0.551187u^{69} + \cdots - 1698.21u + 280.659 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.553572u^{70} - 0.765321u^{69} + \cdots + 2500.77u - 485.024 \\ 0.500931u^{70} - 0.690180u^{69} + \cdots + 2222.19u - 412.967 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.0335810u^{70} + 0.118905u^{69} + \cdots - 557.136u + 207.295 \\ 0.242484u^{70} - 0.321369u^{69} + \cdots + 1009.04u - 176.830 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.276065u^{70} - 0.440274u^{69} + \cdots + 1566.18u - 384.125 \\ 0.242484u^{70} - 0.321369u^{69} + \cdots + 1009.04u - 176.830 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.276065u^{70} - 0.440274u^{69} + \cdots + 1566.18u - 384.125 \\ 0.192358u^{70} - 0.245562u^{69} + \cdots + 749.492u - 119.559 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.307087u^{70} + 0.617884u^{69} + \cdots - 2458.59u + 752.034 \\ -0.192358u^{70} + 0.245562u^{69} + \cdots - 749.492u + 119.559 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 2.22925u^{70} - 3.84779u^{69} + \cdots + 14361.8u - 3919.67$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{71} + 27u^{70} + \cdots + 121u + 1$
c_2, c_4	$u^{71} - 11u^{70} + \cdots + 17u - 1$
c_3, c_7	$u^{71} - 2u^{70} + \cdots - 3584u + 512$
c_5	$17(17u^{71} + 58u^{70} + \cdots - 338322u - 76541)$
c_6, c_9	$u^{71} - 3u^{70} + \cdots - 3u + 1$
c_8	$17(17u^{71} - 28u^{70} + \cdots - 3303678u - 843836)$
c_{10}, c_{12}	$u^{71} + 7u^{70} + \cdots + 1199u + 289$
c_{11}	$u^{71} - 2u^{70} + \cdots - 33184u - 9248$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{71} + 45y^{70} + \cdots + 15729y - 1$
c_2, c_4	$y^{71} - 27y^{70} + \cdots + 121y - 1$
c_3, c_7	$y^{71} - 54y^{70} + \cdots + 10485760y - 262144$
c_5	$289(289y^{71} - 11218y^{70} + \cdots + 5.96694 \times 10^{10}y - 5.85852 \times 10^{9})$
c_6, c_9	$y^{71} + 49y^{70} + \cdots + 41y - 1$
c_8	$289 \cdot (289y^{71} - 16424y^{70} + \cdots + 1192944884236y - 712059194896)$
c_{10}, c_{12}	$y^{71} - 63y^{70} + \cdots + 1811567y - 83521$
c_{11}	$y^{71} - 30y^{70} + \cdots + 374507008y - 85525504$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.076693 + 0.947370I$ $a = -0.691781 - 0.148799I$ $b = -1.37182 + 0.60834I$	$1.59411 - 4.42837I$	0
$u = 0.076693 - 0.947370I$ $a = -0.691781 + 0.148799I$ $b = -1.37182 - 0.60834I$	$1.59411 + 4.42837I$	0
$u = -0.220480 + 0.816559I$ $a = 0.463726 + 0.218399I$ $b = 0.558026 + 0.462831I$	$-1.56511 + 1.33089I$	$-4.35474 - 3.35992I$
$u = -0.220480 - 0.816559I$ $a = 0.463726 - 0.218399I$ $b = 0.558026 - 0.462831I$	$-1.56511 - 1.33089I$	$-4.35474 + 3.35992I$
$u = 0.145194 + 0.788536I$ $a = -0.516702 + 1.147430I$ $b = -0.761187 - 0.160663I$	$1.32199 + 0.86803I$	$2.81463 + 0.68879I$
$u = 0.145194 - 0.788536I$ $a = -0.516702 - 1.147430I$ $b = -0.761187 + 0.160663I$	$1.32199 - 0.86803I$	$2.81463 - 0.68879I$
$u = -0.487435 + 1.128170I$ $a = 0.0239672 - 0.0816915I$ $b = 0.080432 + 0.375354I$	$-4.36546 - 4.32846I$	0
$u = -0.487435 - 1.128170I$ $a = 0.0239672 + 0.0816915I$ $b = 0.080432 - 0.375354I$	$-4.36546 + 4.32846I$	0
$u = 0.439418 + 0.621478I$ $a = 0.206543 + 0.342654I$ $b = -0.047968 - 0.545007I$	$0.12984 + 1.53500I$	$0.43134 - 4.26020I$
$u = 0.439418 - 0.621478I$ $a = 0.206543 - 0.342654I$ $b = -0.047968 + 0.545007I$	$0.12984 - 1.53500I$	$0.43134 + 4.26020I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.182323 + 0.721295I$ $a = 0.56676 - 2.11337I$ $b = 0.74195 - 1.33427I$	$4.92838 + 1.62527I$	$9.65649 - 3.98384I$
$u = 0.182323 - 0.721295I$ $a = 0.56676 + 2.11337I$ $b = 0.74195 + 1.33427I$	$4.92838 - 1.62527I$	$9.65649 + 3.98384I$
$u = 0.738712 + 0.025801I$ $a = -2.84205 + 2.51257I$ $b = 0.986916 - 0.482298I$	$0.03593 - 2.58057I$	$5.84465 + 3.57644I$
$u = 0.738712 - 0.025801I$ $a = -2.84205 - 2.51257I$ $b = 0.986916 + 0.482298I$	$0.03593 + 2.58057I$	$5.84465 - 3.57644I$
$u = -0.642897 + 0.339317I$ $a = 1.63273 - 0.52748I$ $b = -0.210241 + 0.516302I$	$-2.40004 + 0.50009I$	$-3.16242 + 1.54853I$
$u = -0.642897 - 0.339317I$ $a = 1.63273 + 0.52748I$ $b = -0.210241 - 0.516302I$	$-2.40004 - 0.50009I$	$-3.16242 - 1.54853I$
$u = -1.323750 + 0.085283I$ $a = -1.90895 + 0.72230I$ $b = 0.663197 - 0.063213I$	$5.87495 - 2.45786I$	0
$u = -1.323750 - 0.085283I$ $a = -1.90895 - 0.72230I$ $b = 0.663197 + 0.063213I$	$5.87495 + 2.45786I$	0
$u = -0.004372 + 0.661805I$ $a = 1.40629 - 2.21793I$ $b = -0.395556 - 0.414217I$	$0.982639 - 0.712583I$	$1.26468 - 3.38200I$
$u = -0.004372 - 0.661805I$ $a = 1.40629 + 2.21793I$ $b = -0.395556 + 0.414217I$	$0.982639 + 0.712583I$	$1.26468 + 3.38200I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.354200 + 0.058471I$ $a = 1.169270 + 0.041829I$ $b = -1.151030 - 0.496491I$	$3.26913 + 0.37177I$	0
$u = 1.354200 - 0.058471I$ $a = 1.169270 - 0.041829I$ $b = -1.151030 + 0.496491I$	$3.26913 - 0.37177I$	0
$u = 0.641537 + 0.013263I$ $a = -0.215156 + 0.261484I$ $b = -0.477396 - 1.105930I$	$-0.01259 + 2.24943I$	$5.94216 - 1.24752I$
$u = 0.641537 - 0.013263I$ $a = -0.215156 - 0.261484I$ $b = -0.477396 + 1.105930I$	$-0.01259 - 2.24943I$	$5.94216 + 1.24752I$
$u = -0.637235 + 0.065847I$ $a = 0.146928 + 0.026378I$ $b = -0.083520 + 1.139150I$	$-2.82440 - 2.46359I$	$4.30273 + 6.24454I$
$u = -0.637235 - 0.065847I$ $a = 0.146928 - 0.026378I$ $b = -0.083520 - 1.139150I$	$-2.82440 + 2.46359I$	$4.30273 - 6.24454I$
$u = 1.334450 + 0.351523I$ $a = -1.13740 + 0.91626I$ $b = 0.663249 + 0.125810I$	$5.32732 + 3.31503I$	0
$u = 1.334450 - 0.351523I$ $a = -1.13740 - 0.91626I$ $b = 0.663249 - 0.125810I$	$5.32732 - 3.31503I$	0
$u = 1.392010 + 0.087028I$ $a = 1.235080 - 0.640698I$ $b = -1.231910 + 0.578737I$	$5.60335 - 6.26016I$	0
$u = 1.392010 - 0.087028I$ $a = 1.235080 + 0.640698I$ $b = -1.231910 - 0.578737I$	$5.60335 + 6.26016I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.426783 + 0.400297I$ $a = 4.22729 + 5.26355I$ $b = -0.290627 + 0.848259I$	$2.71880 + 0.77171I$	$-0.03938 + 7.34337I$
$u = -0.426783 - 0.400297I$ $a = 4.22729 - 5.26355I$ $b = -0.290627 - 0.848259I$	$2.71880 - 0.77171I$	$-0.03938 - 7.34337I$
$u = 0.557977 + 0.073436I$ $a = -0.051806 + 0.142442I$ $b = 0.646310 + 1.044790I$	$2.38069 + 7.27157I$	$12.6640 - 9.5899I$
$u = 0.557977 - 0.073436I$ $a = -0.051806 - 0.142442I$ $b = 0.646310 - 1.044790I$	$2.38069 - 7.27157I$	$12.6640 + 9.5899I$
$u = -1.43718 + 0.15590I$ $a = -0.944374 - 0.509182I$ $b = 0.480613 - 0.961739I$	$6.20644 - 1.78085I$	0
$u = -1.43718 - 0.15590I$ $a = -0.944374 + 0.509182I$ $b = 0.480613 + 0.961739I$	$6.20644 + 1.78085I$	0
$u = -1.37199 + 0.46590I$ $a = 1.173090 + 0.216321I$ $b = -1.073480 + 0.872449I$	$2.23860 - 6.33244I$	0
$u = -1.37199 - 0.46590I$ $a = 1.173090 - 0.216321I$ $b = -1.073480 - 0.872449I$	$2.23860 + 6.33244I$	0
$u = 0.16002 + 1.45030I$ $a = -0.0471063 - 0.1086940I$ $b = 1.33837 - 0.76483I$	$7.57456 - 9.33161I$	0
$u = 0.16002 - 1.45030I$ $a = -0.0471063 + 0.1086940I$ $b = 1.33837 + 0.76483I$	$7.57456 + 9.33161I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.44190 + 0.27798I$ $a = -0.928627 - 0.073907I$ $b = 0.768169 - 0.880679I$	$5.97359 + 4.40312I$	0
$u = 1.44190 - 0.27798I$ $a = -0.928627 + 0.073907I$ $b = 0.768169 + 0.880679I$	$5.97359 - 4.40312I$	0
$u = -1.47168 + 0.09988I$ $a = -1.48841 + 0.33110I$ $b = 2.07259 - 0.81942I$	$7.18645 - 3.56652I$	0
$u = -1.47168 - 0.09988I$ $a = -1.48841 - 0.33110I$ $b = 2.07259 + 0.81942I$	$7.18645 + 3.56652I$	0
$u = -0.420831 + 0.275485I$ $a = -0.74354 - 2.33627I$ $b = 1.032730 - 0.604659I$	$4.35121 + 1.59493I$	$10.43394 - 0.97479I$
$u = -0.420831 - 0.275485I$ $a = -0.74354 + 2.33627I$ $b = 1.032730 + 0.604659I$	$4.35121 - 1.59493I$	$10.43394 + 0.97479I$
$u = 0.30543 + 1.48272I$ $a = -0.0549019 + 0.1030280I$ $b = 1.245940 + 0.346093I$	$7.30098 + 3.05381I$	0
$u = 0.30543 - 1.48272I$ $a = -0.0549019 - 0.1030280I$ $b = 1.245940 - 0.346093I$	$7.30098 - 3.05381I$	0
$u = -1.51898$ $a = -0.897992$ $b = 0.945902$	0.852763	0
$u = 1.45011 + 0.48802I$ $a = -1.53939 + 0.17087I$ $b = 1.89726 + 1.26956I$	$6.09358 + 9.90312I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.45011 - 0.48802I$ $a = -1.53939 - 0.17087I$ $b = 1.89726 - 1.26956I$	$6.09358 - 9.90312I$	0
$u = 1.55039 + 0.12499I$ $a = 1.120780 + 0.568665I$ $b = -1.42403 - 2.23704I$	$11.13970 + 0.68264I$	0
$u = 1.55039 - 0.12499I$ $a = 1.120780 - 0.568665I$ $b = -1.42403 + 2.23704I$	$11.13970 - 0.68264I$	0
$u = -0.18896 + 1.55398I$ $a = 0.0798087 + 0.0002794I$ $b = -1.030510 - 0.264735I$	$2.79580 + 3.31170I$	0
$u = -0.18896 - 1.55398I$ $a = 0.0798087 - 0.0002794I$ $b = -1.030510 + 0.264735I$	$2.79580 - 3.31170I$	0
$u = -1.53761 + 0.31028I$ $a = 0.757396 + 0.910802I$ $b = -1.86995 - 1.88969I$	$10.80380 - 5.89219I$	0
$u = -1.53761 - 0.31028I$ $a = 0.757396 - 0.910802I$ $b = -1.86995 + 1.88969I$	$10.80380 + 5.89219I$	0
$u = 1.50255 + 0.73985I$ $a = 1.331380 - 0.402936I$ $b = -1.43302 - 1.19081I$	$11.7776 + 17.0387I$	0
$u = 1.50255 - 0.73985I$ $a = 1.331380 + 0.402936I$ $b = -1.43302 + 1.19081I$	$11.7776 - 17.0387I$	0
$u = 0.310196$ $a = -11.7418$ $b = 0.360541$	-0.278739	56.4200

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.297760$ $a = 2.27908$ $b = -0.569710$	1.11352	9.05470
$u = -1.53644 + 0.75409I$ $a = -1.045060 - 0.283594I$ $b = 1.17961 - 0.86678I$	$7.10450 - 11.36750I$	0
$u = -1.53644 - 0.75409I$ $a = -1.045060 + 0.283594I$ $b = 1.17961 + 0.86678I$	$7.10450 + 11.36750I$	0
$u = -1.66767 + 0.47111I$ $a = 1.258780 + 0.087385I$ $b = -1.54465 + 0.98213I$	$13.8741 - 10.1106I$	0
$u = -1.66767 - 0.47111I$ $a = 1.258780 - 0.087385I$ $b = -1.54465 - 0.98213I$	$13.8741 + 10.1106I$	0
$u = 1.52848 + 0.82309I$ $a = 0.679890 - 0.444350I$ $b = -1.200100 - 0.331040I$	$11.07870 + 5.15354I$	0
$u = 1.52848 - 0.82309I$ $a = 0.679890 + 0.444350I$ $b = -1.200100 + 0.331040I$	$11.07870 - 5.15354I$	0
$u = -1.68752 + 0.56968I$ $a = 0.767625 + 0.443423I$ $b = -1.41908 + 0.00115I$	$13.45460 + 1.92659I$	0
$u = -1.68752 - 0.56968I$ $a = 0.767625 - 0.443423I$ $b = -1.41908 - 0.00115I$	$13.45460 - 1.92659I$	0
$u = 1.71694 + 0.49452I$ $a = -0.955855 + 0.132868I$ $b = 1.292340 + 0.569757I$	$9.22845 + 4.28954I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.71694 - 0.49452I$ $a = -0.955855 - 0.132868I$ $b = 1.292340 - 0.569757I$	$9.22845 - 4.28954I$	0

II. $I_2^u = \langle b,\ 9u^4 - 4u^3 + 3u^2 + 17a - 18u + 1,\ u^5 + u^4 + 2u^3 + u^2 + u + 1\rangle$

(i) Arc colorings

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

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.529412u^4 + 0.235294u^3 + \cdots + 1.05882u - 0.0588235 \\ 0 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.131488u^4 + 0.463668u^3 + \cdots + 0.910035u + 0.854671 \\ -u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.529412u^4 + 0.235294u^3 + \cdots + 1.05882u - 0.0588235 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.0622837u^4 - 0.148789u^3 + \cdots - 0.463668u + 0.404844 \\ -u^4 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^2 + 1 \\ -u^4 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^4 - u^2 - 1 \\ -u^4 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^4 - u^2 - 1 \\ -u^4 + u^3 + u^2 + 1 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} 0.470588u^4 + 0.235294u^3 + \cdots + 1.05882u + 0.941176 \\ u^4 - u^3 - u^2 - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{1429}{289}u^4 + \frac{1471}{289}u^3 - \frac{1184}{289}u^2 + \frac{780}{289}u + \frac{2127}{289}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^5-5u^4+8u^3-3u^2-u-1$
c_2	$u^5+u^4-2u^3-u^2+u-1$
c_3	$u^5-u^4+2u^3-u^2+u-1$
c_4	$u^5-u^4-2u^3+u^2+u+1$
c_5	$17(17u^5-32u^4+18u^3+u^2-4u+1)$
c_6	$u^5-3u^4+4u^3-u^2-u+1$
c_7	$u^5+u^4+2u^3+u^2+u+1$
c_8	$17(17u^5+42u^4+43u^3+22u^2+6u+1)$
c_9	$u^5+3u^4+4u^3+u^2-u-1$
c_{10}	$(u+1)^5$
c_{11}	u^5
c_{12}	$(u-1)^5$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^5 - 9y^4 + 32y^3 - 35y^2 - 5y - 1$
c_2, c_4	$y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1$
c_3, c_7	$y^5 + 3y^4 + 4y^3 + y^2 - y - 1$
c_5	$289(289y^5 - 412y^4 + 252y^3 - 81y^2 + 14y - 1)$
c_6, c_9	$y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1$
c_8	$289(289y^5 - 302y^4 + 205y^3 - 52y^2 - 8y - 1)$
c_{10}, c_{12}	$(y-1)^5$
c_{11}	y^5

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.339110 + 0.822375I$ $a = 0.244471 + 1.039700I$ $b = 0$	$1.31583 + 1.53058I$	$7.29086 - 4.54835I$
$u = 0.339110 - 0.822375I$ $a = 0.244471 - 1.039700I$ $b = 0$	$1.31583 - 1.53058I$	$7.29086 + 4.54835I$
$u = -0.766826$ $a = -1.26368$ $b = 0$	-0.756147	2.29580
$u = -0.455697 + 1.200150I$ $a = -0.053809 - 0.194708I$ $b = 0$	$-4.22763 - 4.40083I$	$22.3190 + 16.0614I$
$u = -0.455697 - 1.200150I$ $a = -0.053809 + 0.194708I$ $b = 0$	$-4.22763 + 4.40083I$	$22.3190 - 16.0614I$

III.

$I_1^v = \langle a,\ 16726v^8 - 41423v^7 + \cdots + 11959b + 26601,\ v^9 - 3v^8 + \cdots + 3v - 1\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ -1.39861v^8 + 3.46375v^7 + \cdots + 3.94598v - 2.22435 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 1.45213v^8 - 3.82515v^7 + \cdots - 3.73944v + 4.14098 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -1.39861v^8 + 3.46375v^7 + \cdots + 3.94598v - 2.22435 \\ -1.39861v^8 + 3.46375v^7 + \cdots + 3.94598v - 2.22435 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -1.45213v^8 + 3.82515v^7 + \cdots + 3.73944v - 3.14098 \\ -1.21114v^8 + 2.94147v^7 + \cdots + 5.63826v - 2.00702 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.759010v^8 - 2.11631v^7 + \cdots + 0.101179v + 1.86604 \\ v^8 - 3v^7 - 2v^6 - 6v^5 + 25v^4 - 11v^3 - 9v^2 + 2v + 3 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.759010v^8 + 2.11631v^7 + \cdots + 0.898821v - 1.86604 \\ -v^8 + 3v^7 + 2v^6 + 6v^5 - 25v^4 + 11v^3 + 9v^2 - 2v - 3 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.759010v^8 + 2.11631v^7 + \cdots - 0.101179v - 1.86604 \\ -v^8 + 3v^7 + 2v^6 + 6v^5 - 25v^4 + 11v^3 + 9v^2 - 2v - 3 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.240990v^8 + 0.883686v^7 + \cdots - 1.89882v - 1.13396 \\ -v^8 + 3v^7 + 2v^6 + 6v^5 - 25v^4 + 11v^3 + 9v^2 - 2v - 3 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= \frac{38011}{11959}v^8 - \frac{103132}{11959}v^7 - \frac{110061}{11959}v^6 - \frac{250712}{11959}v^5 + \frac{892353}{11959}v^4 - \frac{104528}{11959}v^3 - \frac{444297}{11959}v^2 - \frac{43711}{11959}v + \frac{44549}{11959}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u-1)^9$
c_3, c_7	u^9
c_4	$(u+1)^9$
c_5	$u^9+5u^8+12u^7+15u^6+9u^5-u^4-4u^3-2u^2+u+1$
c_6	$u^9-3u^8+8u^7-13u^6+17u^5-17u^4+12u^3-6u^2+u+1$
c_8	$u^9-u^8+2u^7-u^6+3u^5-u^4+2u^3+u+1$
c_9	$u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1$
c_{10}	$u^9-u^8-2u^7+3u^6+u^5-3u^4+2u^3-u+1$
c_{11}	$u^9+u^8+2u^7+u^6+3u^5+u^4+2u^3+u-1$
c_{12}	$u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^9$
c_3, c_7	y^9
c_5	$y^9 - y^8 + 12y^7 - 7y^6 + 37y^5 + y^4 - 10y^2 + 5y - 1$
c_6, c_9	$y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1$
c_8, c_{11}	$y^9 + 3y^8 + 8y^7 + 13y^6 + 17y^5 + 17y^4 + 12y^3 + 6y^2 + y - 1$
c_{10}, c_{12}	$y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 1.022450 + 0.246780I$ $a = 0$ $b = -0.628449 + 0.875112I$	$-1.02799 - 2.45442I$	$-3.46097 + 2.82066I$
$v = 1.022450 - 0.246780I$ $a = 0$ $b = -0.628449 - 0.875112I$	$-1.02799 + 2.45442I$	$-3.46097 - 2.82066I$
$v = -0.483566 + 0.305056I$ $a = 0$ $b = -0.140343 + 0.966856I$	$-3.42837 - 2.09337I$	$-5.97316 + 1.69698I$
$v = -0.483566 - 0.305056I$ $a = 0$ $b = -0.140343 - 0.966856I$	$-3.42837 + 2.09337I$	$-5.97316 - 1.69698I$
$v = 0.411691 + 0.129409I$ $a = 0$ $b = 0.728966 + 0.986295I$	$1.95319 + 7.08493I$	$-2.97979 - 2.94778I$
$v = 0.411691 - 0.129409I$ $a = 0$ $b = 0.728966 - 0.986295I$	$1.95319 - 7.08493I$	$-2.97979 + 2.94778I$
$v = -1.23246 + 1.62704I$ $a = 0$ $b = 0.796005 + 0.733148I$	$2.72642 - 1.33617I$	$4.47739 + 4.48124I$
$v = -1.23246 - 1.62704I$ $a = 0$ $b = 0.796005 - 0.733148I$	$2.72642 + 1.33617I$	$4.47739 - 4.48124I$
$v = 3.56378$ $a = 0$ $b = -0.512358$	-0.446489	-8.12690

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^9)(u^5-5u^4+\cdots-u-1)(u^{71}+27u^{70}+\cdots+121u+1)$
c_2	$((u-1)^9)(u^5+u^4+\cdots+u-1)(u^{71}-11u^{70}+\cdots+17u-1)$
c_3	$u^9(u^5-u^4+\cdots+u-1)(u^{71}-2u^{70}+\cdots-3584u+512)$
c_4	$((u+1)^9)(u^5-u^4+\cdots+u+1)(u^{71}-11u^{70}+\cdots+17u-1)$
c_5	$289(17u^5-32u^4+18u^3+u^2-4u+1)$ $\cdot(u^9+5u^8+12u^7+15u^6+9u^5-u^4-4u^3-2u^2+u+1)$ $\cdot(17u^{71}+58u^{70}+\cdots-338322u-76541)$
c_6	$(u^5-3u^4+4u^3-u^2-u+1)$ $\cdot(u^9-3u^8+8u^7-13u^6+17u^5-17u^4+12u^3-6u^2+u+1)$ $\cdot(u^{71}-3u^{70}+\cdots-3u+1)$
c_7	$u^9(u^5+u^4+\cdots+u+1)(u^{71}-2u^{70}+\cdots-3584u+512)$
c_8	$289(17u^5+42u^4+43u^3+22u^2+6u+1)$ $\cdot(u^9-u^8+2u^7-u^6+3u^5-u^4+2u^3+u+1)$ $\cdot(17u^{71}-28u^{70}+\cdots-3303678u-843836)$
c_9	$(u^5+3u^4+4u^3+u^2-u-1)$ $\cdot(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)$ $\cdot(u^{71}-3u^{70}+\cdots-3u+1)$
c_{10}	$(u+1)^5(u^9-u^8-2u^7+3u^6+u^5-3u^4+2u^3-u+1)$ $\cdot(u^{71}+7u^{70}+\cdots+1199u+289)$
c_{11}	$u^5(u^9+u^8+2u^7+u^6+3u^5+u^4+2u^3+u-1)$ $\cdot(u^{71}-2u^{70}+\cdots-33184u-9248)$
c_{12}	$(u-1)^5(u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1)$ $\cdot(u^{71}+7u^{70}+\cdots+1199u+289)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^9(y^5-9y^4+32y^3-35y^2-5y-1)$ $\cdot(y^{71}+45y^{70}+\cdots+15729y-1)$
c_2, c_4	$((y-1)^9)(y^5-5y^4+\cdots-y-1)(y^{71}-27y^{70}+\cdots+121y-1)$
c_3, c_7	$y^9(y^5+3y^4+4y^3+y^2-y-1)$ $\cdot(y^{71}-54y^{70}+\cdots+10485760y-262144)$
c_5	$83521(289y^5-412y^4+252y^3-81y^2+14y-1)$ $\cdot(y^9-y^8+12y^7-7y^6+37y^5+y^4-10y^2+5y-1)$ $\cdot(289y^{71}-11218y^{70}+\cdots+59669441588y-5858524681)$
c_6, c_9	$(y^5-y^4+8y^3-3y^2+3y-1)$ $\cdot(y^9+7y^8+20y^7+25y^6+5y^5-15y^4+22y^2+13y-1)$ $\cdot(y^{71}+49y^{70}+\cdots+41y-1)$
c_8	$83521(289y^5-302y^4+205y^3-52y^2-8y-1)$ $\cdot(y^9+3y^8+8y^7+13y^6+17y^5+17y^4+12y^3+6y^2+y-1)$ $\cdot(289y^{71}-16424y^{70}+\cdots+1192944884236y-712059194896)$
c_{10}, c_{12}	$(y-1)^5(y^9-5y^8+12y^7-15y^6+9y^5+y^4-4y^3+2y^2+y-1)$ $\cdot(y^{71}-63y^{70}+\cdots+1811567y-83521)$
c_{11}	$y^5(y^9+3y^8+8y^7+13y^6+17y^5+17y^4+12y^3+6y^2+y-1)$ $\cdot(y^{71}-30y^{70}+\cdots+374507008y-85525504)$