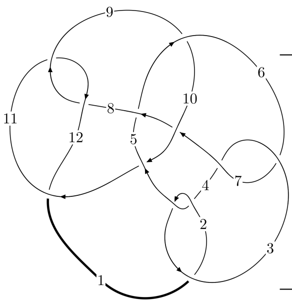
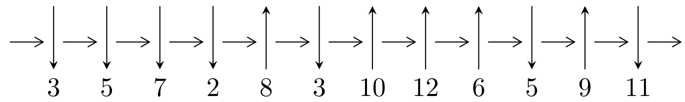
$12n_{0127}$ ($K12n_{0127}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$
\begin{aligned}
I^u_1 = \langle & 5.41187 \times 10^{277} u^{67} - 3.29717 \times 10^{278} u^{66} + \cdots + 7.63032 \times 10^{279} b + 2.06591 \times 10^{280}, \\
& 1.99190 \times 10^{278} u^{67} - 1.24347 \times 10^{279} u^{66} + \cdots + 1.41959 \times 10^{279} a + 5.26734 \times 10^{280}, \\
& u^{68} - 6u^{67} + \cdots + 992u + 64 \rangle \\
I^u_2 = \langle & u^8 - 3u^6 + u^5 + 4u^4 - 2u^3 - u^2 + b + 2u - 1,\ -u^8 + 2u^7 + 2u^6 - 5u^5 - u^4 + 5u^3 - u^2 + a, \\
& u^9 - u^8 - 2u^7 + 3u^6 + u^5 - 3u^4 + 2u^3 - u + 1 \rangle
\end{aligned}
$$

$$
I^v_1 = \langle a,\ -186v^5 + 1767v^4 - 16759v^3 + 279v^2 + 385b - 93v + 306,\ v^6 - 10v^5 + 95v^4 - 48v^3 + 15v^2 - 5v + 1 \rangle
$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 83 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. $\boldsymbol{I_1^u = \langle 5.41\times 10^{277}u^{67} - 3.30\times 10^{278}u^{66} + \cdots + 7.63\times 10^{279}b + 2.07\times 10^{280},\ 1.99\times 10^{278}u^{67} - 1.24\times 10^{279}u^{66} + \cdots + 1.42\times 10^{279}a + 5.27\times 10^{280},\ u^{68} - 6u^{67} + \cdots + 992u + 64\rangle}$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -0.140315u^{67} + 0.875931u^{66} + \cdots - 399.413u - 37.1045 \\ -0.00709259u^{67} + 0.0432114u^{66} + \cdots - 24.8919u - 2.70750 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.140548u^{67} + 0.877681u^{66} + \cdots - 399.309u - 36.5756 \\ -0.00717314u^{67} + 0.0436428u^{66} + \cdots - 25.2257u - 2.73000 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.0867373u^{67} + 0.540807u^{66} + \cdots - 250.013u - 21.8923 \\ -0.00337015u^{67} + 0.0205084u^{66} + \cdots - 14.4347u - 1.57057 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.0833671u^{67} + 0.520298u^{66} + \cdots - 235.578u - 20.3217 \\ -0.00337015u^{67} + 0.0205084u^{66} + \cdots - 14.4347u - 1.57057 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.118608u^{67} + 0.755698u^{66} + \cdots - 203.655u - 6.99277 \\ -0.00539155u^{67} + 0.0336077u^{66} + \cdots - 12.9981u - 0.898136 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.0830107u^{67} + 0.517632u^{66} + \cdots - 243.251u - 23.6948 \\ -0.00363676u^{67} + 0.0222357u^{66} + \cdots - 13.9337u - 1.53678 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.0181153u^{67} + 0.110616u^{66} + \cdots - 71.0211u - 7.16788 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.128840u^{67} + 0.819695u^{66} + \cdots - 230.862u - 8.73309 \\ -0.00484013u^{67} + 0.0303889u^{66} + \cdots - 12.2087u - 0.842183 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.126251u^{67} - 0.763024u^{66} + \cdots + 580.255u + 57.9332 \\ 0.000316220u^{67} - 0.00143516u^{66} + \cdots + 6.38612u + 0.783678 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.416483u^{67} + 2.60331u^{66} + \cdots - 1160.89u - 97.1731$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{68} + 72u^{67} + \cdots - 116u + 1$
c_2, c_4	$u^{68} - 12u^{67} + \cdots + 4u - 1$
c_3, c_6	$u^{68} + 3u^{67} + \cdots + 2048u + 512$
c_5	$u^{68} + 4u^{67} + \cdots + 20u^2 - 1$
c_7	$u^{68} + 6u^{67} + \cdots - 992u + 64$
c_8, c_{11}	$u^{68} + 5u^{67} + \cdots - 61u + 1$
c_9	$u^{68} - 4u^{67} + \cdots - 1569175u - 179693$
c_{10}	$u^{68} - 8u^{67} + \cdots - 679u + 1423$
c_{12}	$u^{68} + 33u^{67} + \cdots - 4365u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{68} - 140y^{67} + \cdots + 13088y + 1$
c_2, c_4	$y^{68} - 72y^{67} + \cdots + 116y + 1$
c_3, c_6	$y^{68} - 51y^{67} + \cdots - 1048576y + 262144$
c_5	$y^{68} - 16y^{67} + \cdots - 40y + 1$
c_7	$y^{68} + 30y^{67} + \cdots - 332800y + 4096$
c_8, c_{11}	$y^{68} + 33y^{67} + \cdots - 4365y + 1$
c_9	$y^{68} - 20y^{67} + \cdots - 70781434415y + 32289574249$
c_{10}	$y^{68} - 68y^{67} + \cdots + 88237y + 2024929$
c_{12}	$y^{68} + 9y^{67} + \cdots - 19115909y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.950113 + 0.315579I$ $a = 0.548757 - 0.167876I$ $b = 0.776522 - 0.767567I$	$1.45198 - 0.17538I$	0
$u = -0.950113 - 0.315579I$ $a = 0.548757 + 0.167876I$ $b = 0.776522 + 0.767567I$	$1.45198 + 0.17538I$	0
$u = -0.138014 + 0.941313I$ $a = -1.52735 - 0.38576I$ $b = -0.026016 + 0.803652I$	$-1.98118 - 0.16998I$	0
$u = -0.138014 - 0.941313I$ $a = -1.52735 + 0.38576I$ $b = -0.026016 - 0.803652I$	$-1.98118 + 0.16998I$	0
$u = -0.985804 + 0.387544I$ $a = 0.0078436 - 0.0769643I$ $b = -0.113466 - 0.711289I$	$3.23957 - 1.57241I$	0
$u = -0.985804 - 0.387544I$ $a = 0.0078436 + 0.0769643I$ $b = -0.113466 + 0.711289I$	$3.23957 + 1.57241I$	0
$u = 0.654795 + 0.664515I$ $a = -0.052917 - 0.398943I$ $b = 0.109744 + 0.545343I$	$-1.99133 + 1.66625I$	$0. - 3.30828I$
$u = 0.654795 - 0.664515I$ $a = -0.052917 + 0.398943I$ $b = 0.109744 - 0.545343I$	$-1.99133 - 1.66625I$	$0. + 3.30828I$
$u = 0.918521 + 0.022770I$ $a = -0.80746 - 3.11284I$ $b = -0.45158 - 1.99901I$	$-2.78363 - 2.76140I$	$0. + 6.78295I$
$u = 0.918521 - 0.022770I$ $a = -0.80746 + 3.11284I$ $b = -0.45158 + 1.99901I$	$-2.78363 + 2.76140I$	$0. - 6.78295I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.618022 + 0.678734I$ $a = 0.34805 + 1.72657I$ $b = -0.0123186 + 0.1252700I$	$-7.66872 + 1.43842I$	$-12.36030 + 0.I$
$u = 0.618022 - 0.678734I$ $a = 0.34805 - 1.72657I$ $b = -0.0123186 - 0.1252700I$	$-7.66872 - 1.43842I$	$-12.36030 + 0.I$
$u = -0.833182 + 0.382913I$ $a = -1.22956 - 1.32718I$ $b = 0.0823456 - 0.0914731I$	$-9.13954 + 3.03771I$	$-6.42466 + 6.40081I$
$u = -0.833182 - 0.382913I$ $a = -1.22956 + 1.32718I$ $b = 0.0823456 + 0.0914731I$	$-9.13954 - 3.03771I$	$-6.42466 - 6.40081I$
$u = -0.343117 + 1.102390I$ $a = 1.62260 + 0.06591I$ $b = -1.11538 - 1.08043I$	$1.02080 - 2.73193I$	0
$u = -0.343117 - 1.102390I$ $a = 1.62260 - 0.06591I$ $b = -1.11538 + 1.08043I$	$1.02080 + 2.73193I$	0
$u = -0.091668 + 1.182840I$ $a = -1.058340 + 0.288071I$ $b = 0.110946 - 0.754708I$	$-5.18749 - 3.49319I$	0
$u = -0.091668 - 1.182840I$ $a = -1.058340 - 0.288071I$ $b = 0.110946 + 0.754708I$	$-5.18749 + 3.49319I$	0
$u = 1.058570 + 0.536792I$ $a = -0.0374936 + 0.0394319I$ $b = -0.072006 + 0.563424I$	$2.39963 + 7.06465I$	0
$u = 1.058570 - 0.536792I$ $a = -0.0374936 - 0.0394319I$ $b = -0.072006 - 0.563424I$	$2.39963 - 7.06465I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.291235 + 0.741989I$ $a = 1.43685 - 0.21711I$ $b = -0.423071 + 0.457603I$	$0.59153 - 2.55241I$	$2.37006 + 1.53670I$
$u = 0.291235 - 0.741989I$ $a = 1.43685 + 0.21711I$ $b = -0.423071 - 0.457603I$	$0.59153 + 2.55241I$	$2.37006 - 1.53670I$
$u = 0.284392 + 1.184020I$ $a = -1.348990 + 0.014290I$ $b = 0.066230 - 0.901010I$	$-4.78405 + 4.34186I$	0
$u = 0.284392 - 1.184020I$ $a = -1.348990 - 0.014290I$ $b = 0.066230 + 0.901010I$	$-4.78405 - 4.34186I$	0
$u = -0.378527 + 1.199800I$ $a = -0.185821 - 0.027577I$ $b = 0.08329 + 1.60214I$	$-3.90942 - 3.06813I$	0
$u = -0.378527 - 1.199800I$ $a = -0.185821 + 0.027577I$ $b = 0.08329 - 1.60214I$	$-3.90942 + 3.06813I$	0
$u = 0.618286 + 1.143470I$ $a = 0.941109 + 0.552542I$ $b = -0.161234 + 0.197997I$	$-9.06891 + 3.72651I$	0
$u = 0.618286 - 1.143470I$ $a = 0.941109 - 0.552542I$ $b = -0.161234 - 0.197997I$	$-9.06891 - 3.72651I$	0
$u = 1.215690 + 0.466052I$ $a = 0.729712 + 0.700660I$ $b = 0.98247 + 1.78974I$	$-1.26231 - 4.39904I$	0
$u = 1.215690 - 0.466052I$ $a = 0.729712 - 0.700660I$ $b = 0.98247 - 1.78974I$	$-1.26231 + 4.39904I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.533248+0.422514I$ $a=-3.12926+0.99004I$ $b=-0.520884+1.056390I$	$-1.175210-0.433161I$	$-4.73090+4.14534I$
$u=-0.533248-0.422514I$ $a=-3.12926-0.99004I$ $b=-0.520884-1.056390I$	$-1.175210+0.433161I$	$-4.73090-4.14534I$
$u=-0.395435+1.259920I$ $a=\ \ 1.202320-0.400059I$ $b=-0.210830-0.120552I$	$-13.78770-0.65730I$	0
$u=-0.395435-1.259920I$ $a=\ \ 1.202320+0.400059I$ $b=-0.210830+0.120552I$	$-13.78770+0.65730I$	0
$u=\ \ 0.195281+1.367220I$ $a=\ \ 0.161197+0.187003I$ $b=-0.03055-1.73074I$	$-8.15277-0.56922I$	0
$u=\ \ 0.195281-1.367220I$ $a=\ \ 0.161197-0.187003I$ $b=-0.03055+1.73074I$	$-8.15277+0.56922I$	0
$u=\ \ 0.501266+1.311640I$ $a=-0.032263-0.145766I$ $b=-0.00664-1.54510I$	$-6.75213+7.96693I$	0
$u=\ \ 0.501266-1.311640I$ $a=-0.032263+0.145766I$ $b=-0.00664+1.54510I$	$-6.75213-7.96693I$	0
$u=-0.651697+1.252300I$ $a=\ \ 1.368070-0.194338I$ $b=-0.50799-1.66891I$	$-1.42714-5.94125I$	0
$u=-0.651697-1.252300I$ $a=\ \ 1.368070+0.194338I$ $b=-0.50799+1.66891I$	$-1.42714+5.94125I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.443948+0.381193I$ $a=\ \ 0.023452-0.289831I$ $b=-0.092531-1.256890I$	$3.20421-1.15270I$	$2.54366+10.12386I$
$u=-0.443948-0.381193I$ $a=\ \ 0.023452+0.289831I$ $b=-0.092531+1.256890I$	$3.20421+1.15270I$	$2.54366-10.12386I$
$u=-0.68544+1.24203I$ $a=\ \ 0.920678-0.419746I$ $b=-0.202383-0.229028I$	$-11.5445-8.9372I$	0
$u=-0.68544-1.24203I$ $a=\ \ 0.920678+0.419746I$ $b=-0.202383+0.229028I$	$-11.5445+8.9372I$	0
$u=-0.047717+0.545973I$ $a=-0.040233+0.322065I$ $b=-0.19956+1.40398I$	$2.67134+4.86258I$	$-14.4423-3.8383I$
$u=-0.047717-0.545973I$ $a=-0.040233-0.322065I$ $b=-0.19956-1.40398I$	$2.67134-4.86258I$	$-14.4423+3.8383I$
$u=\ \ 0.53438+1.35483I$ $a=\ \ 1.200600+0.014989I$ $b=-0.49203+1.82310I$	$-6.53057+2.65488I$	0
$u=\ \ 0.53438-1.35483I$ $a=\ \ 1.200600-0.014989I$ $b=-0.49203-1.82310I$	$-6.53057-2.65488I$	0
$u=\ \ 0.477410+0.194259I$ $a=\ \ 3.46449-0.24479I$ $b=\ \ 0.066672+0.494530I$	$-1.07758+1.62874I$	$1.55460-6.14952I$
$u=\ \ 0.477410-0.194259I$ $a=\ \ 3.46449+0.24479I$ $b=\ \ 0.066672-0.494530I$	$-1.07758-1.62874I$	$1.55460+6.14952I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.72857 + 1.29465I$ $a = 1.294820 + 0.292927I$ $b = -0.44191 + 1.67576I$	$-4.00028 + 11.30660I$	0
$u = 0.72857 - 1.29465I$ $a = 1.294820 - 0.292927I$ $b = -0.44191 - 1.67576I$	$-4.00028 - 11.30660I$	0
$u = -0.199150 + 0.463613I$ $a = -5.65825 + 2.26682I$ $b = 0.979716 + 0.919145I$	$-1.11507 - 2.15821I$	$-17.5757 + 1.3433I$
$u = -0.199150 - 0.463613I$ $a = -5.65825 - 2.26682I$ $b = 0.979716 - 0.919145I$	$-1.11507 + 2.15821I$	$-17.5757 - 1.3433I$
$u = -0.207672 + 0.089139I$ $a = 11.0630 + 18.1211I$ $b = 0.455149 + 0.270879I$	$-1.10951 - 2.08005I$	$43.7323 + 52.4587I$
$u = -0.207672 - 0.089139I$ $a = 11.0630 - 18.1211I$ $b = 0.455149 - 0.270879I$	$-1.10951 + 2.08005I$	$43.7323 - 52.4587I$
$u = 1.06862 + 1.46334I$ $a = -1.083940 - 0.489279I$ $b = 1.02549 - 2.05791I$	$-10.9823 + 16.7933I$	0
$u = 1.06862 - 1.46334I$ $a = -1.083940 + 0.489279I$ $b = 1.02549 + 2.05791I$	$-10.9823 - 16.7933I$	0
$u = -1.00127 + 1.57480I$ $a = -1.057930 + 0.383092I$ $b = 1.22819 + 2.06366I$	$-8.36607 - 10.64720I$	0
$u = -1.00127 - 1.57480I$ $a = -1.057930 - 0.383092I$ $b = 1.22819 - 2.06366I$	$-8.36607 + 10.64720I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.122992$ $a=-7.00758$ $b=-0.657961$	-1.12640	-9.50710
$u=\ 1.18225+1.81842I$ $a=-0.873443-0.339937I$ $b=\ 1.41202-2.62610I$	$-14.9486+6.6050I$	0
$u=\ 1.18225-1.81842I$ $a=-0.873443+0.339937I$ $b=\ 1.41202+2.62610I$	$-14.9486-6.6050I$	0
$u=\ 2.21003+0.87540I$ $a=-0.404299-0.141048I$ $b=-2.64545-2.40849I$	$-8.52431-6.48393I$	0
$u=\ 2.21003-0.87540I$ $a=-0.404299+0.141048I$ $b=-2.64545+2.40849I$	$-8.52431+6.48393I$	0
$u=-2.40291$ $a=-0.382796$ $b=-3.59332$	-4.25382	0
$u=-0.40837+2.39079I$ $a=-0.860811+0.059303I$ $b=\ 3.47268+1.22842I$	$-5.26056-3.80306I$	0
$u=-0.40837-2.39079I$ $a=-0.860811-0.059303I$ $b=\ 3.47268-1.22842I$	$-5.26056+3.80306I$	0

II. $\boldsymbol{I^u_2 = \langle u^8 - 3u^6 + u^5 + 4u^4 - 2u^3 - u^2 + b + 2u - 1,\ -u^8 + 2u^7 + 2u^6 - 5u^5 - u^4 + 5u^3 - u^2 + a,\ u^9 - u^8 - 2u^7 + 3u^6 + u^5 - 3u^4 + 2u^3 - u + 1\rangle}$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} u^8 - 2u^7 - 2u^6 + 5u^5 + u^4 - 5u^3 + u^2 \\ -u^8 + 3u^6 - u^5 - 4u^4 + 2u^3 + u^2 - 2u + 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^8 - 2u^7 - 2u^6 + 5u^5 + u^4 - 5u^3 + u^2 \\ -u^8 + 3u^6 - u^5 - 4u^4 + 2u^3 + u^2 - 2u + 1 \end{pmatrix}$$

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

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

$$a_{11} = \begin{pmatrix} -u^5 + 2u^3 - u \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^8 - 2u^7 - 2u^6 + 5u^5 + u^4 - 5u^3 + 2u^2 - 1 \\ -u^8 + 3u^6 - u^5 - 4u^4 + 2u^3 - 2u + 1 \end{pmatrix}$$

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

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

$$a_{12} = \begin{pmatrix} u^8 - 3u^6 + 3u^4 - 1 \\ -u^8 + 2u^6 - 2u^4 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 5u^8 - 9u^7 - 7u^6 + 22u^5 - 2u^4 - 23u^3 + 13u^2 - u - 9$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u-1)^9$
c_3, c_6	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_7	$u^9 - u^8 - 2u^7 + 3u^6 + u^5 - 3u^4 + 2u^3 - u + 1$
c_8	$u^9 - u^8 + 2u^7 - u^6 + 3u^5 - u^4 + 2u^3 + u + 1$
c_9	$u^9 + u^8 - 2u^7 - 3u^6 + u^5 + 3u^4 + 2u^3 - u - 1$
c_{10}, c_{12}	$u^9 + 3u^8 + 8u^7 + 13u^6 + 17u^5 + 17u^4 + 12u^3 + 6u^2 + u - 1$
c_{11}	$u^9 + u^8 + 2u^7 + u^6 + 3u^5 + u^4 + 2u^3 + u - 1$

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.772920 + 0.510351I$ $a = -0.939568 - 0.981640I$ $b = 0.457852 - 1.072010I$	$-3.42837 + 2.09337I$	$-8.61953 - 2.85927I$
$u = 0.772920 - 0.510351I$ $a = -0.939568 + 0.981640I$ $b = 0.457852 + 1.072010I$	$-3.42837 - 2.09337I$	$-8.61953 + 2.85927I$
$u = -0.825933$ $a = 2.14893$ $b = 1.46592$	-0.446489	5.48680
$u = -1.173910 + 0.391555I$ $a = 0.119081 + 0.409451I$ $b = 0.522253 + 0.392004I$	$2.72642 - 1.33617I$	$-5.51122 - 2.15019I$
$u = -1.173910 - 0.391555I$ $a = 0.119081 - 0.409451I$ $b = 0.522253 - 0.392004I$	$2.72642 + 1.33617I$	$-5.51122 + 2.15019I$
$u = 0.141484 + 0.739668I$ $a = 2.26219 + 2.13290I$ $b = -1.63880 - 0.65075I$	$-1.02799 - 2.45442I$	$-5.09778 + 12.45976I$
$u = 0.141484 - 0.739668I$ $a = 2.26219 - 2.13290I$ $b = -1.63880 + 0.65075I$	$-1.02799 + 2.45442I$	$-5.09778 - 12.45976I$
$u = 1.172470 + 0.500383I$ $a = -0.016164 - 0.378317I$ $b = 0.425734 - 0.444312I$	$1.95319 + 7.08493I$	$-9.51486 - 6.49599I$
$u = 1.172470 - 0.500383I$ $a = -0.016164 + 0.378317I$ $b = 0.425734 + 0.444312I$	$1.95319 - 7.08493I$	$-9.51486 + 6.49599I$

III. $\boldsymbol{I_1^v =}$
$\boldsymbol{\langle a,\ -186v^5+1767v^4+\cdots+385b+306,\ v^6-10v^5+95v^4-48v^3+15v^2-5v+1\rangle}$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 0 \\ 0.483117v^5 - 4.58961v^4 + \cdots + 0.241558v - 0.794805 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -0.483117v^5 + 4.58961v^4 + \cdots - 0.241558v + 0.794805 \\ 0.483117v^5 - 4.58961v^4 + \cdots + 0.241558v - 0.794805 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ 0.207792v^5 - 1.97403v^4 + \cdots + 0.103896v + 1.41299 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.207792v^5 + 1.97403v^4 + \cdots - 0.103896v - 0.412987 \\ 0.207792v^5 - 1.97403v^4 + \cdots + 0.103896v + 1.41299 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.241558v^5 + 2.36623v^4 + \cdots - 1.62078v + 0.483117 \\ 0.345455v^5 - 3.38182v^4 + \cdots + 5.07273v - 0.690909 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -1 \\ 0.207792v^5 - 1.97403v^4 + \cdots + 0.103896v + 1.41299 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} 0.103896v^5 - 1.01558v^4 + \cdots + 3.45195v - 0.207792 \\ 0.345455v^5 - 3.38182v^4 + \cdots + 5.07273v - 0.690909 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.101299v^5 + 1.03377v^4 + \cdots - 1.55065v - 0.483117 \\ 0.345455v^5 - 3.38182v^4 + \cdots + 5.07273v - 1.69091 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{2033}{385}v^5 - \frac{4009}{77}v^4 + \frac{190301}{385}v^3 - \frac{71002}{385}v^2 + \frac{3599}{77}v - \frac{5364}{385}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_6	$(y^3 + 3y^2 + 2y - 1)^2$
c_2, c_4	$(y^3 - y^2 + 2y - 1)^2$
c_5	$(y^3 - 5y^2 + 10y - 1)^2$
c_7	y^6
c_8, c_{11}, c_{12}	$(y^2 + y + 1)^3$
c_9, c_{10}	$y^6 + 10y^5 + 95y^4 + 48y^3 + 15y^2 + 5y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 0.299729 + 0.124916I$ $a = 0$ $b = -0.215080 + 1.307140I$	$3.02413 + 0.79824I$	$-7.24138 + 7.14502I$
$v = 0.299729 - 0.124916I$ $a = 0$ $b = -0.215080 - 1.307140I$	$3.02413 - 0.79824I$	$-7.24138 - 7.14502I$
$v = -0.041684 + 0.322031I$ $a = 0$ $b = -0.215080 - 1.307140I$	$3.02413 - 4.85801I$	$8.78307 + 4.05565I$
$v = -0.041684 - 0.322031I$ $a = 0$ $b = -0.215080 + 1.307140I$	$3.02413 + 4.85801I$	$8.78307 - 4.05565I$
$v = 4.74195 + 8.21331I$ $a = 0$ $b = -0.569840$	$-1.11345 - 2.02988I$	$37.9583 - 74.4205I$
$v = 4.74195 - 8.21331I$ $a = 0$ $b = -0.569840$	$-1.11345 + 2.02988I$	$37.9583 + 74.4205I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^9)(u^3-u^2+2u-1)^2(u^{68}+72u^{67}+\cdots-116u+1)$
c_2	$((u-1)^9)(u^3+u^2-1)^2(u^{68}-12u^{67}+\cdots+4u-1)$
c_3	$u^9(u^3-u^2+2u-1)^2(u^{68}+3u^{67}+\cdots+2048u+512)$
c_4	$((u+1)^9)(u^3-u^2+1)^2(u^{68}-12u^{67}+\cdots+4u-1)$
c_5	$(u^3+3u^2+2u-1)^2$ $\cdot(u^9+5u^8+12u^7+15u^6+9u^5-u^4-4u^3-2u^2+u+1)$ $\cdot(u^{68}+4u^{67}+\cdots+20u^2-1)$
c_6	$u^9(u^3+u^2+2u+1)^2(u^{68}+3u^{67}+\cdots+2048u+512)$
c_7	$u^6(u^9-u^8-2u^7+3u^6+u^5-3u^4+2u^3-u+1)$ $\cdot(u^{68}+6u^{67}+\cdots-992u+64)$
c_8	$(u^2+u+1)^3(u^9-u^8+2u^7-u^6+3u^5-u^4+2u^3+u+1)$ $\cdot(u^{68}+5u^{67}+\cdots-61u+1)$
c_9	$(u^6+2u^5+7u^4-8u^3+7u^2-3u+1)$ $\cdot(u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1)$ $\cdot(u^{68}-4u^{67}+\cdots-1569175u-179693)$
c_{10}	$(u^6+2u^5+7u^4-8u^3+7u^2-3u+1)$ $\cdot(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)$ $\cdot(u^{68}-8u^{67}+\cdots-679u+1423)$
c_{11}	$(u^2-u+1)^3(u^9+u^8+2u^7+u^6+3u^5+u^4+2u^3+u-1)$ $\cdot(u^{68}+5u^{67}+\cdots-61u+1)$
c_{12}	$(u^2+u+1)^3$ $\cdot(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)$ $\cdot(u^{68}+33u^{67}+\cdots-4365u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^9)(y^3+3y^2+2y-1)^2(y^{68}-140y^{67}+\cdots+13088y+1)$
c_2, c_4	$((y-1)^9)(y^3-y^2+2y-1)^2(y^{68}-72y^{67}+\cdots+116y+1)$
c_3, c_6	$y^9(y^3+3y^2+2y-1)^2(y^{68}-51y^{67}+\cdots-1048576y+262144)$
c_5	$(y^3-5y^2+10y-1)^2$ $\cdot(y^9-y^8+12y^7-7y^6+37y^5+y^4-10y^2+5y-1)$ $\cdot(y^{68}-16y^{67}+\cdots-40y+1)$
c_7	$y^6(y^9-5y^8+12y^7-15y^6+9y^5+y^4-4y^3+2y^2+y-1)$ $\cdot(y^{68}+30y^{67}+\cdots-332800y+4096)$
c_8, c_{11}	$(y^2+y+1)^3$ $\cdot(y^9+3y^8+8y^7+13y^6+17y^5+17y^4+12y^3+6y^2+y-1)$ $\cdot(y^{68}+33y^{67}+\cdots-4365y+1)$
c_9	$(y^6+10y^5+95y^4+48y^3+15y^2+5y+1)$ $\cdot(y^9-5y^8+12y^7-15y^6+9y^5+y^4-4y^3+2y^2+y-1)$ $\cdot(y^{68}-20y^{67}+\cdots-70781434415y+32289574249)$
c_{10}	$(y^6+10y^5+95y^4+48y^3+15y^2+5y+1)$ $\cdot(y^9+7y^8+20y^7+25y^6+5y^5-15y^4+22y^2+13y-1)$ $\cdot(y^{68}-68y^{67}+\cdots+88237y+2024929)$
c_{12}	$((y^2+y+1)^3)(y^9+7y^8+\cdots+13y-1)$ $\cdot(y^{68}+9y^{67}+\cdots-19115909y+1)$