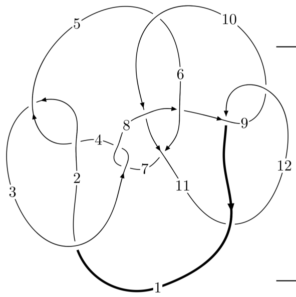
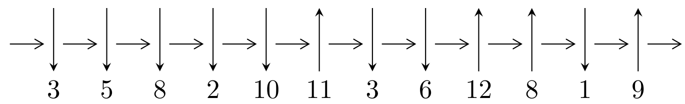
$12n_{0126}$ $(K12n_{0126})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -6.07079 \times 10^{303} u^{80} + 1.55900 \times 10^{304} u^{79} + \cdots + 4.90378 \times 10^{306} b - 8.03703 \times 10^{306},$$
$$1.46094 \times 10^{304} u^{80} - 6.01646 \times 10^{304} u^{79} + \cdots + 4.90378 \times 10^{306} a - 3.48928 \times 10^{307},$$
$$u^{81} - 3u^{80} + \cdots + 1024u + 1024 \rangle$$
$$I_2^u = \langle b,\ a^2 - 3au + 5a - 21u + 34,\ u^2 - u - 1 \rangle$$

$$I_1^v = \langle a,\ -v^2 + b + 3v - 1,\ v^4 - 5v^3 + 7v^2 - 2v + 1 \rangle$$
$$I_2^v = \langle a,\ -3v^5 - 38v^4 - 14v^3 - 295v^2 + 67b - 19v - 65,\ v^6 + 8v^4 + 2v^3 + 4v^2 + v + 1 \rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 95 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. $I^u_1 = \langle -6.07 \times 10^{303} u^{80} + 1.56 \times 10^{304} u^{79} + \cdots + 4.90 \times 10^{306} b - 8.04 \times 10^{306},\ 1.46 \times 10^{304} u^{80} - 6.02 \times 10^{304} u^{79} + \cdots + 4.90 \times 10^{306} a - 3.49 \times 10^{307},\ u^{81} - 3u^{80} + \cdots + 1024u + 1024 \rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.00297921u^{80} + 0.0122690u^{79} + \cdots - 18.5060u + 7.11548 \\ 0.00123798u^{80} - 0.00317918u^{79} + \cdots + 8.06983u + 1.63894 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.00291408u^{80} - 0.00699880u^{79} + \cdots - 21.8367u + 36.3426 \\ -0.000604359u^{80} + 0.00154234u^{79} + \cdots - 5.55867u - 0.574802 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.00467296u^{80} + 0.0119450u^{79} + \cdots - 39.3868u - 6.00265 \\ -0.00154134u^{80} + 0.00547407u^{79} + \cdots - 6.57065u + 2.38699 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.00421719u^{80} + 0.0154482u^{79} + \cdots - 26.5758u + 5.47653 \\ 0.00123798u^{80} - 0.00317918u^{79} + \cdots + 8.06983u + 1.63894 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.00342207u^{80} + 0.0108220u^{79} + \cdots - 17.4933u - 1.23720 \\ 0.00111382u^{80} - 0.00415508u^{79} + \cdots + 3.94295u - 2.65104 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.00230825u^{80} - 0.00666691u^{79} + \cdots + 13.5504u + 3.88824 \\ 0.00111382u^{80} - 0.00415508u^{79} + \cdots + 3.94295u - 2.65104 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.00230825u^{80} - 0.00666691u^{79} + \cdots + 13.5504u + 3.88824 \\ 0.00154134u^{80} - 0.00547407u^{79} + \cdots + 6.57065u - 2.38699 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.00259882u^{80} + 0.0103269u^{79} + \cdots - 11.5768u + 3.13075 \\ 0.00426527u^{80} - 0.0133743u^{79} + \cdots + 18.6658u - 0.457794 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.0207517u^{80} - 0.0712635u^{79} + \cdots + 7.67115u + 25.2859$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{81} + 33u^{80} + \cdots + 130u + 1$
c_2, c_4	$u^{81} - 13u^{80} + \cdots - 12u + 1$
c_3, c_7	$u^{81} - 3u^{80} + \cdots + 1024u + 1024$
c_5	$u^{81} + 5u^{80} + \cdots - 47488u + 22208$
c_6	$u^{81} + u^{80} + \cdots + 8905262u + 2124511$
c_8	$u^{81} - 4u^{80} + \cdots - 5u + 1$
c_9, c_{12}	$u^{81} + 4u^{80} + \cdots + 83u - 1$
c_{10}	$u^{81} + 8u^{80} + \cdots + 256u + 16$
c_{11}	$u^{81} + 30u^{80} + \cdots + 6303u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{81} + 43y^{80} + \cdots + 5274y - 1$
c_2, c_4	$y^{81} - 33y^{80} + \cdots + 130y - 1$
c_3, c_7	$y^{81} + 57y^{80} + \cdots - 27787264y - 1048576$
c_5	$y^{81} + 103y^{80} + \cdots - 19451522048y - 493195264$
c_6	$y^{81} + 47y^{80} + \cdots + 59668081079090y - 4513546989121$
c_8	$y^{81} - 6y^{80} + \cdots + 11y - 1$
c_9, c_{12}	$y^{81} + 30y^{80} + \cdots + 6303y - 1$
c_{10}	$y^{81} - 20y^{80} + \cdots - 1152y - 256$
c_{11}	$y^{81} + 46y^{80} + \cdots + 39786411y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.890661 + 0.321140I$ $a = 0.442794 - 0.506116I$ $b = -1.003170 - 0.678335I$	$-3.72961 + 3.73093I$	0
$u = 0.890661 - 0.321140I$ $a = 0.442794 + 0.506116I$ $b = -1.003170 + 0.678335I$	$-3.72961 - 3.73093I$	0
$u = -0.880183 + 0.328930I$ $a = -0.192285 + 0.385420I$ $b = -0.519092 + 0.581351I$	$-2.15630 + 0.07606I$	0
$u = -0.880183 - 0.328930I$ $a = -0.192285 - 0.385420I$ $b = -0.519092 - 0.581351I$	$-2.15630 - 0.07606I$	0
$u = 0.336499 + 0.810387I$ $a = -2.50423 + 0.47126I$ $b = -0.722560 + 0.702901I$	$-4.60609 - 1.52975I$	$-9.48461 + 4.54719I$
$u = 0.336499 - 0.810387I$ $a = -2.50423 - 0.47126I$ $b = -0.722560 - 0.702901I$	$-4.60609 + 1.52975I$	$-9.48461 - 4.54719I$
$u = -0.086690 + 1.153850I$ $a = 1.217480 + 0.665727I$ $b = 0.759691 - 0.320662I$	$1.73887 + 0.56914I$	0
$u = -0.086690 - 1.153850I$ $a = 1.217480 - 0.665727I$ $b = 0.759691 + 0.320662I$	$1.73887 - 0.56914I$	0
$u = -0.439042 + 1.154740I$ $a = 0.732667 - 0.568454I$ $b = 0.668186 + 0.622788I$	$0.95414 + 4.42889I$	0
$u = -0.439042 - 1.154740I$ $a = 0.732667 + 0.568454I$ $b = 0.668186 - 0.622788I$	$0.95414 - 4.42889I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.757611 + 0.003546I$ $a = -0.24323 - 2.40067I$ $b = -0.675714 + 1.029340I$	$-0.12016 + 3.83503I$	$-2.19897 - 9.50011I$
$u = 0.757611 - 0.003546I$ $a = -0.24323 + 2.40067I$ $b = -0.675714 - 1.029340I$	$-0.12016 - 3.83503I$	$-2.19897 + 9.50011I$
$u = -0.123794 + 1.279290I$ $a = -1.50264 - 0.27690I$ $b = -1.68690 - 0.59992I$	$0.90648 + 3.26112I$	0
$u = -0.123794 - 1.279290I$ $a = -1.50264 + 0.27690I$ $b = -1.68690 + 0.59992I$	$0.90648 - 3.26112I$	0
$u = -0.239752 + 1.287670I$ $a = 0.863701 - 0.766311I$ $b = 0.941346 - 0.469197I$	$0.58736 - 1.68614I$	0
$u = -0.239752 - 1.287670I$ $a = 0.863701 + 0.766311I$ $b = 0.941346 + 0.469197I$	$0.58736 + 1.68614I$	0
$u = 1.357180 + 0.050552I$ $a = 0.0152362 - 0.1308150I$ $b = 1.112340 + 0.692920I$	$2.74432 + 4.49163I$	0
$u = 1.357180 - 0.050552I$ $a = 0.0152362 + 0.1308150I$ $b = 1.112340 - 0.692920I$	$2.74432 - 4.49163I$	0
$u = 0.616988 + 0.161976I$ $a = -0.42521 + 1.42820I$ $b = 0.910146 - 0.634484I$	$1.29375 - 1.45245I$	$3.62930 + 4.86424I$
$u = 0.616988 - 0.161976I$ $a = -0.42521 - 1.42820I$ $b = 0.910146 + 0.634484I$	$1.29375 + 1.45245I$	$3.62930 - 4.86424I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.077263 + 0.631820I$ $a = 0.116121 - 0.173911I$ $b = -0.297655 - 1.305260I$	$-5.47007 - 0.37522I$	$-3.64589 + 3.20724I$
$u = 0.077263 - 0.631820I$ $a = 0.116121 + 0.173911I$ $b = -0.297655 + 1.305260I$	$-5.47007 + 0.37522I$	$-3.64589 - 3.20724I$
$u = -0.455347 + 0.441128I$ $a = -1.71279 - 1.55684I$ $b = 0.569120 - 0.233874I$	$-1.004280 - 0.810007I$	$-4.84130 - 2.46574I$
$u = -0.455347 - 0.441128I$ $a = -1.71279 + 1.55684I$ $b = 0.569120 + 0.233874I$	$-1.004280 + 0.810007I$	$-4.84130 + 2.46574I$
$u = -0.020461 + 0.617454I$ $a = -0.073029 - 0.151006I$ $b = 0.391395 + 1.125760I$	$-1.20619 + 3.00339I$	$2.21341 - 3.98452I$
$u = -0.020461 - 0.617454I$ $a = -0.073029 + 0.151006I$ $b = 0.391395 - 1.125760I$	$-1.20619 - 3.00339I$	$2.21341 + 3.98452I$
$u = -0.612334$ $a = -0.700707$ $b = -0.112219$	-1.00318	-10.1710
$u = -0.154661 + 1.382630I$ $a = -0.18086 - 1.44008I$ $b = -0.018338 + 0.694246I$	$3.68961 + 0.58365I$	0
$u = -0.154661 - 1.382630I$ $a = -0.18086 + 1.44008I$ $b = -0.018338 - 0.694246I$	$3.68961 - 0.58365I$	0
$u = -0.603292 + 0.010555I$ $a = -1.93148 - 11.47890I$ $b = -0.015568 + 0.155944I$	$-1.02453 - 2.05291I$	$-171.972 + 28.532I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.603292-0.010555I$ $a=-1.93148+11.47890I$ $b=-0.015568-0.155944I$	$-1.02453+2.05291I$	$-171.972-28.532I$
$u=-0.277078+1.371800I$ $a=\ \ 0.68222+1.38332I$ $b=\ \ 0.260117-0.634813I$	$3.45045+5.35632I$	0
$u=-0.277078-1.371800I$ $a=\ \ 0.68222-1.38332I$ $b=\ \ 0.260117+0.634813I$	$3.45045-5.35632I$	0
$u=\ \ 0.50450+1.33076I$ $a=-1.49367-0.17378I$ $b=-1.60038+1.10707I$	$-0.35544-9.04141I$	0
$u=\ \ 0.50450-1.33076I$ $a=-1.49367+0.17378I$ $b=-1.60038-1.10707I$	$-0.35544+9.04141I$	0
$u=-0.00539+1.42943I$ $a=-1.054200+0.533535I$ $b=-0.975011+0.566121I$	$-0.36837-7.06216I$	0
$u=-0.00539-1.42943I$ $a=-1.054200-0.533535I$ $b=-0.975011-0.566121I$	$-0.36837+7.06216I$	0
$u=\ \ 0.05609+1.43328I$ $a=-0.951617+0.465595I$ $b=-0.99821+1.90356I$	$5.23560+2.02485I$	0
$u=\ \ 0.05609-1.43328I$ $a=-0.951617-0.465595I$ $b=-0.99821-1.90356I$	$5.23560-2.02485I$	0
$u=-0.060321+0.542689I$ $a=-0.1220830+0.0599037I$ $b=-0.495796-1.199200I$	$-3.86039+7.78753I$	$2.42285-9.44743I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.060321-0.542689I$ $a=-0.1220830-0.0599037I$ $b=-0.495796+1.199200I$	$-3.86039-7.78753I$	$2.42285+9.44743I$
$u=-0.21037+1.44375I$ $a=-1.271590+0.097495I$ $b=-0.747773-0.139398I$	$4.09035+3.09672I$	0
$u=-0.21037-1.44375I$ $a=-1.271590-0.097495I$ $b=-0.747773+0.139398I$	$4.09035-3.09672I$	0
$u=\ 0.35709+1.43000I$ $a=-0.667194-0.762996I$ $b=-1.46916-1.65478I$	$4.66300-8.19652I$	0
$u=\ 0.35709-1.43000I$ $a=-0.667194+0.762996I$ $b=-1.46916+1.65478I$	$4.66300+8.19652I$	0
$u=\ 1.45915+0.22710I$ $a=-0.1005500+0.0324263I$ $b=-1.114300-0.737613I$	$1.48186+10.21890I$	0
$u=\ 1.45915-0.22710I$ $a=-0.1005500-0.0324263I$ $b=-1.114300+0.737613I$	$1.48186-10.21890I$	0
$u=-0.458462+0.233945I$ $a=\ 1.32051-7.34173I$ $b=\ 0.190371+0.428906I$	$-1.11518+1.63608I$	$-22.5154-16.4209I$
$u=-0.458462-0.233945I$ $a=\ 1.32051+7.34173I$ $b=\ 0.190371-0.428906I$	$-1.11518-1.63608I$	$-22.5154+16.4209I$
$u=-1.42270+0.44570I$ $a=\ 0.0501638-0.1205880I$ $b=\ 0.955191+0.178009I$	$1.96531-1.49483I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.42270-0.44570I$ $a=0.0501638+0.1205880I$ $b=0.955191-0.178009I$	$1.96531+1.49483I$	0
$u=0.16545+1.48707I$ $a=1.079910+0.634140I$ $b=1.82794+1.28596I$	$7.13557-1.25582I$	0
$u=0.16545-1.48707I$ $a=1.079910-0.634140I$ $b=1.82794-1.28596I$	$7.13557+1.25582I$	0
$u=0.25605+1.48232I$ $a=1.292240-0.234967I$ $b=1.47994-1.70675I$	$6.96738-5.09561I$	0
$u=0.25605-1.48232I$ $a=1.292240+0.234967I$ $b=1.47994+1.70675I$	$6.96738+5.09561I$	0
$u=0.412488+0.213180I$ $a=-0.80784-1.70565I$ $b=0.531910+0.798490I$	$1.15026+1.50439I$	$2.46877-2.61626I$
$u=0.412488-0.213180I$ $a=-0.80784+1.70565I$ $b=0.531910-0.798490I$	$1.15026-1.50439I$	$2.46877+2.61626I$
$u=-1.54169+0.19466I$ $a=-0.1029750+0.0228323I$ $b=-0.958935-0.306788I$	$1.52644+3.83350I$	0
$u=-1.54169-0.19466I$ $a=-0.1029750-0.0228323I$ $b=-0.958935+0.306788I$	$1.52644-3.83350I$	0
$u=-0.110600+0.423339I$ $a=-8.26925+1.55023I$ $b=-0.443406-0.498696I$	$-1.63060-2.73282I$	$5.99931-8.61315I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.110600-0.423339I$ $a=-8.26925-1.55023I$ $b=-0.443406+0.498696I$	$-1.63060+2.73282I$	$5.99931+8.61315I$
$u=1.59287+0.05128I$ $a=-0.0398353-0.0628798I$ $b=-0.149905-0.238308I$	$-8.92096-1.95711I$	0
$u=1.59287-0.05128I$ $a=-0.0398353+0.0628798I$ $b=-0.149905+0.238308I$	$-8.92096+1.95711I$	0
$u=0.66734+1.50573I$ $a=1.297240+0.255032I$ $b=1.33285-1.17939I$	$7.29123-11.70270I$	0
$u=0.66734-1.50573I$ $a=1.297240-0.255032I$ $b=1.33285+1.17939I$	$7.29123+11.70270I$	0
$u=-0.029747+0.351694I$ $a=-2.43391-1.81274I$ $b=-0.792812+0.170600I$	$-0.39491+2.82152I$	$0.62625-4.26826I$
$u=-0.029747-0.351694I$ $a=-2.43391+1.81274I$ $b=-0.792812-0.170600I$	$-0.39491-2.82152I$	$0.62625+4.26826I$
$u=0.75699+1.47497I$ $a=-1.302640-0.324763I$ $b=-1.28571+1.12380I$	$5.4200-17.9748I$	0
$u=0.75699-1.47497I$ $a=-1.302640+0.324763I$ $b=-1.28571-1.12380I$	$5.4200+17.9748I$	0
$u=-0.36850+1.64315I$ $a=1.187110+0.042447I$ $b=1.42144+0.91410I$	$9.10043+4.86820I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.36850 - 1.64315I$ $a = \quad 1.187110 - 0.042447I$ $b = \quad 1.42144 - 0.91410I$	$9.10043 - 4.86820I$	0
$u = -0.83647 + 1.48482I$ $a = \quad 0.742052 - 0.280001I$ $b = \quad 0.993630 + 0.569689I$	$5.25967 + 9.70670I$	0
$u = -0.83647 - 1.48482I$ $a = \quad 0.742052 + 0.280001I$ $b = \quad 0.993630 - 0.569689I$	$5.25967 - 9.70670I$	0
$u = -0.51625 + 1.63587I$ $a = -1.196860 + 0.057613I$ $b = -1.34804 - 0.90499I$	$7.63873 + 11.12540I$	0
$u = -0.51625 - 1.63587I$ $a = -1.196860 - 0.057613I$ $b = -1.34804 + 0.90499I$	$7.63873 - 11.12540I$	0
$u = -0.67879 + 1.59644I$ $a = -0.797876 + 0.245149I$ $b = -0.988493 - 0.473850I$	$6.21314 + 4.26930I$	0
$u = -0.67879 - 1.59644I$ $a = -0.797876 - 0.245149I$ $b = -0.988493 + 0.473850I$	$6.21314 - 4.26930I$	0
$u = \quad 0.63390 + 1.61836I$ $a = \quad 0.704523 + 0.328418I$ $b = \quad 1.173510 - 0.194303I$	$7.80552 - 2.77364I$	0
$u = \quad 0.63390 - 1.61836I$ $a = \quad 0.704523 - 0.328418I$ $b = \quad 1.173510 + 0.194303I$	$7.80552 + 2.77364I$	0
$u = \quad 0.42765 + 1.74880I$ $a = -0.765788 - 0.255230I$ $b = -1.156090 + 0.105237I$	$8.06491 + 2.92024I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 0.42765 - 1.74880I$		
$a = -0.765788 + 0.255230I$	$8.06491 - 2.92024I$	0
$b = -1.156090 - 0.105237I$		

II. $I_2^u = \langle b,\ a^2 - 3au + 5a - 21u + 34,\ u^2 - u - 1 \rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ -u-1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} a \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} au - 2a + 8u - 12 \\ -u-1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} a - 4u + 5 \\ 3u + 2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} a \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ -u-1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u \\ -u-1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u \\ -3u-2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -5au - 2a \\ 21au + 13a \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -159au - 92a - 21u + 24$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$(y^2 - 7y + 1)^2$
c_2, c_3, c_4 c_7	$(y^2 - 3y + 1)^2$
c_5, c_6	$y^4 + 7y^3 + 48y^2 + 7y + 1$
c_9, c_{11}, c_{12}	$(y^2 + y + 1)^2$
c_{10}	y^4

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.618034$ $a = -3.42705 + 5.93583I$ $b = 0$	$-0.98696 + 2.02988I$	$15.5000 + 37.2022I$
$u = -0.618034$ $a = -3.42705 - 5.93583I$ $b = 0$	$-0.98696 - 2.02988I$	$15.5000 - 37.2022I$
$u = 1.61803$ $a = -0.072949 + 0.126351I$ $b = 0$	$-8.88264 + 2.02988I$	$15.5000 - 44.1304I$
$u = 1.61803$ $a = -0.072949 - 0.126351I$ $b = 0$	$-8.88264 - 2.02988I$	$15.5000 + 44.1304I$

III. $I_1^v = \langle a,\ -v^2 + b + 3v - 1,\ v^4 - 5v^3 + 7v^2 - 2v + 1\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ v^2 - 3v + 1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ -v^3 + 4v^2 - 4v \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -v^3 + 4v^2 - 4v + 1 \\ v^3 - 5v^2 + 7v - 2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -v^2 + 3v - 1 \\ v^2 - 3v + 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -v^2 + 3v - 1 \\ -v^3 + 5v^2 - 7v + 2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} v^2 - 2v + 1 \\ v^3 - 5v^2 + 7v - 2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} v^2 - 3v + 1 \\ v^3 - 5v^2 + 7v - 2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -v + 2 \\ v - 3 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 2v^3 - 6v^2 + 11v - 17$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 0.100768 + 0.400532I$ $a = 0$ $b = 0.547424 - 1.120870I$	$-4.26996 - 7.64338I$	$-15.0849 + 3.8174I$
$v = 0.100768 - 0.400532I$ $a = 0$ $b = 0.547424 + 1.120870I$	$-4.26996 + 7.64338I$	$-15.0849 - 3.8174I$
$v = 2.39923 + 0.32564I$ $a = 0$ $b = -0.547424 + 0.585652I$	$-0.66484 - 1.39709I$	$1.58487 + 5.38446I$
$v = 2.39923 - 0.32564I$ $a = 0$ $b = -0.547424 - 0.585652I$	$-0.66484 + 1.39709I$	$1.58487 - 5.38446I$

IV. $\boldsymbol{I_2^v = \langle a,\ -3v^5 - 38v^4 + \cdots + 67b - 65,\ v^6 + 8v^4 + 2v^3 + 4v^2 + v + 1\rangle}$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} 0 \\ 0.0447761v^5 + 0.567164v^4 + \cdots + 0.283582v + 0.970149 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ -0.373134v^5 - 0.0597015v^4 + \cdots - 2.02985v - 1.41791 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.373134v^5 - 0.0597015v^4 + \cdots - 2.02985v - 0.417910 \\ v^5 + 8v^3 + 2v^2 + 4v + 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.0447761v^5 - 0.567164v^4 + \cdots - 0.283582v - 0.970149 \\ 0.0447761v^5 + 0.567164v^4 + \cdots + 0.283582v + 0.970149 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.626866v^5 - 0.0597015v^4 + \cdots + 1.97015v + 0.582090 \\ -v^5 - 8v^3 - 2v^2 - 4v - 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.626866v^5 + 0.0597015v^4 + \cdots - 0.970149v - 0.582090 \\ v^5 + 8v^3 + 2v^2 + 4v + 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.626866v^5 + 0.0597015v^4 + \cdots - 1.97015v - 0.582090 \\ v^5 + 8v^3 + 2v^2 + 4v + 1 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} -0.567164v^5 + 0.149254v^4 + \cdots - 0.925373v - 0.955224 \\ 0.776119v^5 + 0.164179v^4 + \cdots + 1.58209v + 2.14925 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{85}{67}v^5 - \frac{27}{67}v^4 - \frac{620}{67}v^3 - \frac{363}{67}v^2 + \frac{154}{67}v - \frac{859}{67}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 0.175218 + 0.614017I$ $a = 0$ $b = -0.498832 + 1.001300I$	$-1.91067 - 2.82812I$	$-8.91986 + 1.90022I$
$v = 0.175218 - 0.614017I$ $a = 0$ $b = -0.498832 - 1.001300I$	$-1.91067 + 2.82812I$	$-8.91986 - 1.90022I$
$v = -0.307599 + 0.479689I$ $a = 0$ $b = 0.284920 - 1.115140I$	-6.04826	$-14.4399 + 2.5036I$
$v = -0.307599 - 0.479689I$ $a = 0$ $b = 0.284920 + 1.115140I$	-6.04826	$-14.4399 - 2.5036I$
$v = 0.13238 + 2.74513I$ $a = 0$ $b = 0.713912 + 0.305839I$	$-1.91067 - 2.82812I$	$-14.1402 + 3.6935I$
$v = 0.13238 - 2.74513I$ $a = 0$ $b = 0.713912 - 0.305839I$	$-1.91067 + 2.82812I$	$-14.1402 - 3.6935I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^{10})(u^2-3u+1)^2(u^{81}+33u^{80}+\cdots+130u+1)$
c_2	$((u-1)^{10})(u^2+u-1)^2(u^{81}-13u^{80}+\cdots-12u+1)$
c_3	$u^{10}(u^2+u-1)^2(u^{81}-3u^{80}+\cdots+1024u+1024)$
c_4	$((u+1)^{10})(u^2-u-1)^2(u^{81}-13u^{80}+\cdots-12u+1)$
c_5	$(u^3-u^2+1)^2(u^4+3u^3+4u^2+3u+2)(u^4+3u^3+8u^2+3u+1)$ $\cdot(u^{81}+5u^{80}+\cdots-47488u+22208)$
c_6	$(u^4+u^2+u+1)(u^4+3u^3+8u^2+3u+1)$ $\cdot(u^6-u^5+2u^4-2u^3+2u^2-2u+1)$ $\cdot(u^{81}+u^{80}+\cdots+8905262u+2124511)$
c_7	$u^{10}(u^2-u-1)^2(u^{81}-3u^{80}+\cdots+1024u+1024)$
c_8	$(u^2+3u+1)^2(u^4+2u^3+3u^2+u+1)(u^6+3u^5+4u^4+2u^3+1)$ $\cdot(u^{81}-4u^{80}+\cdots-5u+1)$
c_9	$(u^2+u+1)^2(u^4+u^2+u+1)(u^6-u^5+2u^4-2u^3+2u^2-2u+1)$ $\cdot(u^{81}+4u^{80}+\cdots+83u-1)$
c_{10}	$u^4(u^4+u^2-u+1)(u^6+u^5+2u^4+2u^3+2u^2+2u+1)$ $\cdot(u^{81}+8u^{80}+\cdots+256u+16)$
c_{11}	$(u^2-u+1)^2(u^4-2u^3+3u^2-u+1)(u^6-3u^5+4u^4-2u^3+1)$ $\cdot(u^{81}+30u^{80}+\cdots+6303u-1)$
c_{12}	$(u^2-u+1)^2(u^4+u^2-u+1)(u^6+u^5+2u^4+2u^3+2u^2+2u+1)$ $\cdot(u^{81}+4u^{80}+\cdots+83u-1)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^{10})(y^2-7y+1)^2(y^{81}+43y^{80}+\cdots+5274y-1)$
c_2, c_4	$((y-1)^{10})(y^2-3y+1)^2(y^{81}-33y^{80}+\cdots+130y-1)$
c_3, c_7	$y^{10}(y^2-3y+1)^2(y^{81}+57y^{80}+\cdots-2.77873\times 10^7 y-1048576)$
c_5	$((y^3-y^2+2y-1)^2)(y^4-y^3+2y^2+7y+4)(y^4+7y^3+\cdots+7y+1)$ $\cdot(y^{81}+103y^{80}+\cdots-19451522048y-493195264)$
c_6	$(y^4+2y^3+3y^2+y+1)(y^4+7y^3+48y^2+7y+1)$ $\cdot(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^{81}+47y^{80}+\cdots+59668081079090y-4513546989121)$
c_8	$((y^2-7y+1)^2)(y^4+2y^3+\cdots+5y+1)(y^6-y^5+\cdots+8y^2+1)$ $\cdot(y^{81}-6y^{80}+\cdots+11y-1)$
c_9, c_{12}	$(y^2+y+1)^2(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^{81}+30y^{80}+\cdots+6303y-1)$
c_{10}	$y^4(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^{81}-20y^{80}+\cdots-1152y-256)$
c_{11}	$((y^2+y+1)^2)(y^4+2y^3+\cdots+5y+1)(y^6-y^5+\cdots+8y^2+1)$ $\cdot(y^{81}+46y^{80}+\cdots+39786411y-1)$