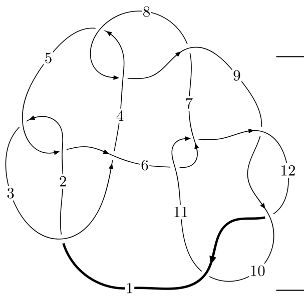
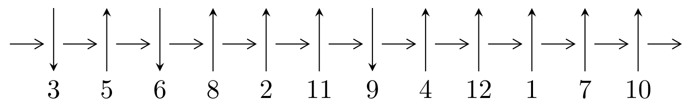
$12a_{0011}$ $(K12a_{0011})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle &-7.27315\times 10^{120}u^{95} + 1.01058\times 10^{120}u^{94} + \cdots + 9.05988\times 10^{121}b - 5.64489\times 10^{122},\\
&9.19778\times 10^{119}u^{95} - 1.53124\times 10^{120}u^{94} + \cdots + 2.83121\times 10^{120}a - 2.95068\times 10^{120},\\
&u^{96} - 2u^{95} + \cdots - 112u + 16\rangle\\
I_2^u = \langle &b+1,\ -u^3 - u^2 + a - u + 1,\ u^4 + u^2 - u + 1\rangle\\
I_3^u = \langle &b+1,\ 2u^5 + u^4 + 3u^3 + 2u^2 + a + 2u + 3,\ u^6 + u^5 + 2u^4 + 2u^3 + 2u^2 + 2u + 1\rangle
\end{aligned}$$

$$I_1^v = \langle a,\ -v^3 + 8b - 13,\ v^4 - 3v^3 + 8v^2 - 3v + 1\rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 110 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. $\boldsymbol{I^u_1 = \langle -7.27 \times 10^{120} u^{95} + 1.01 \times 10^{120} u^{94} + \cdots + 9.06 \times 10^{121} b - 5.64 \times 10^{122},\ 9.20 \times 10^{119} u^{95} - 1.53 \times 10^{120} u^{94} + \cdots + 2.83 \times 10^{120} a - 2.95 \times 10^{120},\ u^{96} - 2u^{95} + \cdots - 112u + 16 \rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.324871u^{95} + 0.540842u^{94} + \cdots - 14.4927u + 1.04220 \\ 0.0802787u^{95} - 0.0111544u^{94} + \cdots - 30.5199u + 6.23065 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.207428u^{95} + 0.388117u^{94} + \cdots - 12.9586u + 1.57350 \\ 0.112780u^{95} - 0.0919036u^{94} + \cdots - 20.9134u + 4.66415 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.293420u^{95} + 0.345934u^{94} + \cdots + 29.2088u - 7.07180 \\ -0.127753u^{95} + 0.0810802u^{94} + \cdots + 33.3471u - 7.46550 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.248572u^{95} + 0.307437u^{94} + \cdots + 34.5855u - 7.95553 \\ -0.0744823u^{95} + 0.00433249u^{94} + \cdots + 35.8792u - 7.80797 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.156252u^{95} + 0.315966u^{94} + \cdots - 18.5636u + 2.88775 \\ 0.0923201u^{95} + 0.00852920u^{94} + \cdots - 53.1492u + 10.8433 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.0558784u^{95} + 0.0316719u^{94} + \cdots - 39.1695u + 6.39107 \\ 0.273471u^{95} - 0.462337u^{94} + \cdots + 25.3301u - 0.875238 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.0987072u^{95} - 0.0572327u^{94} + \cdots - 31.9109u + 5.80866 \\ 0.311645u^{95} - 0.533355u^{94} + \cdots + 31.5399u - 1.40569 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.207765u^{95} + 0.393624u^{94} + \cdots - 136.340u + 31.6509$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{96} + 44u^{95} + \cdots - 56u + 1$
c_2, c_5	$u^{96} + 4u^{95} + \cdots - 28u^2 + 1$
c_3	$u^{96} - 4u^{95} + \cdots - 780u + 36$
c_4, c_8	$u^{96} - 2u^{95} + \cdots - 112u + 16$
c_6, c_{11}	$u^{96} - 3u^{95} + \cdots + 2048u - 1024$
c_7	$u^{96} + 30u^{95} + \cdots + 2944u + 256$
c_9, c_{10}, c_{12}	$u^{96} + 13u^{95} + \cdots - 7u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{96} + 20y^{95} + \cdots - 3584y + 1$
c_2, c_5	$y^{96} + 44y^{95} + \cdots - 56y + 1$
c_3	$y^{96} - 4y^{95} + \cdots - 148392y + 1296$
c_4, c_8	$y^{96} + 30y^{95} + \cdots + 2944y + 256$
c_6, c_{11}	$y^{96} - 69y^{95} + \cdots - 2621440y + 1048576$
c_7	$y^{96} + 66y^{95} + \cdots - 5578752y + 65536$
c_9, c_{10}, c_{12}	$y^{96} - 99y^{95} + \cdots - 59y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.179865 + 0.981177I$ $a = 0.400592 + 0.469661I$ $b = 0.737676 - 0.333905I$	$-1.89305 + 2.08679I$	0
$u = 0.179865 - 0.981177I$ $a = 0.400592 - 0.469661I$ $b = 0.737676 + 0.333905I$	$-1.89305 - 2.08679I$	0
$u = 0.064862 + 1.005660I$ $a = -1.196160 - 0.222902I$ $b = 0.176480 + 0.138850I$	$6.35016 + 2.70358I$	0
$u = 0.064862 - 1.005660I$ $a = -1.196160 + 0.222902I$ $b = 0.176480 - 0.138850I$	$6.35016 - 2.70358I$	0
$u = 0.198241 + 0.963841I$ $a = -0.80496 + 1.16785I$ $b = -1.53096 + 0.67111I$	$-1.30704 + 4.75458I$	0
$u = 0.198241 - 0.963841I$ $a = -0.80496 - 1.16785I$ $b = -1.53096 - 0.67111I$	$-1.30704 - 4.75458I$	0
$u = 0.956508$ $a = -0.812407$ $b = 0.283592$	6.97501	13.9200
$u = 0.727657 + 0.756348I$ $a = -0.19023 - 1.61049I$ $b = 1.25916 - 2.01436I$	$10.97980 + 2.94589I$	0
$u = 0.727657 - 0.756348I$ $a = -0.19023 + 1.61049I$ $b = 1.25916 + 2.01436I$	$10.97980 - 2.94589I$	0
$u = -0.052755 + 0.934065I$ $a = -0.662357 + 0.538200I$ $b = -1.91189 - 0.01238I$	$-1.63144 - 2.08117I$	$3.21072 + 3.69308I$

Solutions to I^u_1	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.052755 - 0.934065I$ $a = -0.662357 - 0.538200I$ $b = -1.91189 + 0.01238I$	$-1.63144 + 2.08117I$	$3.21072 - 3.69308I$
$u = 0.506190 + 0.776082I$ $a = 0.453782 + 0.845346I$ $b = -1.21115 + 1.39079I$	$-0.0181181 - 0.1012650I$	$6.00000 + 0.I$
$u = 0.506190 - 0.776082I$ $a = 0.453782 - 0.845346I$ $b = -1.21115 - 1.39079I$	$-0.0181181 + 0.1012650I$	$6.00000 + 0.I$
$u = 0.732555 + 0.785317I$ $a = -2.14393 - 0.65735I$ $b = -0.30613 - 2.06567I$	$3.34357 - 1.04746I$	0
$u = 0.732555 - 0.785317I$ $a = -2.14393 + 0.65735I$ $b = -0.30613 + 2.06567I$	$3.34357 + 1.04746I$	0
$u = -0.640126 + 0.887175I$ $a = -0.637838 - 0.691592I$ $b = -0.159222 - 0.593907I$	$1.50017 - 2.47654I$	0
$u = -0.640126 - 0.887175I$ $a = -0.637838 + 0.691592I$ $b = -0.159222 + 0.593907I$	$1.50017 + 2.47654I$	0
$u = -0.043194 + 1.098890I$ $a = 0.604265 - 0.571418I$ $b = 0.832969 - 0.162003I$	$-5.25031 + 1.29319I$	0
$u = -0.043194 - 1.098890I$ $a = 0.604265 + 0.571418I$ $b = 0.832969 + 0.162003I$	$-5.25031 - 1.29319I$	0
$u = -0.378146 + 1.034420I$ $a = 0.250816 + 0.461945I$ $b = -0.007172 + 0.437665I$	$-4.01038 - 0.74785I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.378146-1.034420I$ $a=\ 0.250816-0.461945I$ $b=-0.007172-0.437665I$	$-4.01038+0.74785I$	0
$u=-0.819181+0.739492I$ $a=-0.52219+1.62413I$ $b=\ 0.86589+2.07251I$	$12.44970+2.14786I$	0
$u=-0.819181-0.739492I$ $a=-0.52219-1.62413I$ $b=\ 0.86589-2.07251I$	$12.44970-2.14786I$	0
$u=\ 0.606982+0.647554I$ $a=\ 0.482836+0.124243I$ $b=-0.1275970-0.0182045I$	$1.29359+1.42707I$	$5.04296-3.45734I$
$u=\ 0.606982-0.647554I$ $a=\ 0.482836-0.124243I$ $b=-0.1275970+0.0182045I$	$1.29359-1.42707I$	$5.04296+3.45734I$
$u=-0.826561+0.758089I$ $a=-1.015440+0.308143I$ $b=\ 0.099788+0.182714I$	$5.34537+3.62875I$	0
$u=-0.826561-0.758089I$ $a=-1.015440-0.308143I$ $b=\ 0.099788-0.182714I$	$5.34537-3.62875I$	0
$u=-0.837925+0.750857I$ $a=\ 1.56771-1.61603I$ $b=-0.14758-2.27068I$	$4.82979+1.10173I$	0
$u=-0.837925-0.750857I$ $a=\ 1.56771+1.61603I$ $b=-0.14758+2.27068I$	$4.82979-1.10173I$	0
$u=-1.118750+0.126118I$ $a=-1.051510+0.159099I$ $b=-0.069491+0.255839I$	$3.98579+3.78181I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.118750 - 0.126118I$ $a = -1.051510 - 0.159099I$ $b = -0.069491 - 0.255839I$	$3.98579 - 3.78181I$	0
$u = 0.572426 + 0.970896I$ $a = 0.120038 - 0.183375I$ $b = -0.242684 - 0.284713I$	$0.30507 + 3.24456I$	0
$u = 0.572426 - 0.970896I$ $a = 0.120038 + 0.183375I$ $b = -0.242684 + 0.284713I$	$0.30507 - 3.24456I$	0
$u = -0.249684 + 1.106760I$ $a = 0.574433 - 0.199646I$ $b = 1.197250 + 0.405278I$	$-4.63078 - 6.21392I$	0
$u = -0.249684 - 1.106760I$ $a = 0.574433 + 0.199646I$ $b = 1.197250 - 0.405278I$	$-4.63078 + 6.21392I$	0
$u = -0.742235 + 0.861901I$ $a = -1.81336 + 1.05906I$ $b = -0.02595 + 2.29423I$	$4.77127 - 4.14701I$	0
$u = -0.742235 - 0.861901I$ $a = -1.81336 - 1.05906I$ $b = -0.02595 - 2.29423I$	$4.77127 + 4.14701I$	0
$u = 0.895738 + 0.705536I$ $a = 1.89918 + 1.51772I$ $b = 0.20285 + 2.21158I$	$3.07743 - 6.16610I$	0
$u = 0.895738 - 0.705536I$ $a = 1.89918 - 1.51772I$ $b = 0.20285 - 2.21158I$	$3.07743 + 6.16610I$	0
$u = -0.737566 + 0.438984I$ $a = 0.699444 - 0.411046I$ $b = -0.0545657 - 0.1131930I$	$-0.06859 + 3.07421I$	$2.78055 - 2.58683I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.737566 - 0.438984I$ $a = 0.699444 + 0.411046I$ $b = -0.0545657 + 0.1131930I$	$-0.06859 - 3.07421I$	$2.78055 + 2.58683I$
$u = 0.801875 + 0.817313I$ $a = -0.727587 - 0.105234I$ $b = 0.203872 + 0.043495I$	$6.94878 + 1.52895I$	0
$u = 0.801875 - 0.817313I$ $a = -0.727587 + 0.105234I$ $b = 0.203872 - 0.043495I$	$6.94878 - 1.52895I$	0
$u = 0.983067 + 0.593907I$ $a = -1.04833 - 1.13241I$ $b = 0.14959 - 1.56719I$	$6.80439 - 2.73172I$	0
$u = 0.983067 - 0.593907I$ $a = -1.04833 + 1.13241I$ $b = 0.14959 + 1.56719I$	$6.80439 + 2.73172I$	0
$u = -0.736893 + 0.881078I$ $a = 0.81168 - 1.88164I$ $b = -0.94456 - 2.45732I$	$4.71166 - 1.47213I$	0
$u = -0.736893 - 0.881078I$ $a = 0.81168 + 1.88164I$ $b = -0.94456 + 2.45732I$	$4.71166 + 1.47213I$	0
$u = 0.710431 + 0.942506I$ $a = 0.49343 + 2.02506I$ $b = -1.28029 + 2.56757I$	$2.86050 + 6.56016I$	0
$u = 0.710431 - 0.942506I$ $a = 0.49343 - 2.02506I$ $b = -1.28029 - 2.56757I$	$2.86050 - 6.56016I$	0
$u = 0.647089 + 0.994598I$ $a = -0.749872 - 1.117940I$ $b = 0.76062 - 2.10880I$	$-1.06039 + 4.88469I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.647089 - 0.994598I$ $a = -0.749872 + 1.117940I$ $b = 0.76062 + 2.10880I$	$-1.06039 - 4.88469I$	0
$u = 0.696883 + 0.968308I$ $a = 1.48900 + 0.31889I$ $b = 0.20368 + 1.98021I$	$10.32400 + 2.51546I$	0
$u = 0.696883 - 0.968308I$ $a = 1.48900 - 0.31889I$ $b = 0.20368 - 1.98021I$	$10.32400 - 2.51546I$	0
$u = 0.663214 + 0.429650I$ $a = 1.43183 + 0.39092I$ $b = -0.142029 + 0.933862I$	$0.199282 + 0.054914I$	$5.95141 + 1.45020I$
$u = 0.663214 - 0.429650I$ $a = 1.43183 - 0.39092I$ $b = -0.142029 - 0.933862I$	$0.199282 - 0.054914I$	$5.95141 - 1.45020I$
$u = 0.762855 + 0.939390I$ $a = -0.214157 + 0.302745I$ $b = 0.382487 + 0.559471I$	$6.56862 + 4.35035I$	0
$u = 0.762855 - 0.939390I$ $a = -0.214157 - 0.302745I$ $b = 0.382487 - 0.559471I$	$6.56862 - 4.35035I$	0
$u = -0.593981 + 1.068690I$ $a = -0.023274 + 0.252986I$ $b = -0.331966 + 0.383447I$	$-1.90007 - 8.13886I$	0
$u = -0.593981 - 1.068690I$ $a = -0.023274 - 0.252986I$ $b = -0.331966 - 0.383447I$	$-1.90007 + 8.13886I$	0
$u = -0.980600 + 0.732809I$ $a = -1.12281 + 1.60043I$ $b = 0.15151 + 2.14124I$	$11.78970 + 4.88988I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.980600-0.732809I$ $a=-1.12281-1.60043I$ $b=\ \ 0.15151-2.14124I$	$11.78970-4.88988I$	0
$u=-0.159597+0.751118I$ $a=-0.419266-1.331750I$ $b=-1.265100-0.214772I$	$1.05859-1.02125I$	$7.61187+0.05036I$
$u=-0.159597-0.751118I$ $a=-0.419266+1.331750I$ $b=-1.265100+0.214772I$	$1.05859+1.02125I$	$7.61187-0.05036I$
$u=-0.754185+0.986111I$ $a=-0.036824-0.455932I$ $b=\ \ 0.452248-0.773019I$	$4.64082-9.55010I$	0
$u=-0.754185-0.986111I$ $a=-0.036824+0.455932I$ $b=\ \ 0.452248+0.773019I$	$4.64082+9.55010I$	0
$u=-0.758090+0.018044I$ $a=\ \ 1.40140+0.29204I$ $b=\ \ 0.200844-0.138201I$	$-0.87840+2.74391I$	$2.63740-6.04113I$
$u=-0.758090-0.018044I$ $a=\ \ 1.40140-0.29204I$ $b=\ \ 0.200844+0.138201I$	$-0.87840-2.74391I$	$2.63740+6.04113I$
$u=-0.741529+0.998801I$ $a=\ \ 1.47574-0.72432I$ $b=\ \ 0.06701-2.18200I$	$11.64830-8.01057I$	0
$u=-0.741529-0.998801I$ $a=\ \ 1.47574+0.72432I$ $b=\ \ 0.06701+2.18200I$	$11.64830+8.01057I$	0
$u=-0.755636+0.994782I$ $a=-1.16371+1.70557I$ $b=\ \ 0.57646+2.66065I$	$4.07325-7.05946I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.755636 - 0.994782I$ $a = -1.16371 - 1.70557I$ $b = 0.57646 - 2.66065I$	$4.07325 + 7.05946I$	0
$u = 0.327809 + 1.223240I$ $a = -0.488608 - 0.084817I$ $b = -0.383365 + 0.630574I$	$2.74232 + 4.46570I$	0
$u = 0.327809 - 1.223240I$ $a = -0.488608 + 0.084817I$ $b = -0.383365 - 0.630574I$	$2.74232 - 4.46570I$	0
$u = 1.033530 + 0.740573I$ $a = -1.33443 - 1.59134I$ $b = -0.09718 - 2.17128I$	$9.75556 - 10.08300I$	0
$u = 1.033530 - 0.740573I$ $a = -1.33443 + 1.59134I$ $b = -0.09718 + 2.17128I$	$9.75556 + 10.08300I$	0
$u = 0.763723 + 1.038380I$ $a = -0.94298 - 1.92781I$ $b = 0.79838 - 2.79461I$	$2.04041 + 12.30580I$	0
$u = 0.763723 - 1.038380I$ $a = -0.94298 + 1.92781I$ $b = 0.79838 + 2.79461I$	$2.04041 - 12.30580I$	0
$u = 0.747775 + 1.102840I$ $a = 0.828498 + 1.089450I$ $b = -0.43773 + 2.16511I$	$5.21813 + 9.00258I$	0
$u = 0.747775 - 1.102840I$ $a = 0.828498 - 1.089450I$ $b = -0.43773 - 2.16511I$	$5.21813 - 9.00258I$	0
$u = -0.223963 + 1.321760I$ $a = -0.661370 + 0.023722I$ $b = -0.493598 - 0.360114I$	$-1.46466 - 0.83782I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.223963-1.321760I$ $a=-0.661370-0.023722I$ $b=-0.493598+0.360114I$	$-1.46466+0.83782I$	0
$u=-0.810092+1.071990I$ $a=\quad 1.19835-1.42854I$ $b=-0.32083-2.50985I$	$10.6997-11.4421I$	0
$u=-0.810092-1.071990I$ $a=\quad 1.19835+1.42854I$ $b=-0.32083+2.50985I$	$10.6997+11.4421I$	0
$u=-0.407132+1.290330I$ $a=-0.463759-0.102711I$ $b=-0.610594-0.729703I$	$-0.19623-9.22714I$	0
$u=-0.407132-1.290330I$ $a=-0.463759+0.102711I$ $b=-0.610594+0.729703I$	$-0.19623+9.22714I$	0
$u=\quad 0.830652+1.095500I$ $a=\quad 1.08127+1.63799I$ $b=-0.46328+2.61088I$	$8.5916+16.8595I$	0
$u=\quad 0.830652-1.095500I$ $a=\quad 1.08127-1.63799I$ $b=-0.46328-2.61088I$	$8.5916-16.8595I$	0
$u=-0.457900+0.381328I$ $a=-3.03679-2.46911I$ $b=-0.937516+0.031870I$	$1.98842-1.41068I$	$2.70790+7.48837I$
$u=-0.457900-0.381328I$ $a=-3.03679+2.46911I$ $b=-0.937516-0.031870I$	$1.98842+1.41068I$	$2.70790-7.48837I$
$u=\quad 0.073742+0.507409I$ $a=\quad 2.26010+1.46464I$ $b=-0.177445-0.145732I$	$0.65230+2.25194I$	$-2.13457-8.32594I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.073742 - 0.507409I$ $a = 2.26010 - 1.46464I$ $b = -0.177445 + 0.145732I$	$0.65230 - 2.25194I$	$-2.13457 + 8.32594I$
$u = 0.185153 + 0.465023I$ $a = 0.451736 - 0.268144I$ $b = 1.94486 - 0.33037I$	$8.64481 - 1.76125I$	$-0.03733 - 6.99048I$
$u = 0.185153 - 0.465023I$ $a = 0.451736 + 0.268144I$ $b = 1.94486 + 0.33037I$	$8.64481 + 1.76125I$	$-0.03733 + 6.99048I$
$u = 0.453811 + 0.103724I$ $a = -7.23514 + 1.66240I$ $b = -1.032900 + 0.008082I$	$1.40994 - 2.35915I$	$21.8120 - 15.4151I$
$u = 0.453811 - 0.103724I$ $a = -7.23514 - 1.66240I$ $b = -1.032900 - 0.008082I$	$1.40994 + 2.35915I$	$21.8120 + 15.4151I$
$u = 0.362698$ $a = 1.27387$ $b = -0.385362$	0.845329	11.9590

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -5u^3-3u^2-u+13$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.547424 + 0.585652I$ $a = -0.89512 + 1.55249I$ $b = -1.00000$	$2.62503 + 1.39709I$	$14.5787 - 4.1375I$
$u = 0.547424 - 0.585652I$ $a = -0.89512 - 1.55249I$ $b = -1.00000$	$2.62503 - 1.39709I$	$14.5787 + 4.1375I$
$u = -0.547424 + 1.120870I$ $a = -0.604877 - 0.506844I$ $b = -1.00000$	$-0.98010 - 7.64338I$	$6.92132 + 4.56334I$
$u = -0.547424 - 1.120870I$ $a = -0.604877 + 0.506844I$ $b = -1.00000$	$-0.98010 + 7.64338I$	$6.92132 - 4.56334I$

III.

$$\boldsymbol{I^u_3 = \langle b+1,\ 2u^5+u^4+3u^3+2u^2+a+2u+3,\ u^6+u^5+2u^4+2u^3+2u^2+2u+1\rangle}$$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

$$a_{11} = \begin{pmatrix} -2u^5-u^4-3u^3-2u^2-2u-3 \\ -1 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -2u^5-u^4-3u^3-2u^2-2u-3 \\ -1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -2u^5-u^4-3u^3-2u^2-2u-2 \\ -1 \end{pmatrix}$$

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

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

$$a_3 = \begin{pmatrix} u^5+2u^3+u \\ u^5+u^3+u \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2u^5-u^4-8u^3-u^2-7u+4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 0.498832 + 1.001300I$ $a = -0.518694 + 0.637866I$ $b = -1.00000$	$1.37919 + 2.82812I$	$10.11473 - 2.08748I$
$u = \quad 0.498832 - 1.001300I$ $a = -0.518694 - 0.637866I$ $b = -1.00000$	$1.37919 - 2.82812I$	$10.11473 + 2.08748I$
$u = -0.284920 + 1.115140I$ $a = -0.337641 - 0.362106I$ $b = -1.00000$	-2.75839	$1.72561 - 0.99756I$
$u = -0.284920 - 1.115140I$ $a = -0.337641 + 0.362106I$ $b = -1.00000$	-2.75839	$1.72561 + 0.99756I$
$u = -0.713912 + 0.305839I$ $a = -2.14366 - 1.20015I$ $b = -1.00000$	$1.37919 + 2.82812I$	$9.65966 - 5.36114I$
$u = -0.713912 - 0.305839I$ $a = -2.14366 + 1.20015I$ $b = -1.00000$	$1.37919 - 2.82812I$	$9.65966 + 5.36114I$

IV. $I_1^v = \langle a,\ -v^3+8b-13,\ v^4-3v^3+8v^2-3v+1\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ \frac{1}{8}v^3+\frac{13}{8} \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} \frac{1}{8}v^3+\frac{13}{8} \\ \frac{1}{8}v^3+\frac{13}{8} \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -\frac{1}{8}v^3-\frac{13}{8} \\ -\frac{1}{8}v^3-\frac{21}{8} \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1 \\ -\frac{1}{8}v^3-\frac{21}{8} \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ \frac{1}{8}v^3+\frac{21}{8} \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -\frac{3}{8}v^3+v^2-2v+\frac{1}{8} \\ -\frac{9}{8}v^3+3v^2-8v+\frac{3}{8} \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -\frac{1}{4}v^3+v^2-2v-\frac{1}{4} \\ -\frac{9}{8}v^3+3v^2-8v+\frac{3}{8} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{9}{2}v^3-13v^2+33v+\frac{17}{2}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 0.190983 + 0.330792I$ $a = 0$ $b = 1.61803$	$8.88264 - 2.02988I$	$15.5000 + 9.2736I$
$v = 0.190983 - 0.330792I$ $a = 0$ $b = 1.61803$	$8.88264 + 2.02988I$	$15.5000 - 9.2736I$
$v = 1.30902 + 2.26728I$ $a = 0$ $b = -0.618034$	$0.98696 - 2.02988I$	$15.5000 - 2.3454I$
$v = 1.30902 - 2.26728I$ $a = 0$ $b = -0.618034$	$0.98696 + 2.02988I$	$15.5000 + 2.3454I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^2-u+1)^2(u^4-2u^3+3u^2-u+1)(u^6-3u^5+4u^4-2u^3+1)$ $\cdot(u^{96}+44u^{95}+\cdots-56u+1)$
c_2	$(u^2+u+1)^2(u^4+u^2+u+1)(u^6-u^5+2u^4-2u^3+2u^2-2u+1)$ $\cdot(u^{96}+4u^{95}+\cdots-28u^2+1)$
c_3	$(u^2-u+1)^2(u^3-u^2+1)^2(u^4+3u^3+4u^2+3u+2)$ $\cdot(u^{96}-4u^{95}+\cdots-780u+36)$
c_4	$u^4(u^4+u^2+u+1)(u^6-u^5+2u^4-2u^3+2u^2-2u+1)$ $\cdot(u^{96}-2u^{95}+\cdots-112u+16)$
c_5	$(u^2-u+1)^2(u^4+u^2-u+1)(u^6+u^5+2u^4+2u^3+2u^2+2u+1)$ $\cdot(u^{96}+4u^{95}+\cdots-28u^2+1)$
c_6	$u^{10}(u^2-u-1)^2(u^{96}-3u^{95}+\cdots+2048u-1024)$
c_7	$u^4(u^4-2u^3+3u^2-u+1)(u^6-3u^5+4u^4-2u^3+1)$ $\cdot(u^{96}+30u^{95}+\cdots+2944u+256)$
c_8	$u^4(u^4+u^2-u+1)(u^6+u^5+2u^4+2u^3+2u^2+2u+1)$ $\cdot(u^{96}-2u^{95}+\cdots-112u+16)$
c_9, c_{10}	$((u+1)^{10})(u^2-u-1)^2(u^{96}+13u^{95}+\cdots-7u-1)$
c_{11}	$u^{10}(u^2+u-1)^2(u^{96}-3u^{95}+\cdots+2048u-1024)$
c_{12}	$((u-1)^{10})(u^2+u-1)^2(u^{96}+13u^{95}+\cdots-7u-1)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^2+y+1)^2)(y^4+2y^3+\cdots+5y+1)(y^6-y^5+\cdots+8y^2+1)$ $\cdot(y^{96}+20y^{95}+\cdots-3584y+1)$
c_2, c_5	$(y^2+y+1)^2(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^{96}+44y^{95}+\cdots-56y+1)$
c_3	$(y^2+y+1)^2(y^3-y^2+2y-1)^2(y^4-y^3+2y^2+7y+4)$ $\cdot(y^{96}-4y^{95}+\cdots-148392y+1296)$
c_4, c_8	$y^4(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^{96}+30y^{95}+\cdots+2944y+256)$
c_6, c_{11}	$y^{10}(y^2-3y+1)^2(y^{96}-69y^{95}+\cdots-2621440y+1048576)$
c_7	$y^4(y^4+2y^3+7y^2+5y+1)(y^6-y^5+4y^4-2y^3+8y^2+1)$ $\cdot(y^{96}+66y^{95}+\cdots-5578752y+65536)$
c_9, c_{10}, c_{12}	$((y-1)^{10})(y^2-3y+1)^2(y^{96}-99y^{95}+\cdots-59y+1)$