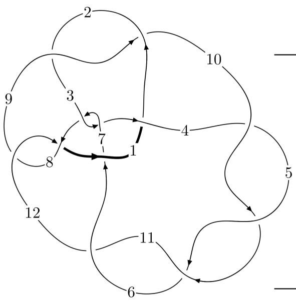
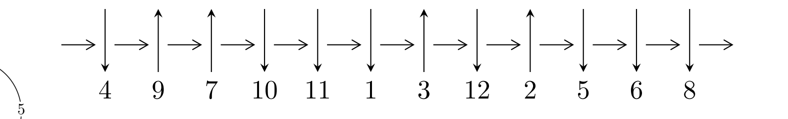
$12a_{1153}$ ($K12a_{1153}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 7.92523 \times 10^{127} u^{89} + 3.07371 \times 10^{128} u^{88} + \cdots + 5.59035 \times 10^{128} b + 1.35846 \times 10^{130}, \\
& -2.38182 \times 10^{128} u^{89} + 6.32318 \times 10^{129} u^{88} + \cdots + 6.42890 \times 10^{129} a + 1.54116 \times 10^{131}, \\
& u^{90} - u^{89} + \cdots + 42u - 23 \rangle \\
I_2^u = \langle & u^{19} - u^{18} + \cdots + b - u,\ -u^{19} + u^{18} + \cdots + a - u,\ u^{20} - 2u^{19} + \cdots - 7u^2 + 1 \rangle \\
I_3^u = \langle & 2b - a - 1,\ a^2 + 3,\ u + 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 112 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. $\boldsymbol{I^u_1 = \langle 7.93 \times 10^{127} u^{89} + 3.07 \times 10^{128} u^{88} + \cdots + 5.59 \times 10^{128} b + 1.36 \times 10^{130},\ -2.38 \times 10^{128} u^{89} + 6.32 \times 10^{129} u^{88} + \cdots + 6.43 \times 10^{129} a + 1.54 \times 10^{131},\ u^{90} - u^{89} + \cdots + 42u - 23 \rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.0370486u^{89} - 0.983555u^{88} + \cdots + 46.7107u - 23.9724 \\ -0.141766u^{89} - 0.549825u^{88} + \cdots + 26.6619u - 24.3001 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.154839u^{89} - 0.652648u^{88} + \cdots + 31.8915u - 18.1094 \\ -0.0239759u^{89} - 0.218917u^{88} + \cdots + 11.8427u - 18.4371 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.246377u^{89} - 0.228324u^{88} + \cdots + 12.1157u + 8.38131 \\ -0.916252u^{89} + 0.319252u^{88} + \cdots - 15.5123u - 10.8053 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.501815u^{89} + 0.758825u^{88} + \cdots - 42.7975u + 32.0231 \\ -0.197294u^{89} + 1.30218u^{88} + \cdots - 76.8115u + 9.02154 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.0157211u^{89} - 0.164426u^{88} + \cdots + 9.47923u - 22.2811 \\ 0.281354u^{89} - 0.146535u^{88} + \cdots + 7.20437u + 20.3485 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.0160725u^{89} - 0.401426u^{88} + \cdots + 17.9232u - 9.14048 \\ -0.0306325u^{89} - 0.222591u^{88} + \cdots + 6.58810u + 23.5750 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -1.20940u^{89} + 1.41711u^{88} + \cdots - 91.7193u + 35.6522$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{90} - 5u^{89} + \cdots - 37888032u + 5971091$
c_2, c_9	$u^{90} + u^{89} + \cdots - 37544u - 17471$
c_3, c_7	$u^{90} - 3u^{89} + \cdots + 642u - 241$
c_4, c_5, c_{10} c_{11}	$u^{90} + u^{89} + \cdots - 42u - 23$
c_6	$u^{90} - u^{89} + \cdots - 383961u - 84943$
c_8, c_{12}	$u^{90} + 3u^{89} + \cdots - 4u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{90} - 49y^{89} + \cdots - 1076958384213138y + 35653927730281$
c_2, c_9	$y^{90} + 79y^{89} + \cdots + 6461797462y + 305235841$
c_3, c_7	$y^{90} + 59y^{89} + \cdots + 1230010y + 58081$
c_4, c_5, c_{10} c_{11}	$y^{90} - 113y^{89} + \cdots - 12666y + 529$
c_6	$y^{90} - 23y^{89} + \cdots - 105154505343y + 7215313249$
c_8, c_{12}	$y^{90} + 45y^{89} + \cdots + 76y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.012970 + 0.095264I$ $a = -0.077161 - 1.261250I$ $b = 0.71779 - 1.34685I$	$-5.25522 - 3.65690I$	0
$u = 1.012970 - 0.095264I$ $a = -0.077161 + 1.261250I$ $b = 0.71779 + 1.34685I$	$-5.25522 + 3.65690I$	0
$u = 0.857581 + 0.461252I$ $a = -1.45181 - 1.18703I$ $b = 0.328398 - 1.371680I$	$-8.90905 - 6.49876I$	0
$u = 0.857581 - 0.461252I$ $a = -1.45181 + 1.18703I$ $b = 0.328398 + 1.371680I$	$-8.90905 + 6.49876I$	0
$u = -0.949097 + 0.212026I$ $a = -0.61914 + 1.31760I$ $b = 0.478508 + 0.868615I$	$-3.71502 + 2.89112I$	0
$u = -0.949097 - 0.212026I$ $a = -0.61914 - 1.31760I$ $b = 0.478508 - 0.868615I$	$-3.71502 - 2.89112I$	0
$u = -0.758287 + 0.530225I$ $a = 1.031630 - 0.931605I$ $b = -0.00618 - 1.50531I$	$-8.33159 + 1.02539I$	0
$u = -0.758287 - 0.530225I$ $a = 1.031630 + 0.931605I$ $b = -0.00618 + 1.50531I$	$-8.33159 - 1.02539I$	0
$u = -0.905905 + 0.175822I$ $a = -0.552584 + 1.000800I$ $b = 0.560162 + 0.490336I$	$-3.65291 + 2.91212I$	0
$u = -0.905905 - 0.175822I$ $a = -0.552584 - 1.000800I$ $b = 0.560162 - 0.490336I$	$-3.65291 - 2.91212I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.909719+0.579164I$ $a=0.94929-1.26410I$ $b=-0.50964-1.44518I$	$-6.3264+13.2229I$	0
$u=-0.909719-0.579164I$ $a=0.94929+1.26410I$ $b=-0.50964+1.44518I$	$-6.3264-13.2229I$	0
$u=0.888563+0.619652I$ $a=0.83455+1.14442I$ $b=-0.316840+1.346050I$	$-2.42194-6.81135I$	0
$u=0.888563-0.619652I$ $a=0.83455-1.14442I$ $b=-0.316840-1.346050I$	$-2.42194+6.81135I$	0
$u=0.115526+0.862957I$ $a=0.192538+0.083063I$ $b=0.173180+1.221970I$	$-0.04214+1.86425I$	0
$u=0.115526-0.862957I$ $a=0.192538-0.083063I$ $b=0.173180-1.221970I$	$-0.04214-1.86425I$	0
$u=0.981169+0.591185I$ $a=-0.956676-0.747354I$ $b=-0.140122-1.272130I$	$-6.57746+3.74120I$	0
$u=0.981169-0.591185I$ $a=-0.956676+0.747354I$ $b=-0.140122+1.272130I$	$-6.57746-3.74120I$	0
$u=-1.076100+0.414278I$ $a=-0.89733+1.13386I$ $b=0.062943+1.084810I$	$-3.86394+2.62701I$	0
$u=-1.076100-0.414278I$ $a=-0.89733-1.13386I$ $b=0.062943-1.084810I$	$-3.86394-2.62701I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.011701 + 0.834793I$ $a = -0.123216 + 0.122071I$ $b = 0.360219 - 1.321610I$	$-3.59507 - 8.53511I$	0
$u = -0.011701 - 0.834793I$ $a = -0.123216 - 0.122071I$ $b = 0.360219 + 1.321610I$	$-3.59507 + 8.53511I$	0
$u = 0.749413 + 0.327729I$ $a = -0.087691 + 0.377673I$ $b = -1.302630 + 0.116841I$	$-1.31373 - 7.06051I$	0
$u = 0.749413 - 0.327729I$ $a = -0.087691 - 0.377673I$ $b = -1.302630 - 0.116841I$	$-1.31373 + 7.06051I$	0
$u = -1.195240 + 0.007025I$ $a = -0.74496 + 1.26726I$ $b = -0.152260 + 0.624422I$	$-3.53900 + 2.66619I$	0
$u = -1.195240 - 0.007025I$ $a = -0.74496 - 1.26726I$ $b = -0.152260 - 0.624422I$	$-3.53900 - 2.66619I$	0
$u = -0.630929 + 0.422737I$ $a = 0.1320450 - 0.0192536I$ $b = -0.736208 - 0.094191I$	$2.14970 + 2.95397I$	$0. - 5.77136I$
$u = -0.630929 - 0.422737I$ $a = 0.1320450 + 0.0192536I$ $b = -0.736208 + 0.094191I$	$2.14970 - 2.95397I$	$0. + 5.77136I$
$u = -0.683833 + 0.159729I$ $a = -0.30569 + 3.42355I$ $b = 0.306313 + 0.952007I$	$-1.89496 + 5.35806I$	$-9.62311 - 9.49203I$
$u = -0.683833 - 0.159729I$ $a = -0.30569 - 3.42355I$ $b = 0.306313 - 0.952007I$	$-1.89496 - 5.35806I$	$-9.62311 + 9.49203I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.438158+0.548624I$ $a=\ \ 0.972243+0.724630I$ $b=-0.148755-1.072620I$	$-0.18298+1.88594I$	$-8.05875-4.24644I$
$u=-0.438158-0.548624I$ $a=\ \ 0.972243-0.724630I$ $b=-0.148755+1.072620I$	$-0.18298-1.88594I$	$-8.05875+4.24644I$
$u=\ \ 0.540460+0.448177I$ $a=\ \ 0.541123-0.872191I$ $b=\ \ 0.484861+0.598278I$	$-1.06587-2.16161I$	$-7.84161+4.07570I$
$u=\ \ 0.540460-0.448177I$ $a=\ \ 0.541123+0.872191I$ $b=\ \ 0.484861-0.598278I$	$-1.06587+2.16161I$	$-7.84161-4.07570I$
$u=\ \ 0.691662$ $a=-0.137190$ $b=\ \ 0.501893$	-1.21324	-7.56480
$u=-0.674141+0.102515I$ $a=\ \ 1.00488-1.94243I$ $b=-0.25194-1.83276I$	$-7.28568+0.43053I$	$-12.84317+4.45391I$
$u=-0.674141-0.102515I$ $a=\ \ 1.00488+1.94243I$ $b=-0.25194+1.83276I$	$-7.28568-0.43053I$	$-12.84317-4.45391I$
$u=\ \ 0.673258+0.060594I$ $a=\ \ 1.05103-2.74686I$ $b=\ \ 0.047191-1.063590I$	$-0.669088-1.009510I$	$-8.02815+0.51628I$
$u=\ \ 0.673258-0.060594I$ $a=\ \ 1.05103+2.74686I$ $b=\ \ 0.047191+1.063590I$	$-0.669088+1.009510I$	$-8.02815-0.51628I$
$u=-0.033569+0.644884I$ $a=\ \ 0.604100+0.465382I$ $b=-0.125543-1.364100I$	$-6.24678+2.78122I$	$-9.13407-2.15165I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.033569 - 0.644884I$ $a = 0.604100 - 0.465382I$ $b = -0.125543 + 1.364100I$	$-6.24678 - 2.78122I$	$-9.13407 + 2.15165I$
$u = -0.303612 + 0.561553I$ $a = -0.118298 + 1.016180I$ $b = 0.433202 + 0.176963I$	$3.15527 + 0.45173I$	$2.37144 - 2.33678I$
$u = -0.303612 - 0.561553I$ $a = -0.118298 - 1.016180I$ $b = 0.433202 - 0.176963I$	$3.15527 - 0.45173I$	$2.37144 + 2.33678I$
$u = 1.40345 + 0.22038I$ $a = -0.202364 + 0.963975I$ $b = -0.093332 + 0.518362I$	$-2.28469 - 3.22073I$	0
$u = 1.40345 - 0.22038I$ $a = -0.202364 - 0.963975I$ $b = -0.093332 - 0.518362I$	$-2.28469 + 3.22073I$	0
$u = 1.50828 + 0.07397I$ $a = -0.449420 - 0.256556I$ $b = 0.443654 - 0.858953I$	$-6.34987 - 3.87000I$	0
$u = 1.50828 - 0.07397I$ $a = -0.449420 + 0.256556I$ $b = 0.443654 + 0.858953I$	$-6.34987 + 3.87000I$	0
$u = 0.144300 + 0.451946I$ $a = -0.51701 - 1.95209I$ $b = 0.804357 - 0.071594I$	$0.48887 + 4.31858I$	$-0.92438 - 2.28385I$
$u = 0.144300 - 0.451946I$ $a = -0.51701 + 1.95209I$ $b = 0.804357 + 0.071594I$	$0.48887 - 4.31858I$	$-0.92438 + 2.28385I$
$u = 0.222649 + 0.417701I$ $a = 1.208810 - 0.224028I$ $b = -0.549524 + 0.619458I$	$-0.305635 - 0.881854I$	$-4.92602 + 3.47601I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.222649 - 0.417701I$ $a = 1.208810 + 0.224028I$ $b = -0.549524 - 0.619458I$	$-0.305635 + 0.881854I$	$-4.92602 - 3.47601I$
$u = -1.53355 + 0.11529I$ $a = -0.612137 - 0.121716I$ $b = -0.316181 + 0.577678I$	$-7.97086 + 4.15764I$	0
$u = -1.53355 - 0.11529I$ $a = -0.612137 + 0.121716I$ $b = -0.316181 - 0.577678I$	$-7.97086 - 4.15764I$	0
$u = 0.455234 + 0.019153I$ $a = 1.86166 + 0.55835I$ $b = -0.503361 + 0.850806I$	$0.087702 - 0.656020I$	$-8.74359 - 0.87707I$
$u = 0.455234 - 0.019153I$ $a = 1.86166 - 0.55835I$ $b = -0.503361 - 0.850806I$	$0.087702 + 0.656020I$	$-8.74359 + 0.87707I$
$u = -1.58900 + 0.02697I$ $a = -0.263885 + 1.064150I$ $b = 0.805040 + 0.921807I$	$-7.18439 + 0.98071I$	0
$u = -1.58900 - 0.02697I$ $a = -0.263885 - 1.064150I$ $b = 0.805040 - 0.921807I$	$-7.18439 - 0.98071I$	0
$u = 1.59941 + 0.09338I$ $a = 0.354560 - 0.276286I$ $b = 1.000530 - 0.274393I$	$-5.48344 - 4.72712I$	0
$u = 1.59941 - 0.09338I$ $a = 0.354560 + 0.276286I$ $b = 1.000530 + 0.274393I$	$-5.48344 + 4.72712I$	0
$u = 0.186645 + 0.338776I$ $a = 1.176650 - 0.184939I$ $b = -0.277893 + 0.577578I$	$-0.293445 - 0.966895I$	$-5.72850 + 6.30392I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.186645 - 0.338776I$ $a = 1.176650 + 0.184939I$ $b = -0.277893 - 0.577578I$	$-0.293445 + 0.966895I$	$-5.72850 - 6.30392I$
$u = -0.287943 + 0.234517I$ $a = 1.82271 - 0.65644I$ $b = -0.624740 + 0.858555I$	$-0.80294 - 3.88261I$	$-4.29656 - 1.29503I$
$u = -0.287943 - 0.234517I$ $a = 1.82271 + 0.65644I$ $b = -0.624740 - 0.858555I$	$-0.80294 + 3.88261I$	$-4.29656 + 1.29503I$
$u = -1.63002 + 0.01524I$ $a = -0.37399 - 2.31738I$ $b = 0.119340 - 1.308960I$	$-8.78831 + 1.28372I$	0
$u = -1.63002 - 0.01524I$ $a = -0.37399 + 2.31738I$ $b = 0.119340 + 1.308960I$	$-8.78831 - 1.28372I$	0
$u = 1.63236 + 0.03832I$ $a = -0.09253 + 2.59020I$ $b = -0.181723 + 1.182940I$	$-10.04520 - 6.06116I$	0
$u = 1.63236 - 0.03832I$ $a = -0.09253 - 2.59020I$ $b = -0.181723 - 1.182940I$	$-10.04520 + 6.06116I$	0
$u = -1.63618$ $a = -0.235304$ $b = -0.875768$	-9.43889	0
$u = 1.63978 + 0.01940I$ $a = -0.01052 - 2.33295I$ $b = 0.53247 - 1.99550I$	$-15.5099 - 0.8376I$	0
$u = 1.63978 - 0.01940I$ $a = -0.01052 + 2.33295I$ $b = 0.53247 + 1.99550I$	$-15.5099 + 0.8376I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.64318 + 0.08271I$ $a = 0.970520 + 0.369129I$ $b = 1.64897 + 0.16956I$	$-9.64971 + 8.56439I$	0
$u = -1.64318 - 0.08271I$ $a = 0.970520 - 0.369129I$ $b = 1.64897 - 0.16956I$	$-9.64971 - 8.56439I$	0
$u = 1.64607 + 0.17474I$ $a = -0.63968 - 1.88241I$ $b = 0.09702 - 1.62425I$	$-16.5366 - 3.8070I$	0
$u = 1.64607 - 0.17474I$ $a = -0.63968 + 1.88241I$ $b = 0.09702 + 1.62425I$	$-16.5366 + 3.8070I$	0
$u = 1.66541 + 0.03233I$ $a = -0.060097 + 0.537563I$ $b = -0.879840 + 0.217747I$	$-12.60920 - 3.59916I$	0
$u = 1.66541 - 0.03233I$ $a = -0.060097 - 0.537563I$ $b = -0.879840 - 0.217747I$	$-12.60920 + 3.59916I$	0
$u = -1.66382 + 0.13223I$ $a = 0.72905 - 1.80069I$ $b = -0.48612 - 1.42287I$	$-17.6040 + 8.8049I$	0
$u = -1.66382 - 0.13223I$ $a = 0.72905 + 1.80069I$ $b = -0.48612 + 1.42287I$	$-17.6040 - 8.8049I$	0
$u = -1.68038 + 0.17715I$ $a = -0.46078 + 1.91226I$ $b = 0.41651 + 1.49721I$	$-11.2168 + 9.9098I$	0
$u = -1.68038 - 0.17715I$ $a = -0.46078 - 1.91226I$ $b = 0.41651 - 1.49721I$	$-11.2168 - 9.9098I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.68472 + 0.16892I$ $a = -0.42408 - 1.97664I$ $b = 0.61190 - 1.57435I$	$-15.2323 - 16.1682I$	0
$u = 1.68472 - 0.16892I$ $a = -0.42408 + 1.97664I$ $b = 0.61190 + 1.57435I$	$-15.2323 + 16.1682I$	0
$u = 1.69447 + 0.10434I$ $a = 0.47504 + 1.73465I$ $b = -0.396008 + 1.266770I$	$-13.37100 - 4.57563I$	0
$u = 1.69447 - 0.10434I$ $a = 0.47504 - 1.73465I$ $b = -0.396008 - 1.266770I$	$-13.37100 + 4.57563I$	0
$u = 1.70372 + 0.05355I$ $a = 0.01280 + 1.54850I$ $b = -0.721684 + 1.064470I$	$-13.13290 - 3.93184I$	0
$u = 1.70372 - 0.05355I$ $a = 0.01280 - 1.54850I$ $b = -0.721684 - 1.064470I$	$-13.13290 + 3.93184I$	0
$u = -1.70643 + 0.03143I$ $a = -0.37326 - 1.89806I$ $b = -0.89338 - 1.67140I$	$-14.8726 + 4.2127I$	0
$u = -1.70643 - 0.03143I$ $a = -0.37326 + 1.89806I$ $b = -0.89338 + 1.67140I$	$-14.8726 - 4.2127I$	0
$u = -1.72856 + 0.14953I$ $a = 0.56663 - 1.47750I$ $b = -0.131725 - 1.304230I$	$-16.0616 - 0.7646I$	0
$u = -1.72856 - 0.14953I$ $a = 0.56663 + 1.47750I$ $b = -0.131725 + 1.304230I$	$-16.0616 + 0.7646I$	0

II.

$$\boldsymbol{I_2^u = \langle u^{19} - u^{18} + \cdots + b - u,\ -u^{19} + u^{18} + \cdots + a - u,\ u^{20} - 2u^{19} + \cdots - 7u^2 + 1\rangle}$$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} u^{19} - u^{18} + \cdots - 7u^2 + u \\ -u^{19} + u^{18} + \cdots - 3u^2 + u \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -2u^{19} + u^{18} + \cdots + 3u + 2 \\ -4u^{19} + 3u^{18} + \cdots + 3u + 2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -2u^{19} + 2u^{18} + \cdots + 3u + 1 \\ -2u^{19} + u^{18} + \cdots + 2u + 3 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^{16} + u^{15} + \cdots + 6u - 1 \\ u^{19} - 2u^{18} + \cdots - u - 2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 2u^{19} - 3u^{18} + \cdots - 7u - 1 \\ -u^{18} + 13u^{16} + \cdots - 3u - 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -2u^{18} + 25u^{16} + \cdots - 5u + 1 \\ -u^{19} - u^{18} + \cdots - 3u^2 - 2u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= 14u^{19} - 8u^{18} - 182u^{17} + 111u^{16} + 973u^{15} - 643u^{14} - 2726u^{13} + 1996u^{12} + 4164u^{11} - 3523u^{10} - 3100u^9 + 3390u^8 + 456u^7 - 1408u^6 + 581u^5 - 52u^4 - 136u^3 + 102u^2 + u - 21$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{20} - 7u^{19} + \cdots - 7u + 1$
c_2	$u^{20} - u^{19} + \cdots + u + 1$
c_3	$u^{20} - u^{19} + \cdots + u + 1$
c_4, c_5	$u^{20} + 2u^{19} + \cdots - 7u^2 + 1$
c_6	$u^{20} + 2u^{19} + \cdots + u + 1$
c_7	$u^{20} + u^{19} + \cdots - u + 1$
c_8	$u^{20} + u^{19} + \cdots - u + 1$
c_9	$u^{20} + u^{19} + \cdots - u + 1$
c_{10}, c_{11}	$u^{20} - 2u^{19} + \cdots - 7u^2 + 1$
c_{12}	$u^{20} - u^{19} + \cdots + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{20} - 3y^{19} + \cdots - 5y + 1$
c_2, c_9	$y^{20} + 21y^{19} + \cdots + 15y + 1$
c_3, c_7	$y^{20} + 13y^{19} + \cdots + 11y + 1$
c_4, c_5, c_{10} c_{11}	$y^{20} - 28y^{19} + \cdots - 14y + 1$
c_6	$y^{20} + 2y^{19} + \cdots + 9y + 1$
c_8, c_{12}	$y^{20} + 15y^{19} + \cdots + 21y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.236780 + 0.257246I$ $a = -0.160920 + 1.140040I$ $b = 0.304832 + 0.961803I$	$-2.96433 + 4.09234I$	$-8.21729 - 6.76865I$
$u = -1.236780 - 0.257246I$ $a = -0.160920 - 1.140040I$ $b = 0.304832 - 0.961803I$	$-2.96433 - 4.09234I$	$-8.21729 + 6.76865I$
$u = 0.676350 + 0.266205I$ $a = -0.97121 - 1.61423I$ $b = 0.16047 - 1.77044I$	$-7.09778 - 0.93539I$	$-6.18058 + 8.72308I$
$u = 0.676350 - 0.266205I$ $a = -0.97121 + 1.61423I$ $b = 0.16047 + 1.77044I$	$-7.09778 + 0.93539I$	$-6.18058 - 8.72308I$
$u = 1.366380 + 0.211467I$ $a = 0.58002 + 1.30951I$ $b = 0.344378 + 1.031880I$	$-3.26524 - 1.54191I$	$-7.52291 - 2.90402I$
$u = 1.366380 - 0.211467I$ $a = 0.58002 - 1.30951I$ $b = 0.344378 - 1.031880I$	$-3.26524 + 1.54191I$	$-7.52291 + 2.90402I$
$u = 0.467911 + 0.387225I$ $a = 1.13017 - 1.14976I$ $b = -0.147056 + 0.694920I$	$0.91339 - 1.46665I$	$-0.60659 + 3.36448I$
$u = 0.467911 - 0.387225I$ $a = 1.13017 + 1.14976I$ $b = -0.147056 - 0.694920I$	$0.91339 + 1.46665I$	$-0.60659 - 3.36448I$
$u = 0.040099 + 0.531181I$ $a = -0.496026 - 0.240428I$ $b = -0.253507 + 0.945631I$	$1.15814 - 0.98852I$	$-0.555070 + 1.124089I$
$u = 0.040099 - 0.531181I$ $a = -0.496026 + 0.240428I$ $b = -0.253507 - 0.945631I$	$1.15814 + 0.98852I$	$-0.555070 - 1.124089I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.53052 + 0.04941I$ $a = 0.340914 + 0.433719I$ $b = 0.436448 - 0.482124I$	$-7.53461 - 5.30221I$	$-9.13332 + 7.29862I$
$u = 1.53052 - 0.04941I$ $a = 0.340914 - 0.433719I$ $b = 0.436448 + 0.482124I$	$-7.53461 + 5.30221I$	$-9.13332 - 7.29862I$
$u = -1.55472 + 0.09338I$ $a = -0.710342 - 0.085200I$ $b = 0.248590 + 0.542254I$	$-6.02214 + 3.05677I$	$-5.71579 + 1.69066I$
$u = -1.55472 - 0.09338I$ $a = -0.710342 + 0.085200I$ $b = 0.248590 - 0.542254I$	$-6.02214 - 3.05677I$	$-5.71579 - 1.69066I$
$u = -0.336288 + 0.122318I$ $a = -1.74662 + 2.45740I$ $b = -0.475237 - 0.606200I$	$-1.00182 + 4.64059I$	$-7.03732 - 7.06030I$
$u = -0.336288 - 0.122318I$ $a = -1.74662 - 2.45740I$ $b = -0.475237 + 0.606200I$	$-1.00182 - 4.64059I$	$-7.03732 + 7.06030I$
$u = -1.66475 + 0.07750I$ $a = 0.09942 - 2.10149I$ $b = -0.43525 - 1.80930I$	$-15.4766 + 2.2859I$	$-11.50746 - 1.72176I$
$u = -1.66475 - 0.07750I$ $a = 0.09942 + 2.10149I$ $b = -0.43525 + 1.80930I$	$-15.4766 - 2.2859I$	$-11.50746 + 1.72176I$
$u = 1.71129 + 0.03601I$ $a = -0.06541 + 1.69236I$ $b = -0.683669 + 1.135430I$	$-12.99190 - 4.52813I$	$-8.52367 + 9.83951I$
$u = 1.71129 - 0.03601I$ $a = -0.06541 - 1.69236I$ $b = -0.683669 - 1.135430I$	$-12.99190 + 4.52813I$	$-8.52367 - 9.83951I$

III. $I_3^u = \langle 2b - a - 1,\ a^2 + 3,\ u + 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4a - 9$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = 1.73205I$ $b = 0.500000 + 0.866025I$	$-3.28987 + 4.05977I$	$-9.00000 - 6.92820I$
$u = -1.00000$ $a = -1.73205I$ $b = 0.500000 - 0.866025I$	$-3.28987 - 4.05977I$	$-9.00000 + 6.92820I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^2-u+1)(u^{20}-7u^{19}+\cdots-7u+1)$ $\cdot\,(u^{90}-5u^{89}+\cdots-37888032u+5971091)$
c_2	$(u^2+u+1)(u^{20}-u^{19}+\cdots+u+1)(u^{90}+u^{89}+\cdots-37544u-17471)$
c_3	$(u^2-u+1)(u^{20}-u^{19}+\cdots+u+1)(u^{90}-3u^{89}+\cdots+642u-241)$
c_4, c_5	$((u-1)^2)(u^{20}+2u^{19}+\cdots-7u^2+1)(u^{90}+u^{89}+\cdots-42u-23)$
c_6	$((u-1)^2)(u^{20}+2u^{19}+\cdots+u+1)(u^{90}-u^{89}+\cdots-383961u-84943)$
c_7	$(u^2+u+1)(u^{20}+u^{19}+\cdots-u+1)(u^{90}-3u^{89}+\cdots+642u-241)$
c_8	$(u^2+u+1)(u^{20}+u^{19}+\cdots-u+1)(u^{90}+3u^{89}+\cdots-4u-1)$
c_9	$(u^2-u+1)(u^{20}+u^{19}+\cdots-u+1)(u^{90}+u^{89}+\cdots-37544u-17471)$
c_{10}, c_{11}	$((u+1)^2)(u^{20}-2u^{19}+\cdots-7u^2+1)(u^{90}+u^{89}+\cdots-42u-23)$
c_{12}	$(u^2-u+1)(u^{20}-u^{19}+\cdots+u+1)(u^{90}+3u^{89}+\cdots-4u-1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^2+y+1)(y^{20}-3y^{19}+\cdots-5y+1)$ $\cdot(y^{90}-49y^{89}+\cdots-1076958384213138y+35653927730281)$
c_2, c_9	$(y^2+y+1)(y^{20}+21y^{19}+\cdots+15y+1)$ $\cdot(y^{90}+79y^{89}+\cdots+6461797462y+305235841)$
c_3, c_7	$(y^2+y+1)(y^{20}+13y^{19}+\cdots+11y+1)$ $\cdot(y^{90}+59y^{89}+\cdots+1230010y+58081)$
c_4, c_5, c_{10} c_{11}	$((y-1)^2)(y^{20}-28y^{19}+\cdots-14y+1)$ $\cdot(y^{90}-113y^{89}+\cdots-12666y+529)$
c_6	$((y-1)^2)(y^{20}+2y^{19}+\cdots+9y+1)$ $\cdot(y^{90}-23y^{89}+\cdots-105154505343y+7215313249)$
c_8, c_{12}	$(y^2+y+1)(y^{20}+15y^{19}+\cdots+21y+1)(y^{90}+45y^{89}+\cdots+76y+1)$