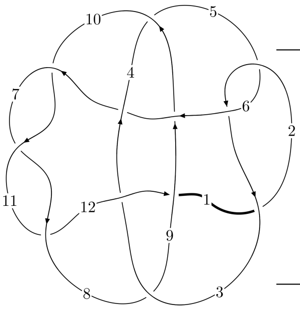
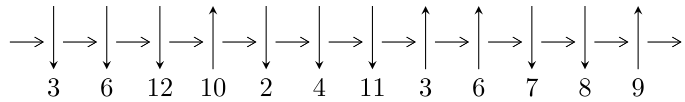
$12n_{0438}$ ($K12n_{0438}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 9586u^{11} - 3055u^{10} + \cdots + 9038b - 18587,\ -55772u^{11} + 21076u^{10} + \cdots + 4519a + 136449,$$
$$u^{12} + 9u^{10} + u^9 + 13u^8 + 3u^7 - 37u^6 - 8u^5 - u^4 + 13u^3 + 7u^2 - 2u - 1\rangle$$
$$I_2^u = \langle 23u^7 - 19u^6 + 114u^5 - 105u^4 + 47u^3 - 42u^2 + 83b - 10u - 77,$$
$$67u^7 - 77u^6 + 379u^5 - 443u^4 + 422u^3 - 310u^2 + 83a + 191u - 347,\ u^8 + 6u^6 + 8u^4 + 3u^3 + 7u^2 + u + 1\rangle$$
$$I_3^u = \langle 220741u^{11} + 352170u^{10} + \cdots + 4894159b + 8758441,$$
$$-6799412u^{11} + 191458u^{10} + \cdots + 4894159a + 38864844,$$
$$u^{12} + 13u^{10} - u^9 + 61u^8 - 7u^7 + 121u^6 - 12u^5 + 96u^4 - 21u^3 + 34u^2 - 5u + 1\rangle$$
$$I_4^u = \langle -u^2 + b + u - 1,\ -u^3 + u^2 + a - 2u + 2,\ u^4 - 2u^3 + 3u^2 - 2u - 1\rangle$$
$$I_5^u = \langle b,\ a + u,\ u^2 + u + 1\rangle$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 38 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. $I_1^u = \langle 9586u^{11} - 3055u^{10} + \cdots + 9038b - 18587,\ -55772u^{11} + 21076u^{10} + \cdots + 4519a + 136449,\ u^{12} + 9u^{10} + \cdots - 2u - 1\rangle$

(i) Arc colorings

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

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

$$a_9 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 12.3417u^{11} - 4.66386u^{10} + \cdots + 18.7431u - 30.1945 \\ -1.06063u^{11} + 0.338017u^{10} + \cdots - 1.12669u + 2.05654 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 13.4023u^{11} - 5.00188u^{10} + \cdots + 19.8698u - 32.2511 \\ -1.06063u^{11} + 0.338017u^{10} + \cdots - 1.12669u + 2.05654 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -7.52003u^{11} + 3.05964u^{10} + \cdots - 7.40042u + 16.9010 \\ -3.22129u^{11} + 1.14240u^{10} + \cdots - 3.67039u + 7.94722 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 14.4826u^{11} - 5.40407u^{10} + \cdots + 22.1416u - 35.1964 \\ -1.23069u^{11} + 0.347201u^{10} + \cdots - 1.40263u + 2.45873 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 6.68843u^{11} - 2.59150u^{10} + \cdots + 10.4001u - 16.2423 \\ -1.25880u^{11} + 0.629785u^{10} + \cdots - 1.01427u + 3.32253 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -7.16254u^{11} + 2.94534u^{10} + \cdots - 8.99015u + 20.2930 \\ -u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 14.4826u^{11} - 5.40407u^{10} + \cdots + 22.1416u - 35.1964 \\ 1.08033u^{11} - 0.402191u^{10} + \cdots + 2.27185u - 2.94534 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 10.9114u^{11} - 4.21122u^{10} + \cdots + 11.3468u - 25.2504 \\ 3.39135u^{11} - 1.15158u^{10} + \cdots + 3.94634u - 8.34941 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 8.34941u^{11} - 3.39135u^{10} + \cdots + 12.1990u - 20.6452 \\ 0.402191u^{11} - 0.170060u^{10} + \cdots + 0.784687u - 1.08033 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{37615}{9038}u^{11} - \frac{13351}{4519}u^{10} + \frac{172836}{4519}u^9 - \frac{209101}{9038}u^8 + \frac{263227}{4519}u^7 - \frac{290229}{9038}u^6 - \frac{1386017}{9038}u^5 + \frac{583207}{9038}u^4 - \frac{56976}{4519}u^3 + \frac{639833}{9038}u^2 - \frac{58931}{9038}u - \frac{151555}{9038}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{12} + 37u^{11} + \cdots + 6273u + 64$
c_2, c_5	$u^{12} + 9u^{11} + \cdots - 57u + 8$
c_3, c_6	$u^{12} - 2u^{11} + \cdots - 3u - 1$
c_4, c_8	$u^{12} + 9u^{10} - u^9 + 13u^8 - 3u^7 - 37u^6 + 8u^5 - u^4 - 13u^3 + 7u^2 + 2u - 1$
c_7, c_{10}, c_{11}	$u^{12} + 6u^{11} + \cdots + 7u - 2$
c_9, c_{12}	$u^{12} + u^{11} + \cdots + 36u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{12} - 233y^{11} + \cdots - 38719361y + 4096$
c_2, c_5	$y^{12} - 37y^{11} + \cdots - 6273y + 64$
c_3, c_6	$y^{12} - 6y^{11} + \cdots + y + 1$
c_4, c_8	$y^{12} + 18y^{11} + \cdots - 18y + 1$
c_7, c_{10}, c_{11}	$y^{12} - 12y^{11} + \cdots - 109y + 4$
c_9, c_{12}	$y^{12} + 45y^{11} + \cdots - 670y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.04860$ $a = 3.26000$ $b = 1.86936$	-8.03214	-11.1250
$u = -1.19673$ $a = 0.457184$ $b = 1.40652$	-6.56513	-13.9820
$u = 0.785212$ $a = 0.538255$ $b = 1.39001$	-3.33445	-1.37130
$u = -0.237929 + 0.713496I$ $a = 0.839776 + 0.248914I$ $b = 0.549193 + 0.617015I$	$-0.28261 - 1.48442I$	$-3.85780 + 2.07743I$
$u = -0.237929 - 0.713496I$ $a = 0.839776 - 0.248914I$ $b = 0.549193 - 0.617015I$	$-0.28261 + 1.48442I$	$-3.85780 - 2.07743I$
$u = 0.413934$ $a = 1.40772$ $b = -0.208689$	-1.36886	-8.24790
$u = -0.398984 + 0.012900I$ $a = -1.37647 - 2.67835I$ $b = -0.666632 + 0.239214I$	$1.97549 - 2.44144I$	$0.80466 - 1.29895I$
$u = -0.398984 - 0.012900I$ $a = -1.37647 + 2.67835I$ $b = -0.666632 - 0.239214I$	$1.97549 + 2.44144I$	$0.80466 + 1.29895I$
$u = -0.05938 + 2.26410I$ $a = -1.045270 - 0.699289I$ $b = -0.85675 - 1.28813I$	$-15.6479 - 4.2966I$	$-9.24517 + 3.48018I$
$u = -0.05938 - 2.26410I$ $a = -1.045270 + 0.699289I$ $b = -0.85675 + 1.28813I$	$-15.6479 + 4.2966I$	$-9.24517 - 3.48018I$

Solutions to I_1^u		$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.17079+2.29628I$		
$a=$	$2.25039+0.29367I$	$15.3806+10.5658I$	$-8.83901-3.88482I$
$b=$	$1.74558-0.39261I$		
$u=$	$0.17079-2.29628I$		
$a=$	$2.25039-0.29367I$	$15.3806-10.5658I$	$-8.83901+3.88482I$
$b=$	$1.74558+0.39261I$		

II. $\boldsymbol{I_2^u = \langle 23u^7 - 19u^6 + \cdots + 83b - 77,\ 67u^7 - 77u^6 + \cdots + 83a - 347,\ u^8 + 6u^6 + 8u^4 + 3u^3 + 7u^2 + u + 1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.807229u^7 + 0.927711u^6 + \cdots - 2.30120u + 4.18072 \\ -0.277108u^7 + 0.228916u^6 + \cdots + 0.120482u + 0.927711 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.530120u^7 + 0.698795u^6 + \cdots - 2.42169u + 3.25301 \\ -0.277108u^7 + 0.228916u^6 + \cdots + 0.120482u + 0.927711 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -1.74699u^7 - 0.469880u^6 + \cdots - 10.4578u - 3.32530 \\ -0.301205u^7 - 0.0120482u^6 + \cdots - 2.21687u - 0.469880 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.819277u^7 + 0.807229u^6 + \cdots - 2.46988u + 3.48193 \\ -0.361446u^7 + 0.385542u^6 + \cdots - 0.0602410u + 1.03614 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.542169u^7 - 0.578313u^6 + \cdots + 1.59036u - 2.55422 \\ 0.0722892u^7 - 0.277108u^6 + \cdots + 0.0120482u - 0.807229 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -1.27711u^7 + 0.228916u^6 + \cdots - 6.87952u + 0.927711 \\ -u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.819277u^7 + 0.807229u^6 + \cdots - 2.46988u + 3.48193 \\ -0.289157u^7 + 0.108434u^6 + \cdots - 0.0481928u + 0.228916 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -1.96386u^7 - 0.638554u^6 + \cdots - 12.4940u - 3.90361 \\ -0.216867u^7 - 0.168675u^6 + \cdots - 2.03614u - 0.578313 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.578313u^7 + 0.216867u^6 + \cdots - 2.09639u + 1.45783 \\ -0.108434u^7 - 0.0843373u^6 + \cdots - 0.518072u - 0.289157 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{277}{83}u^7 + \frac{114}{83}u^6 + \frac{1640}{83}u^5 + \frac{547}{83}u^4 + \frac{2042}{83}u^3 + \frac{999}{83}u^2 + \frac{2052}{83}u - \frac{285}{83}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^8 - 8u^7 + 18u^6 - 9u^5 + 31u^4 + 18u^3 + 14u^2 + 3u + 1$
c_2	$u^8 + 6u^7 + 14u^6 + 17u^5 + 13u^4 + 8u^3 + 6u^2 + 3u + 1$
c_3, c_6	$u^8 + 2u^7 + 2u^6 - 2u^4 - 3u^3 + 2u + 1$
c_4, c_8	$u^8 + 6u^6 + 8u^4 + 3u^3 + 7u^2 + u + 1$
c_5	$u^8 - 6u^7 + 14u^6 - 17u^5 + 13u^4 - 8u^3 + 6u^2 - 3u + 1$
c_7	$u^8 + 3u^7 + u^6 - 3u^5 + u^3 - 4u^2 - u + 3$
c_9, c_{12}	$u^8 - u^7 + 8u^6 - u^5 + 14u^4 + 5u^3 + 7u^2 + 5u + 1$
c_{10}, c_{11}	$u^8 - 3u^7 + u^6 + 3u^5 - u^3 - 4u^2 + u + 3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^8 - 28y^7 + 242y^6 + 1351y^5 + 1839y^4 + 634y^3 + 150y^2 + 19y + 1$
c_2, c_5	$y^8 - 8y^7 + 18y^6 - 9y^5 + 31y^4 + 18y^3 + 14y^2 + 3y + 1$
c_3, c_6	$y^8 + 4y^5 - 2y^4 - 5y^3 + 8y^2 - 4y + 1$
c_4, c_8	$y^8 + 12y^7 + 52y^6 + 110y^5 + 150y^4 + 115y^3 + 59y^2 + 13y + 1$
c_7, c_{10}, c_{11}	$y^8 - 7y^7 + 19y^6 - 23y^5 + 10y^4 - y^3 + 18y^2 - 25y + 9$
c_9, c_{12}	$y^8 + 15y^7 + 90y^6 + 247y^5 + 330y^4 + 197y^3 + 27y^2 - 11y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.452128 + 0.754240I$ $a = 0.281547 + 0.149763I$ $b = 0.364928 + 0.928632I$	$-0.91626 - 2.11958I$	$-9.09548 + 6.29610I$
$u = -0.452128 - 0.754240I$ $a = 0.281547 - 0.149763I$ $b = 0.364928 - 0.928632I$	$-0.91626 + 2.11958I$	$-9.09548 - 6.29610I$
$u = 0.588231 + 1.086850I$ $a = -1.70900 - 0.76306I$ $b = -1.56785 + 0.26923I$	$-7.73259 + 6.48719I$	$-6.82312 - 5.90005I$
$u = 0.588231 - 1.086850I$ $a = -1.70900 + 0.76306I$ $b = -1.56785 - 0.26923I$	$-7.73259 - 6.48719I$	$-6.82312 + 5.90005I$
$u = -0.051535 + 0.424185I$ $a = 3.68516 - 0.74169I$ $b = 0.862997 + 0.073353I$	$1.63676 - 2.95067I$	$-6.12574 + 8.48868I$
$u = -0.051535 - 0.424185I$ $a = 3.68516 + 0.74169I$ $b = 0.862997 - 0.073353I$	$1.63676 + 2.95067I$	$-6.12574 - 8.48868I$
$u = -0.08457 + 2.15179I$ $a = -1.257710 - 0.086043I$ $b = -1.160080 - 0.491572I$	$-14.3720 - 2.0722I$	$-9.45567 + 2.68473I$
$u = -0.08457 - 2.15179I$ $a = -1.257710 + 0.086043I$ $b = -1.160080 + 0.491572I$	$-14.3720 + 2.0722I$	$-9.45567 - 2.68473I$

III.

$\boldsymbol{I^u_3 = \langle 2.21\times10^5u^{11} + 3.52\times10^5u^{10} + \cdots + 4.89\times10^6 b + 8.76\times10^6,\ -6.80\times10^6u^{11} + 1.91\times10^5u^{10} + \cdots + 4.89\times10^6 a + 3.89\times10^7,\ u^{12} + 13u^{10} + \cdots - 5u + 1\rangle}$

(i) Arc colorings

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

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

$$a_9 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}1.38929u^{11} - 0.0391197u^{10} + \cdots + 43.9779u - 7.94107\\-0.0451029u^{11} - 0.0719572u^{10} + \cdots - 0.177550u - 1.78957\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}1.43439u^{11} + 0.0328375u^{10} + \cdots + 44.1554u - 6.15150\\-0.0451029u^{11} - 0.0719572u^{10} + \cdots - 0.177550u - 1.78957\end{pmatrix}$$

$$a_4 = \begin{pmatrix}1.86149u^{11} + 0.0277566u^{10} + \cdots + 56.7778u - 7.54448\\-0.0255782u^{11} - 0.108973u^{10} + \cdots + 1.02646u - 2.23971\end{pmatrix}$$

$$a_1 = \begin{pmatrix}1.35518u^{11} - 0.0779405u^{10} + \cdots + 42.7077u - 7.97390\\-0.0413761u^{11} - 0.131233u^{10} + \cdots + 0.297122u - 1.90035\end{pmatrix}$$

$$a_7 = \begin{pmatrix}2.16779u^{11} - 0.0984377u^{10} + \cdots + 66.0594u - 12.7530\\-0.0719229u^{11} - 0.0728595u^{10} + \cdots - 2.91466u - 2.58092\end{pmatrix}$$

$$a_6 = \begin{pmatrix}0.740548u^{11} + 0.241490u^{10} + \cdots + 20.0889u + 4.36298\\0.434394u^{11} + 0.0328375u^{10} + \cdots + 11.1554u - 1.15150\end{pmatrix}$$

$$a_2 = \begin{pmatrix}1.35518u^{11} - 0.0779405u^{10} + \cdots + 42.7077u - 7.97390\\-0.0792181u^{11} - 0.110778u^{10} + \cdots - 1.44776u - 1.82241\end{pmatrix}$$

$$a_5 = \begin{pmatrix}2.02148u^{11} + 0.591926u^{10} + \cdots + 56.7443u + 8.63238\\0.902855u^{11} + 0.0689238u^{10} + \cdots + 24.8073u - 2.82600\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-1.74447u^{11} + 0.117060u^{10} + \cdots - 53.6856u + 13.9150\\0.286593u^{11} + 0.0646620u^{10} + \cdots + 8.24327u + 2.04902\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{1038229}{4894159}u^{11} - \frac{453029}{4894159}u^{10} + \cdots + \frac{62859079}{4894159}u - \frac{46129032}{4894159}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^6+8u^5-53u^3+58u^2-15u+9)^2$
c_2, c_5	$(u^6-4u^5+4u^4-3u^3+4u^2+3u+3)^2$
c_3, c_6	$u^{12}-4u^{11}+\cdots+u+1$
c_4, c_8	$u^{12}+13u^{10}+\cdots+5u+1$
c_7, c_{10}, c_{11}	$(u^6-u^5-4u^4+3u^3+4u^2-2)^2$
c_9, c_{12}	$u^{12}-3u^{11}+\cdots-8u+173$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^6-64y^5+964y^4-2551y^3+1774y^2+819y+81)^2$
c_2, c_5	$(y^6-8y^5+53y^3+58y^2+15y+9)^2$
c_3, c_6	$y^{12}-2y^{11}+\cdots+23y+1$
c_4, c_8	$y^{12}+26y^{11}+\cdots+43y+1$
c_7, c_{10}, c_{11}	$(y^6-9y^5+30y^4-45y^3+32y^2-16y+4)^2$
c_9, c_{12}	$y^{12}+29y^{11}+\cdots+170514y+29929$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.374731 + 0.890342I$ $a = 1.185720 - 0.141464I$ $b = 0.629305 + 0.469465I$	$-0.31318 - 1.57342I$	$-5.93222 + 3.43140I$
$u = -0.374731 - 0.890342I$ $a = 1.185720 + 0.141464I$ $b = 0.629305 - 0.469465I$	$-0.31318 + 1.57342I$	$-5.93222 - 3.43140I$
$u = 0.219901 + 0.674731I$ $a = 0.347492 + 0.244157I$ $b = 0.629305 + 0.469465I$	$-0.31318 - 1.57342I$	$-5.93222 + 3.43140I$
$u = 0.219901 - 0.674731I$ $a = 0.347492 - 0.244157I$ $b = 0.629305 - 0.469465I$	$-0.31318 + 1.57342I$	$-5.93222 - 3.43140I$
$u = 0.32643 + 1.59597I$ $a = -2.15982 - 0.63392I$ $b = -1.63022 + 0.19616I$	$-8.12771 + 4.22943I$	$-8.28340 - 1.79030I$
$u = 0.32643 - 1.59597I$ $a = -2.15982 + 0.63392I$ $b = -1.63022 - 0.19616I$	$-8.12771 - 4.22943I$	$-8.28340 + 1.79030I$
$u = 0.080159 + 0.164473I$ $a = -4.43127 + 6.14837I$ $b = -1.63022 - 0.19616I$	$-8.12771 - 4.22943I$	$-8.28340 + 1.79030I$
$u = 0.080159 - 0.164473I$ $a = -4.43127 - 6.14837I$ $b = -1.63022 + 0.19616I$	$-8.12771 + 4.22943I$	$-8.28340 - 1.79030I$
$u = -0.37385 + 2.16844I$ $a = 2.53178 + 0.44785I$ $b = 1.70687$	16.3722	$-8.87611 + 0.I$
$u = -0.37385 - 2.16844I$ $a = 2.53178 - 0.44785I$ $b = 1.70687$	16.3722	$-8.87611 + 0.I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.12209 + 2.22085I$ $a = -0.973901 + 0.448921I$ $b = -0.705047$	-14.2948	$-8.69265 + 0.I$
$u = \quad 0.12209 - 2.22085I$ $a = -0.973901 - 0.448921I$ $b = -0.705047$	-14.2948	$-8.69265 + 0.I$

IV. $\boldsymbol{I_4^u = \langle -u^2 + b + u - 1,\ -u^3 + u^2 + a - 2u + 2,\ u^4 - 2u^3 + 3u^2 - 2u - 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.31499$ $a = 1.17467$ $b = 1.41421$	-4.93480	-8.00000
$u = 0.50000 + 1.47113I$ $a = -2.20711 - 0.60936I$ $b = -1.41421$	-4.93480	-8.00000
$u = 0.50000 - 1.47113I$ $a = -2.20711 + 0.60936I$ $b = -1.41421$	-4.93480	-8.00000
$u = -0.314993$ $a = -2.76046$ $b = 1.41421$	-4.93480	-8.00000

V. $I_5^u = \langle b,\ a+u,\ u^2+u+1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = 0.500000 - 0.866025I$ $b = 0$	0	-6.00000
$u = -0.500000 - 0.866025I$ $a = 0.500000 + 0.866025I$ $b = 0$	0	-6.00000

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^6(u^6+8u^5-53u^3+58u^2-15u+9)^2$ $\cdot(u^8-8u^7+18u^6-9u^5+31u^4+18u^3+14u^2+3u+1)$ $\cdot(u^{12}+37u^{11}+\cdots+6273u+64)$
c_2	$(u-1)^6(u^6-4u^5+4u^4-3u^3+4u^2+3u+3)^2$ $\cdot(u^8+6u^7+14u^6+17u^5+13u^4+8u^3+6u^2+3u+1)$ $\cdot(u^{12}+9u^{11}+\cdots-57u+8)$
c_3, c_6	$(u^2+u+1)(u^4+2u^3+\cdots+2u-1)(u^8+2u^7+\cdots+2u+1)$ $\cdot(u^{12}-4u^{11}+\cdots+u+1)(u^{12}-2u^{11}+\cdots-3u-1)$
c_4, c_8	$(u^2+u+1)(u^4-2u^3+\cdots-2u-1)(u^8+6u^6+\cdots+u+1)$ $\cdot(u^{12}+9u^{10}-u^9+13u^8-3u^7-37u^6+8u^5-u^4-13u^3+7u^2+2u-1)$ $\cdot(u^{12}+13u^{10}+\cdots+5u+1)$
c_5	$(u+1)^6(u^6-4u^5+4u^4-3u^3+4u^2+3u+3)^2$ $\cdot(u^8-6u^7+14u^6-17u^5+13u^4-8u^3+6u^2-3u+1)$ $\cdot(u^{12}+9u^{11}+\cdots-57u+8)$
c_7	$u^2(u^2-2)^2(u^6-u^5-4u^4+3u^3+4u^2-2)^2$ $\cdot(u^8+3u^7+\cdots-u+3)(u^{12}+6u^{11}+\cdots+7u-2)$
c_9, c_{12}	$(u-1)^2(u+1)^4(u^8-u^7+8u^6-u^5+14u^4+5u^3+7u^2+5u+1)$ $\cdot(u^{12}-3u^{11}+\cdots-8u+173)(u^{12}+u^{11}+\cdots+36u+1)$
c_{10}, c_{11}	$u^2(u^2-2)^2(u^6-u^5-4u^4+3u^3+4u^2-2)^2$ $\cdot(u^8-3u^7+\cdots+u+3)(u^{12}+6u^{11}+\cdots+7u-2)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^6(y^6-64y^5+964y^4-2551y^3+1774y^2+819y+81)^2$ $\cdot(y^8-28y^7+242y^6+1351y^5+1839y^4+634y^3+150y^2+19y+1)$ $\cdot(y^{12}-233y^{11}+\cdots-38719361y+4096)$
c_2, c_5	$(y-1)^6(y^6-8y^5+53y^3+58y^2+15y+9)^2$ $\cdot(y^8-8y^7+18y^6-9y^5+31y^4+18y^3+14y^2+3y+1)$ $\cdot(y^{12}-37y^{11}+\cdots-6273y+64)$
c_3, c_6	$(y^2+y+1)(y^4+2y^3+\cdots-10y+1)(y^8+4y^5+\cdots-4y+1)$ $\cdot(y^{12}-6y^{11}+\cdots+y+1)(y^{12}-2y^{11}+\cdots+23y+1)$
c_4, c_8	$(y^2+y+1)(y^4+2y^3-y^2-10y+1)$ $\cdot(y^8+12y^7+52y^6+110y^5+150y^4+115y^3+59y^2+13y+1)$ $\cdot(y^{12}+18y^{11}+\cdots-18y+1)(y^{12}+26y^{11}+\cdots+43y+1)$
c_7, c_{10}, c_{11}	$y^2(y-2)^4(y^6-9y^5+30y^4-45y^3+32y^2-16y+4)^2$ $\cdot(y^8-7y^7+19y^6-23y^5+10y^4-y^3+18y^2-25y+9)$ $\cdot(y^{12}-12y^{11}+\cdots-109y+4)$
c_9, c_{12}	$(y-1)^6$ $\cdot(y^8+15y^7+90y^6+247y^5+330y^4+197y^3+27y^2-11y+1)$ $\cdot(y^{12}+29y^{11}+\cdots+170514y+29929)(y^{12}+45y^{11}+\cdots-670y+1)$