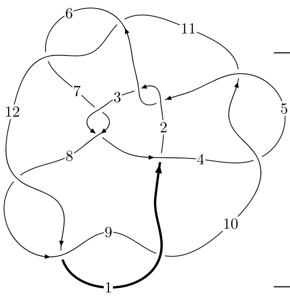
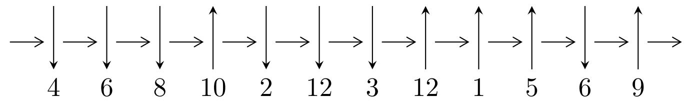
$12n_{0751}$ ($K12n_{0751}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -898244027u^{14} - 391531130u^{13} + \cdots + 534701171b + 1119066057, \\
& -898027536u^{14} - 389544550u^{13} + \cdots + 534701171a + 1652680736, \\
& u^{15} - u^{13} - u^{12} + 8u^{11} - u^{10} - 18u^9 - 2u^7 + 12u^6 - 21u^5 + 26u^4 - 14u^3 + 3u^2 - 2u + 1\rangle \\
I_2^u = \langle & 3.30670 \times 10^{41}u^{29} + 5.71881 \times 10^{41}u^{28} + \cdots + 1.78529 \times 10^{43}b + 3.34070 \times 10^{43}, \\
& 1.36375 \times 10^{44}u^{29} - 4.57521 \times 10^{43}u^{28} + \cdots + 3.92765 \times 10^{44}a + 3.57143 \times 10^{45},\ u^{30} + 2u^{28} + \cdots + 81u + \\
I_3^u = \langle & u^3 + b + 3,\ u^3 + a - u + 2,\ u^4 + u^3 + 2u + 1\rangle \\
I_4^u = \langle & b,\ a + u - 2,\ u^2 - u - 1\rangle \\
I_5^u = \langle & u^2 + b - u - 1,\ -u^3 + 2u^2 + a + u - 1,\ u^4 - 2u^3 - u^2 + 2u - 1\rangle \\
I_6^u = \langle & b,\ a - 1,\ u - 1\rangle \\
I_7^u = \langle & b - 1,\ a^2 - a - 1,\ u - 1\rangle
\end{aligned}$$

* 7 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 58 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.
$\boldsymbol{I_1^u = \langle -8.98\times10^8u^{14} - 3.92\times10^8u^{13} + \cdots + 5.35\times10^8b + 1.12\times10^9,\ -8.98\times10^8u^{14} - 3.90\times10^8u^{13} + \cdots + 5.35\times10^8a + 1.65\times10^9,\ u^{15} - u^{13} + \cdots - 2u + 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_4 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}1.67949u^{14} + 0.728528u^{13} + \cdots + 3.65635u - 3.09085\\1.67990u^{14} + 0.732243u^{13} + \cdots + 0.801226u - 2.09288\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-1.07086u^{14} - 0.594830u^{13} + \cdots - 2.20938u + 2.32522\\-1.79456u^{14} - 0.830294u^{13} + \cdots - 0.599907u + 2.64579\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0.235869u^{14} - 0.0456390u^{13} + \cdots - 1.72828u + 0.274259\\-1.49103u^{14} - 0.606558u^{13} + \cdots - 0.808252u + 2.09660\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-0.000404882u^{14} - 0.00371531u^{13} + \cdots + 2.85513u - 0.997968\\1.67990u^{14} + 0.732243u^{13} + \cdots + 0.801226u - 2.09288\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-0.000404882u^{14} - 0.00371531u^{13} + \cdots + 2.85513u - 0.997968\\-2.64538u^{14} - 1.79085u^{13} + \cdots + 0.108289u + 5.68964\end{pmatrix}$$
$$a_7 = \begin{pmatrix}u^2 - 1\\4.04447u^{14} + 2.08478u^{13} + \cdots + 5.22270u - 7.34077\end{pmatrix}$$
$$a_8 = \begin{pmatrix}1\\-5.94603u^{14} - 3.12181u^{13} + \cdots - 5.52030u + 10.4626\end{pmatrix}$$
$$a_3 = \begin{pmatrix}u\\-3.12181u^{14} - 1.90156u^{13} + \cdots - 0.429474u + 5.94603\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0.209193u^{14} - 0.0694314u^{13} + \cdots + 1.83397u - 0.107940\\-0.645989u^{14} - 0.381117u^{13} + \cdots - 0.616195u + 1.74893\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{9257204513}{534701171}u^{14} - \frac{6026834044}{534701171}u^{13} + \cdots - \frac{11292543056}{534701171}u + \frac{18370247823}{534701171}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_7	$u^{15} - u^{13} + \cdots - 2u - 1$
c_2, c_5	$u^{15} + 9u^{14} + \cdots - 69u - 9$
c_4, c_{10}	$u^{15} - u^{14} + \cdots + 5u + 1$
c_6, c_{11}	$u^{15} - u^{14} + \cdots - 4u - 1$
c_8, c_9, c_{12}	$u^{15} - 6u^{14} + \cdots + 6u + 9$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_7	$y^{15} - 2y^{14} + \cdots - 2y - 1$
c_2, c_5	$y^{15} - 9y^{14} + \cdots + 1071y - 81$
c_4, c_{10}	$y^{15} - 13y^{14} + \cdots + 39y - 1$
c_6, c_{11}	$y^{15} + 13y^{14} + \cdots + 16y - 1$
c_8, c_9, c_{12}	$y^{15} - 26y^{14} + \cdots - 1494y - 81$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.219964 + 0.819481I$ $a = -1.44756 - 0.16891I$ $b = 1.355710 - 0.019020I$	$3.27965 - 1.21970I$	$1.31129 + 5.66741I$
$u = 0.219964 - 0.819481I$ $a = -1.44756 + 0.16891I$ $b = 1.355710 + 0.019020I$	$3.27965 + 1.21970I$	$1.31129 - 5.66741I$
$u = -0.788509 + 0.905745I$ $a = -0.457133 - 1.143780I$ $b = -0.883513 - 0.932651I$	$5.92156 + 9.44163I$	$0.20634 - 8.15923I$
$u = -0.788509 - 0.905745I$ $a = -0.457133 + 1.143780I$ $b = -0.883513 + 0.932651I$	$5.92156 - 9.44163I$	$0.20634 + 8.15923I$
$u = 0.623880 + 0.248532I$ $a = 0.809525 + 0.462868I$ $b = -0.072998 + 0.253976I$	$-1.140580 - 0.339277I$	$-8.98924 + 1.73624I$
$u = 0.623880 - 0.248532I$ $a = 0.809525 - 0.462868I$ $b = -0.072998 - 0.253976I$	$-1.140580 + 0.339277I$	$-8.98924 - 1.73624I$
$u = 0.565700$ $a = -2.01244$ $b = -2.31417$	3.82898	27.9490
$u = 1.44661$ $a = -0.971679$ $b = -1.39008$	3.06003	2.95830
$u = -1.52296$ $a = -0.111508$ $b = -0.699810$	-7.76254	-32.3850
$u = -0.192664 + 0.382554I$ $a = 0.23984 + 1.65841I$ $b = 1.40585 + 0.42820I$	$2.17147 + 0.68609I$	$8.04360 - 5.02078I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.192664 - 0.382554I$ $a = 0.23984 - 1.65841I$ $b = 1.40585 - 0.42820I$	$2.17147 - 0.68609I$	$8.04360 + 5.02078I$
$u = 1.10259 + 1.29441I$ $a = 0.497805 - 0.641547I$ $b = 1.73219 - 0.23886I$	$14.6227 - 4.7692I$	$3.20527 + 2.44636I$
$u = 1.10259 - 1.29441I$ $a = 0.497805 + 0.641547I$ $b = 1.73219 + 0.23886I$	$14.6227 + 4.7692I$	$3.20527 - 2.44636I$
$u = -1.20993 + 1.32914I$ $a = 0.405328 + 0.848334I$ $b = 1.66478 + 0.29308I$	$14.2379 + 14.0822I$	$1.96139 - 6.46819I$
$u = -1.20993 - 1.32914I$ $a = 0.405328 - 0.848334I$ $b = 1.66478 - 0.29308I$	$14.2379 - 14.0822I$	$1.96139 + 6.46819I$

II. $\boldsymbol{I_2^u =}$
$\boldsymbol{\langle 3.31\times 10^{41}u^{29}+5.72\times 10^{41}u^{28}+\cdots+1.79\times 10^{43}b+3.34\times 10^{43},\ 1.36\times 10^{44}u^{29}-4.58\times 10^{43}u^{28}+\cdots+3.93\times 10^{44}a+3.57\times 10^{45},\ u^{30}+2u^{28}+\cdots+81u+11\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_4 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-0.347218u^{29}+0.116487u^{28}+\cdots-51.0446u-9.09305\\-0.0185219u^{29}-0.0320329u^{28}+\cdots-11.9126u-1.87123\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-0.394706u^{29}+0.210595u^{28}+\cdots-41.4801u-8.32205\\-0.0263285u^{29}+0.0298042u^{28}+\cdots+6.05343u+1.54652\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-0.467058u^{29}+0.222944u^{28}+\cdots-60.2499u-12.1851\\-0.0503337u^{29}+0.0560610u^{28}+\cdots+5.84906u+1.41068\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-0.328697u^{29}+0.148520u^{28}+\cdots-39.1319u-7.22182\\-0.0185219u^{29}-0.0320329u^{28}+\cdots-11.9126u-1.87123\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-0.196754u^{29}+0.0387220u^{28}+\cdots-27.9600u-3.50095\\0.0561620u^{29}-0.0650505u^{28}+\cdots-7.03644u-1.83361\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-0.409410u^{29}+0.0902696u^{28}+\cdots-81.9335u-16.7607\\0.0570621u^{29}+0.0581006u^{28}+\cdots+19.7385u+2.64502\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-0.217120u^{29}+0.141042u^{28}+\cdots-12.8730u-3.08396\\-0.0595359u^{29}+0.0111266u^{28}+\cdots-9.03611u-0.551467\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-0.562677u^{29}+0.183364u^{28}+\cdots-77.5261u-13.9939\\0.105143u^{29}-0.0492747u^{28}+\cdots+6.83973u+0.371317\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0.209727u^{29}-0.119739u^{28}+\cdots+27.3054u+6.97658\\-0.0548665u^{29}-0.0623507u^{28}+\cdots-18.5446u-2.63799\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.347221u^{29}-0.0667960u^{28}+\cdots+55.5079u+14.9386$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_7	$u^{30} + 2u^{28} + \cdots - 81u + 11$
c_2, c_5	$(u^{15} - 4u^{14} + \cdots - 5u + 2)^2$
c_4, c_{10}	$u^{30} - u^{29} + \cdots - 24u + 1$
c_6, c_{11}	$u^{30} + 2u^{29} + \cdots + 31u + 1$
c_8, c_9, c_{12}	$(u^{15} + 2u^{14} + \cdots - 2u + 2)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_7	$y^{30} + 4y^{29} + \cdots + 105y + 121$
c_2, c_5	$(y^{15} + 8y^{13} + \cdots - 3y - 4)^2$
c_4, c_{10}	$y^{30} - 33y^{29} + \cdots - 56y + 1$
c_6, c_{11}	$y^{30} + 26y^{29} + \cdots - 177y + 1$
c_8, c_9, c_{12}	$(y^{15} - 18y^{14} + \cdots + 68y - 4)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.975339$ $a = 2.03736$ $b = 1.13495$	-0.455497	-13.6410
$u = 0.962045 + 0.405621I$ $a = -0.920194 + 0.526296I$ $b = -1.53636$	3.54960	$2.31783 + 0.I$
$u = 0.962045 - 0.405621I$ $a = -0.920194 - 0.526296I$ $b = -1.53636$	3.54960	$2.31783 + 0.I$
$u = -0.605280 + 0.637023I$ $a = 0.47688 - 1.78582I$ $b = -1.47359 - 0.25718I$	$6.96654 + 7.44645I$	$-1.97655 - 7.47153I$
$u = -0.605280 - 0.637023I$ $a = 0.47688 + 1.78582I$ $b = -1.47359 + 0.25718I$	$6.96654 - 7.44645I$	$-1.97655 + 7.47153I$
$u = 0.518757 + 0.995170I$ $a = 0.188630 - 0.965072I$ $b = 0.398627 - 0.770277I$	$0.92420 - 3.75884I$	$-2.83571 + 8.62550I$
$u = 0.518757 - 0.995170I$ $a = 0.188630 + 0.965072I$ $b = 0.398627 + 0.770277I$	$0.92420 + 3.75884I$	$-2.83571 - 8.62550I$
$u = 0.508270 + 1.021130I$ $a = -0.311123 + 1.376970I$ $b = -0.566489 + 0.063512I$	$6.65494 - 3.78113I$	$2.84579 + 3.30508I$
$u = 0.508270 - 1.021130I$ $a = -0.311123 - 1.376970I$ $b = -0.566489 - 0.063512I$	$6.65494 + 3.78113I$	$2.84579 - 3.30508I$
$u = -0.069702 + 1.177270I$ $a = 0.0457627 + 0.0466319I$ $b = -1.61515 + 0.17952I$	$9.74746 - 4.20828I$	$3.86853 + 1.95225I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.069702 - 1.177270I$ $a = 0.0457627 - 0.0466319I$ $b = -1.61515 - 0.17952I$	$9.74746 + 4.20828I$	$3.86853 - 1.95225I$
$u = -0.541567 + 1.093190I$ $a = -0.672453 - 0.922756I$ $b = -0.566489 + 0.063512I$	$6.65494 - 3.78113I$	$2.84579 + 3.30508I$
$u = -0.541567 - 1.093190I$ $a = -0.672453 + 0.922756I$ $b = -0.566489 - 0.063512I$	$6.65494 + 3.78113I$	$2.84579 - 3.30508I$
$u = -0.661146 + 0.389686I$ $a = -0.48702 + 1.46762I$ $b = 0.398627 + 0.770277I$	$0.92420 + 3.75884I$	$-2.83571 - 8.62550I$
$u = -0.661146 - 0.389686I$ $a = -0.48702 - 1.46762I$ $b = 0.398627 - 0.770277I$	$0.92420 - 3.75884I$	$-2.83571 + 8.62550I$
$u = -0.307321 + 0.642721I$ $a = 0.30958 + 1.50914I$ $b = 0.709925 + 0.664105I$	$1.88098 + 1.11902I$	$2.92830 + 0.60819I$
$u = -0.307321 - 0.642721I$ $a = 0.30958 - 1.50914I$ $b = 0.709925 - 0.664105I$	$1.88098 - 1.11902I$	$2.92830 - 0.60819I$
$u = 1.36054$ $a = -0.316147$ $b = 1.13495$	-0.455497	-13.6410
$u = -0.429729$ $a = -3.56723$ $b = 0.336879$	-3.04205	11.2360
$u = -0.236133 + 0.340530I$ $a = 1.077030 - 0.148667I$ $b = 0.709925 - 0.664105I$	$1.88098 - 1.11902I$	$2.92830 - 0.60819I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.236133 - 0.340530I$ $a = 1.077030 + 0.148667I$ $b = 0.709925 + 0.664105I$	$1.88098 + 1.11902I$	$2.92830 + 0.60819I$
$u = -1.10466 + 1.15958I$ $a = -0.505916 - 0.815295I$ $b = -1.61515 - 0.17952I$	$9.74746 + 4.20828I$	$3.86853 - 1.95225I$
$u = -1.10466 - 1.15958I$ $a = -0.505916 + 0.815295I$ $b = -1.61515 + 0.17952I$	$9.74746 - 4.20828I$	$3.86853 + 1.95225I$
$u = 1.63208$ $a = 0.419875$ $b = 0.336879$	-3.04205	11.2360
$u = 0.81585 + 1.45626I$ $a = -0.089554 + 0.856120I$ $b = -1.47359 + 0.25718I$	$6.96654 - 7.44645I$	$-2.00000 + 7.47153I$
$u = 0.81585 - 1.45626I$ $a = -0.089554 - 0.856120I$ $b = -1.47359 - 0.25718I$	$6.96654 + 7.44645I$	$-2.00000 - 7.47153I$
$u = 1.25585 + 1.17832I$ $a = 0.577677 - 0.845480I$ $b = 1.57894 - 0.03518I$	$14.1007 - 4.2306I$	$2.71313 + 2.44322I$
$u = 1.25585 - 1.17832I$ $a = 0.577677 + 0.845480I$ $b = 1.57894 + 0.03518I$	$14.1007 + 4.2306I$	$2.71313 - 2.44322I$
$u = -1.32874 + 1.42818I$ $a = 0.478313 + 0.498197I$ $b = 1.57894 - 0.03518I$	$14.1007 - 4.2306I$	0
$u = -1.32874 - 1.42818I$ $a = 0.478313 - 0.498197I$ $b = 1.57894 + 0.03518I$	$14.1007 + 4.2306I$	0

III. $I_3^u = \langle u^3 + b + 3,\ u^3 + a - u + 2,\ u^4 + u^3 + 2u + 1 \rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^3 + u - 2 \\ -u^3 - 3 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^3 - u^2 - u - 3 \\ -2u^3 - 2u^2 + u - 3 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u \\ -2u^3 - u^2 - 3 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u + 1 \\ -u^3 - 3 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u - 1 \\ 3u^3 + u^2 - u + 8 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^2 - 1 \\ 7u^3 + 3u^2 - 4u + 15 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -1 \\ 9u^3 + 4u^2 - 3u + 20 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ 5u^3 + 3u^2 - u + 9 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^3 + u^2 - u \\ -u^2 - u + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -50u^3 - 21u^2 + 13u - 97$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_7	$y^4 - y^3 - 2y^2 - 4y + 1$
c_2, c_5	$y^4 - 12y^3 + 22y^2 - y + 25$
c_4, c_{10}	$y^4 - 4y^3 + 10y^2 - 9y + 1$
c_6, c_{11}	$y^4 - 2y^3 - 17y^2 - 18y + 1$
c_8, c_9, c_{12}	$y^4 - 13y^3 + 46y^2 - 64y + 25$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.515596 + 1.045250I$ $a = 0.068462 + 1.353620I$ $b = -1.44713 + 0.30837I$	$8.50524 - 7.16341I$	$4.70675 + 6.37190I$
$u = 0.515596 - 1.045250I$ $a = 0.068462 - 1.353620I$ $b = -1.44713 - 0.30837I$	$8.50524 + 7.16341I$	$4.70675 - 6.37190I$
$u = -0.472213$ $a = -2.36692$ $b = -2.89470$	3.76121	-102.560
$u = -1.55898$ $a = 0.229993$ $b = 0.788973$	-7.61222	21.1430

IV. $I_4^u = \langle b,\ a+u-2,\ u^2-u-1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -22$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.618034$ $a = 2.61803$ $b = 0$	-3.28987	-22.0000
$u = 1.61803$ $a = 0.381966$ $b = 0$	-3.28987	-22.0000

V. $\boldsymbol{I_5^u = \langle u^2 + b - u - 1,\ -u^3 + 2u^2 + a + u - 1,\ u^4 - 2u^3 - u^2 + 2u - 1\rangle}$

(i) Arc colorings

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

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

$$a_2 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} u^3 - 2u^2 \\ u^3 - 2u^2 + u + 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^3 - 2u^2 - 1 \\ u^3 - 3u^2 + u + 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^3 - u^2 - 2u \\ -u^2 + u + 1 \end{pmatrix}$$

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

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

$$a_8 = \begin{pmatrix} -u^3 + 2u^2 + u - 1 \\ u^2 - u - 1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^3 - 2u^2 \\ u^3 - 2u^2 + u + 1 \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.13224$ $a=-1.88320$ $b=-1.41421$	1.64493	−4.00000
$u=\ 0.500000+0.405233I$ $a=\ 0.207107-0.978318I$ $b=\ 1.41421$	1.64493	−4.00000
$u=\ 0.500000-0.405233I$ $a=\ 0.207107+0.978318I$ $b=\ 1.41421$	1.64493	−4.00000
$u=\ 2.13224$ $a=-0.531010$ $b=-1.41421$	1.64493	−4.00000

VI. $I_6^u = \langle b,\ a-1,\ u-1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u		$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	1.00000		
$a =$	1.00000	-1.64493	-6.00000
$b =$	0		

VII. $I^u_7 = \langle b-1,\ a^2-a-1,\ u-1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 5$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_7^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -0.618034$ $b = 1.00000$	0	5.00000
$u = 1.00000$ $a = 1.61803$ $b = 1.00000$	0	5.00000

VIII. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_3	$((u-1)^2)(u+1)(u^2-u-1)(u^4-2u^3+\cdots+2u-1)(u^4+u^3+2u+1)$ $\cdot(u^{15}-u^{13}+\cdots-2u-1)(u^{30}+2u^{28}+\cdots-81u+11)$
c_2	$u^3(u-1)^6(u^4+6u^3+\cdots+11u+5)(u^{15}-4u^{14}+\cdots-5u+2)^2$ $\cdot(u^{15}+9u^{14}+\cdots-69u-9)$
c_4	$(u+1)(u^2-u-1)(u^2+u-1)(u^4-2u^3+3u-1)(u^4+2u^3+\cdots-2u-1)$ $\cdot(u^{15}-u^{14}+\cdots+5u+1)(u^{30}-u^{29}+\cdots-24u+1)$
c_5	$u^3(u+1)^6(u^4-6u^3+\cdots-11u+5)(u^{15}-4u^{14}+\cdots-5u+2)^2$ $\cdot(u^{15}+9u^{14}+\cdots-69u-9)$
c_6	$(u-1)^2(u+1)^5(u^2+u-1)(u^4-2u^3+u^2-4u-1)$ $\cdot(u^{15}-u^{14}+\cdots-4u-1)(u^{30}+2u^{29}+\cdots+31u+1)$
c_7	$(u+1)^3(u^2+u-1)(u^4-u^3-2u+1)(u^4+2u^3-u^2-2u-1)$ $\cdot(u^{15}-u^{13}+\cdots-2u-1)(u^{30}+2u^{28}+\cdots-81u+11)$
c_8, c_9	$u^3(u+1)^2(u^2-2)^2(u^4-5u^3+\cdots+2u-5)(u^{15}-6u^{14}+\cdots+6u+9)$ $\cdot(u^{15}+2u^{14}+\cdots-2u+2)^2$
c_{10}	$(u+1)(u^2-u-1)(u^2+u-1)(u^4-2u^3+\cdots+2u-1)(u^4+2u^3-3u-1)$ $\cdot(u^{15}-u^{14}+\cdots+5u+1)(u^{30}-u^{29}+\cdots-24u+1)$
c_{11}	$(u-1)^4(u+1)^3(u^2-u-1)(u^4+2u^3+u^2+4u-1)$ $\cdot(u^{15}-u^{14}+\cdots-4u-1)(u^{30}+2u^{29}+\cdots+31u+1)$
c_{12}	$u^3(u-1)^2(u^2-2)^2(u^4+5u^3+\cdots-2u-5)(u^{15}-6u^{14}+\cdots+6u+9)$ $\cdot(u^{15}+2u^{14}+\cdots-2u+2)^2$

IX. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_7	$((y-1)^3)(y^2-3y+1)(y^4-6y^3+\cdots-2y+1)(y^4-y^3+\cdots-4y+1)$ $\cdot(y^{15}-2y^{14}+\cdots-2y-1)(y^{30}+4y^{29}+\cdots+105y+121)$
c_2, c_5	$y^3(y-1)^6(y^4-12y^3+\cdots-y+25)(y^{15}+8y^{13}+\cdots-3y-4)^2$ $\cdot(y^{15}-9y^{14}+\cdots+1071y-81)$
c_4, c_{10}	$(y-1)(y^2-3y+1)^2(y^4-6y^3+\cdots-2y+1)(y^4-4y^3+\cdots-9y+1)$ $\cdot(y^{15}-13y^{14}+\cdots+39y-1)(y^{30}-33y^{29}+\cdots-56y+1)$
c_6, c_{11}	$(y-1)^7(y^2-3y+1)(y^4-2y^3-17y^2-18y+1)$ $\cdot(y^{15}+13y^{14}+\cdots+16y-1)(y^{30}+26y^{29}+\cdots-177y+1)$
c_8, c_9, c_{12}	$y^3(y-2)^4(y-1)^2(y^4-13y^3+46y^2-64y+25)$ $\cdot(y^{15}-26y^{14}+\cdots-1494y-81)(y^{15}-18y^{14}+\cdots+68y-4)^2$