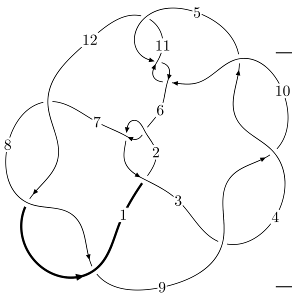
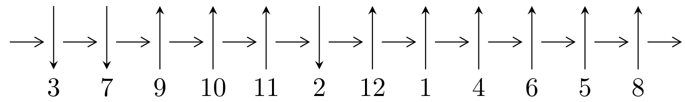
$12a_{0577}$ ($K12a_{0577}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -2.56312 \times 10^{33} u^{48} + 2.83092 \times 10^{33} u^{47} + \cdots + 7.56342 \times 10^{33} b + 4.45246 \times 10^{32},$$
$$- 1.28759 \times 10^{35} u^{48} + 2.69158 \times 10^{35} u^{47} + \cdots + 1.21015 \times 10^{35} a + 9.76615 \times 10^{34},\ u^{49} - 2u^{48} + \cdots - u +$$
$$I_2^u = \langle -u^5 + u^3 + b - u,\ u^3 + a,\ u^{18} - 6u^{16} + \cdots - u - 1 \rangle$$
$$I_3^u = \langle b + 1,\ a^4 - 4a^3 + 3a^2 + 2a + 1,\ u + 1 \rangle$$
$$I_4^u = \langle b - 1,\ a^4 + 4a^3 + 5a^2 + 2a - 1,\ u - 1 \rangle$$
$$I_5^u = \langle b + 1,\ a - 1,\ u + 1 \rangle$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 76 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.
$$\boldsymbol{I_1^u = \langle -2.56\times10^{33}u^{48}+2.83\times10^{33}u^{47}+\cdots+7.56\times10^{33}b+4.45\times10^{32},\ -1.29\times 10^{35}u^{48}+2.69\times10^{35}u^{47}+\cdots+1.21\times10^{35}a+9.77\times10^{34},\ u^{49}-2u^{48}+\cdots-u+1\rangle}$$

(i) Arc colorings

$$a_1 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_8 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1.06400u^{48}-2.22417u^{47}+\cdots-66.3671u-0.807022\\0.338884u^{48}-0.374291u^{47}+\cdots-9.12038u-0.0588683\end{pmatrix}$$
$$a_9 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}0.0728905u^{48}+0.0869859u^{47}+\cdots-20.9570u-12.0327\\-0.0255946u^{48}-0.118358u^{47}+\cdots+0.625886u-1.30939\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-0.437918u^{48}+0.654552u^{47}+\cdots+53.0608u+0.351204\\0.194691u^{48}-0.265650u^{47}+\cdots+6.68311u+0.189616\end{pmatrix}$$
$$a_3 = \begin{pmatrix}0.998861u^{48}-2.15004u^{47}+\cdots-56.0865u-0.844336\\0.314692u^{48}-0.206403u^{47}+\cdots-9.12938u-0.115001\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1.24728u^{48}-2.43234u^{47}+\cdots-64.0218u-0.840988\\0.0651347u^{48}-0.0741368u^{47}+\cdots-9.28056u+0.0373145\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-u\\u\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-u^2+1\\u^2\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0.0588683u^{48}+0.221147u^{47}+\cdots-22.4060u-9.17925\\-0.0961828u^{48}-0.0813832u^{47}+\cdots+0.256973u-1.06400\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-0.471607u^{48}+1.41230u^{47}+\cdots-23.3549u-5.40971\\-0.141421u^{48}+0.0729172u^{47}+\cdots+2.01016u-1.08423\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.776631u^{48}+0.563664u^{47}+\cdots+20.3985u+3.27444$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{49} + 16u^{48} + \cdots + 51u + 1$
c_2, c_6	$u^{49} - 2u^{48} + \cdots + 3u - 1$
c_3, c_4, c_9	$u^{49} + 2u^{48} + \cdots - 24u + 16$
c_5, c_{10}, c_{11}	$u^{49} - 2u^{48} + \cdots - 2u + 2$
c_7, c_8, c_{12}	$u^{49} + 2u^{48} + \cdots - u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{49} + 44y^{48} + \cdots + 1819y - 1$
c_2, c_6	$y^{49} - 16y^{48} + \cdots + 51y - 1$
c_3, c_4, c_9	$y^{49} - 50y^{48} + \cdots - 8256y - 256$
c_5, c_{10}, c_{11}	$y^{49} + 38y^{48} + \cdots + 8y - 4$
c_7, c_8, c_{12}	$y^{49} - 56y^{48} + \cdots + 99y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.506103 + 0.862902I$ $a = 0.500355 + 1.042960I$ $b = 0.781459 + 0.968591I$	$3.13730 - 0.87606I$	$7.33623 + 1.94038I$
$u = -0.506103 - 0.862902I$ $a = 0.500355 - 1.042960I$ $b = 0.781459 - 0.968591I$	$3.13730 + 0.87606I$	$7.33623 - 1.94038I$
$u = -0.441469 + 0.898603I$ $a = 0.587546 + 0.830187I$ $b = 1.30109 + 0.70065I$	$2.66998 - 10.11010I$	$6.39603 + 7.85117I$
$u = -0.441469 - 0.898603I$ $a = 0.587546 - 0.830187I$ $b = 1.30109 - 0.70065I$	$2.66998 + 10.11010I$	$6.39603 - 7.85117I$
$u = 0.473125 + 0.885514I$ $a = -0.561307 + 0.937339I$ $b = -1.076850 + 0.869299I$	$6.86021 + 5.51403I$	$10.47160 - 5.14621I$
$u = 0.473125 - 0.885514I$ $a = -0.561307 - 0.937339I$ $b = -1.076850 - 0.869299I$	$6.86021 - 5.51403I$	$10.47160 + 5.14621I$
$u = 1.06485$ $a = 1.21417$ $b = -0.142650$	5.55834	16.5270
$u = -1.080520 + 0.079944I$ $a = -1.207880 + 0.284396I$ $b = 0.160341 - 0.198571I$	$1.65369 - 3.96617I$	$11.77753 + 3.57951I$
$u = -1.080520 - 0.079944I$ $a = -1.207880 - 0.284396I$ $b = 0.160341 + 0.198571I$	$1.65369 + 3.96617I$	$11.77753 - 3.57951I$
$u = 0.272859 + 0.717075I$ $a = 0.097380 + 0.638899I$ $b = -0.442768 - 0.568471I$	$-4.96406 + 6.00920I$	$0.78370 - 7.92298I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.272859 - 0.717075I$ $a = 0.097380 - 0.638899I$ $b = -0.442768 + 0.568471I$	$-4.96406 - 6.00920I$	$0.78370 + 7.92298I$
$u = 0.635672 + 0.423399I$ $a = 0.152656 + 0.981747I$ $b = 0.481748 - 0.043197I$	$-1.98468 + 1.46890I$	$7.38226 - 4.62534I$
$u = 0.635672 - 0.423399I$ $a = 0.152656 - 0.981747I$ $b = 0.481748 + 0.043197I$	$-1.98468 - 1.46890I$	$7.38226 + 4.62534I$
$u = -0.377239 + 0.635400I$ $a = -0.042557 + 0.925611I$ $b = 0.106013 - 0.171567I$	$-0.22370 - 3.57957I$	$7.57049 + 8.69582I$
$u = -0.377239 - 0.635400I$ $a = -0.042557 - 0.925611I$ $b = 0.106013 + 0.171567I$	$-0.22370 + 3.57957I$	$7.57049 - 8.69582I$
$u = -0.629729$ $a = 0.0259489$ $b = -0.419260$	0.715837	14.7920
$u = 1.367690 + 0.118584I$ $a = -0.083488 - 0.457258I$ $b = 0.151194 - 0.356963I$	$-1.71441 + 2.34609I$	0
$u = 1.367690 - 0.118584I$ $a = -0.083488 + 0.457258I$ $b = 0.151194 + 0.356963I$	$-1.71441 - 2.34609I$	0
$u = -1.370000 + 0.090098I$ $a = -1.174840 + 0.183507I$ $b = 1.076130 + 0.107236I$	$2.02971 - 4.19323I$	0
$u = -1.370000 - 0.090098I$ $a = -1.174840 - 0.183507I$ $b = 1.076130 - 0.107236I$	$2.02971 + 4.19323I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.45161 + 0.04249I$ $a = 0.952579 - 0.218245I$ $b = -1.17797 + 0.84568I$	$6.85291 + 0.94088I$	0
$u = 1.45161 - 0.04249I$ $a = 0.952579 + 0.218245I$ $b = -1.17797 - 0.84568I$	$6.85291 - 0.94088I$	0
$u = -1.43096 + 0.24886I$ $a = 1.232470 + 0.036520I$ $b = -1.54657 - 0.17959I$	$0.52977 - 9.47056I$	0
$u = -1.43096 - 0.24886I$ $a = 1.232470 - 0.036520I$ $b = -1.54657 + 0.17959I$	$0.52977 + 9.47056I$	0
$u = -1.46839 + 0.13155I$ $a = 0.244748 + 0.347671I$ $b = -0.535951 - 1.225870I$	$4.54898 - 2.99003I$	0
$u = -1.46839 - 0.13155I$ $a = 0.244748 - 0.347671I$ $b = -0.535951 + 1.225870I$	$4.54898 + 2.99003I$	0
$u = -1.48327 + 0.04934I$ $a = -0.376466 + 0.449946I$ $b = 0.38527 - 1.44906I$	$4.87290 - 2.72445I$	0
$u = -1.48327 - 0.04934I$ $a = -0.376466 - 0.449946I$ $b = 0.38527 + 1.44906I$	$4.87290 + 2.72445I$	0
$u = 1.47136 + 0.20824I$ $a = -0.878047 + 0.378522I$ $b = 1.42808 - 0.90342I$	$5.80687 + 6.61465I$	0
$u = 1.47136 - 0.20824I$ $a = -0.878047 - 0.378522I$ $b = 1.42808 + 0.90342I$	$5.80687 - 6.61465I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.315421 + 0.397601I$ $a = 0.039889 + 1.284920I$ $b = 0.405532 - 0.300525I$	$-1.36715 + 1.10974I$	$0.89311 - 1.51851I$
$u = 0.315421 - 0.397601I$ $a = 0.039889 - 1.284920I$ $b = 0.405532 + 0.300525I$	$-1.36715 - 1.10974I$	$0.89311 + 1.51851I$
$u = -0.094951 + 0.466215I$ $a = -0.95838 + 1.34005I$ $b = -0.572924 - 0.727360I$	$-6.38447 - 0.32683I$	$-3.51715 + 0.79678I$
$u = -0.094951 - 0.466215I$ $a = -0.95838 - 1.34005I$ $b = -0.572924 + 0.727360I$	$-6.38447 + 0.32683I$	$-3.51715 - 0.79678I$
$u = 1.52723 + 0.33642I$ $a = -1.97469 + 0.88742I$ $b = 3.60061 - 0.27568I$	$9.0434 + 14.6216I$	0
$u = 1.52723 - 0.33642I$ $a = -1.97469 - 0.88742I$ $b = 3.60061 + 0.27568I$	$9.0434 - 14.6216I$	0
$u = -1.53962 + 0.32307I$ $a = 1.85586 + 0.99438I$ $b = -3.59315 - 0.63275I$	$13.4023 - 9.9407I$	0
$u = -1.53962 - 0.32307I$ $a = 1.85586 - 0.99438I$ $b = -3.59315 + 0.63275I$	$13.4023 + 9.9407I$	0
$u = 1.54894 + 0.30323I$ $a = -1.67927 + 1.07256I$ $b = 3.42720 - 1.03218I$	$9.85027 + 5.15212I$	0
$u = 1.54894 - 0.30323I$ $a = -1.67927 - 1.07256I$ $b = 3.42720 + 1.03218I$	$9.85027 - 5.15212I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.57332 + 0.22114I$ $a = 2.12554 - 0.50767I$ $b = -3.82426 - 0.00661I$	$11.13740 + 8.11094I$	0
$u = 1.57332 - 0.22114I$ $a = 2.12554 + 0.50767I$ $b = -3.82426 + 0.00661I$	$11.13740 - 8.11094I$	0
$u = -1.58534 + 0.20019I$ $a = -2.05798 - 0.63877I$ $b = 3.85771 + 0.41371I$	$15.3567 - 3.3643I$	0
$u = -1.58534 - 0.20019I$ $a = -2.05798 + 0.63877I$ $b = 3.85771 - 0.41371I$	$15.3567 + 3.3643I$	0
$u = 1.59138 + 0.17411I$ $a = 1.93614 - 0.75434I$ $b = -3.71746 + 0.86616I$	$11.62880 - 1.45194I$	0
$u = 1.59138 - 0.17411I$ $a = 1.93614 + 0.75434I$ $b = -3.71746 - 0.86616I$	$11.62880 + 1.45194I$	0
$u = -0.121685 + 0.105182I$ $a = 6.95371 + 3.79591I$ $b = 1.189100 - 0.168206I$	$-1.63772 - 4.11971I$	$0.12488 + 3.37346I$
$u = -0.121685 - 0.105182I$ $a = 6.95371 - 3.79591I$ $b = 1.189100 + 0.168206I$	$-1.63772 + 4.11971I$	$0.12488 - 3.37346I$
$u = 0.106744$ $a = -11.6080$ $b = -1.16523$	2.32826	4.47140

II. $I_2^u = \langle -u^5 + u^3 + b - u,\ u^3 + a,\ u^{18} - 6u^{16} + \cdots - u - 1 \rangle$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix} -u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} -u^6 + u^4 + 1 \\ u^8 - 2u^6 + 2u^4 - 2u^2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^9 - 2u^7 + u^5 - 2u^3 + u \\ -u^{11} + 3u^9 - 4u^7 + 5u^5 - 3u^3 + u \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -u \\ u \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} u^4 - u^2 + 1 \\ -u^4 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^{16} - 5u^{14} + 11u^{12} - 16u^{10} + 17u^8 - 14u^6 + 8u^4 - 2u^2 + 1 \\ -u^{16} + 4u^{14} - 6u^{12} + 6u^{10} - 4u^8 + 2u^4 - 2u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^9 + 12u^7 - 12u^5 + 12u^3 - 8u + 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{18} + 12u^{17} + \cdots + 5u + 1$
c_2, c_6, c_7 c_8, c_{12}	$u^{18} - 6u^{16} + \cdots + u - 1$
c_3, c_4, c_9	$(u^6 - u^5 - 3u^4 + 2u^3 + 2u^2 + u - 1)^3$
c_5, c_{10}, c_{11}	$(u^6 + u^5 + 3u^4 + 2u^3 + 2u^2 + u - 1)^3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{18} - 12y^{17} + \cdots + 7y + 1$
c_2, c_6, c_7 c_8, c_{12}	$y^{18} - 12y^{17} + \cdots - 5y + 1$
c_3, c_4, c_9	$(y^6 - 7y^5 + 17y^4 - 16y^3 + 6y^2 - 5y + 1)^3$
c_5, c_{10}, c_{11}	$(y^6 + 5y^5 + 9y^4 + 4y^3 - 6y^2 - 5y + 1)^3$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.672231 + 0.755934I$ $a = -0.848635 - 0.592839I$ $b = -1.019800 - 0.770263I$	$3.69558 - 4.59213I$	$8.58114 + 3.20482I$
$u = -0.672231 - 0.755934I$ $a = -0.848635 + 0.592839I$ $b = -1.019800 + 0.770263I$	$3.69558 + 4.59213I$	$8.58114 - 3.20482I$
$u = 0.945797 + 0.372369I$ $a = -0.452617 - 0.947657I$ $b = 0.167799 + 0.459832I$	$-2.96024 - 1.97241I$	$4.57572 + 3.68478I$
$u = 0.945797 - 0.372369I$ $a = -0.452617 + 0.947657I$ $b = 0.167799 - 0.459832I$	$-2.96024 + 1.97241I$	$4.57572 - 3.68478I$
$u = 0.719335 + 0.743187I$ $a = 0.819709 - 0.743187I$ $b = 0.773023 - 0.902358I$	7.66009	$12.26950 + 0.I$
$u = 0.719335 - 0.743187I$ $a = 0.819709 + 0.743187I$ $b = 0.773023 + 0.902358I$	7.66009	$12.26950 + 0.I$
$u = -0.763761 + 0.724480I$ $a = -0.757105 - 0.887576I$ $b = -0.494362 - 0.949066I$	$3.69558 + 4.59213I$	$8.58114 - 3.20482I$
$u = -0.763761 - 0.724480I$ $a = -0.757105 + 0.887576I$ $b = -0.494362 + 0.949066I$	$3.69558 - 4.59213I$	$8.58114 + 3.20482I$
$u = 1.18645$ $a = -1.67012$ $b = 1.86730$	0.738851	13.4170
$u = -1.219960 + 0.167385I$ $a = 1.71314 - 0.74267I$ $b = -1.70520 + 1.20889I$	$-2.96024 - 1.97241I$	$4.57572 + 3.68478I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.219960-0.167385I$ $a=\ \ 1.71314+0.74267I$ $b=-1.70520-1.20889I$	$-2.96024+1.97241I$	$4.57572-3.68478I$
$u=-0.593225+0.236109I$ $a=\ \ 0.109553-0.236109I$ $b=-0.449977+0.100617I$	0.738851	$13.41678+0.I$
$u=-0.593225-0.236109I$ $a=\ \ 0.109553+0.236109I$ $b=-0.449977-0.100617I$	0.738851	$13.41678+0.I$
$u=\ \ 0.274166+0.539754I$ $a=\ \ 0.219014+0.035534I$ $b=\ \ 0.551041+0.518149I$	$-2.96024+1.97241I$	$4.57572-3.68478I$
$u=\ \ 0.274166-0.539754I$ $a=\ \ 0.219014-0.035534I$ $b=\ \ 0.551041-0.518149I$	$-2.96024-1.97241I$	$4.57572+3.68478I$
$u=\ \ 1.43599+0.03145I$ $a=-2.95686-0.19455I$ $b=\ \ 4.55589+0.50499I$	$3.69558+4.59213I$	$8.58114-3.20482I$
$u=\ \ 1.43599-0.03145I$ $a=-2.95686+0.19455I$ $b=\ \ 4.55589-0.50499I$	$3.69558-4.59213I$	$8.58114+3.20482I$
$u=-1.43867$ $a=\ \ 2.97771$ $b=-4.62413$	7.66009	12.2690

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4a^2+8a+8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = -0.271230 + 0.340625I$ $b = -1.00000$	$-4.05977I$	$6.00000 + 3.46410I$
$u = -1.00000$ $a = -0.271230 - 0.340625I$ $b = -1.00000$	$4.05977I$	$6.00000 - 3.46410I$
$u = -1.00000$ $a = 2.27123 + 0.34063I$ $b = -1.00000$	$4.05977I$	$6.00000 - 3.46410I$
$u = -1.00000$ $a = 2.27123 - 0.34063I$ $b = -1.00000$	$-4.05977I$	$6.00000 + 3.46410I$

IV. $I_4^u = \langle b-1,\ a^4+4a^3+5a^2+2a-1,\ u-1\rangle$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix} a \\ 1 \end{pmatrix}$$

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

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

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

$$a_3 = \begin{pmatrix} -1 \\ a+2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -1 \\ a+3 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -1 \\ 1 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 1 \\ -a-2 \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4a^2+8a+8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -1.000000 + 0.786151I$ $b = 1.00000$	-3.94784	$1.52786 + 0.I$
$u = 1.00000$ $a = -1.000000 - 0.786151I$ $b = 1.00000$	-3.94784	$1.52786 + 0.I$
$u = 1.00000$ $a = 0.272020$ $b = 1.00000$	3.94784	10.4720
$u = 1.00000$ $a = -2.27202$ $b = 1.00000$	3.94784	10.4720

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

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

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

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

$$a_5 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1 \\ -2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = 1.00000$ $b = -1.00000$	0	0

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^9)(u^{18}+12u^{17}+\cdots+5u+1)(u^{49}+16u^{48}+\cdots+51u+1)$
c_2	$((u-1)^5)(u+1)^4(u^{18}-6u^{16}+\cdots+u-1)(u^{49}-2u^{48}+\cdots+3u-1)$
c_3, c_4, c_9	$u(u^4-3u^2+3)(u^4-u^2-1)(u^6-u^5-3u^4+2u^3+2u^2+u-1)^3$ $\cdot(u^{49}+2u^{48}+\cdots-24u+16)$
c_5, c_{10}, c_{11}	$u(u^4+u^2-1)(u^4+3u^2+3)(u^6+u^5+3u^4+2u^3+2u^2+u-1)^3$ $\cdot(u^{49}-2u^{48}+\cdots-2u+2)$
c_6	$((u-1)^4)(u+1)^5(u^{18}-6u^{16}+\cdots+u-1)(u^{49}-2u^{48}+\cdots+3u-1)$
c_7, c_8	$((u-1)^4)(u+1)^5(u^{18}-6u^{16}+\cdots+u-1)(u^{49}+2u^{48}+\cdots-u-1)$
c_{12}	$((u-1)^5)(u+1)^4(u^{18}-6u^{16}+\cdots+u-1)(u^{49}+2u^{48}+\cdots-u-1)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^9)(y^{18}-12y^{17}+\cdots+7y+1)(y^{49}+44y^{48}+\cdots+1819y-1)$
c_2, c_6	$((y-1)^9)(y^{18}-12y^{17}+\cdots-5y+1)(y^{49}-16y^{48}+\cdots+51y-1)$
c_3, c_4, c_9	$y(y^2-3y+3)^2(y^2-y-1)^2$ $\cdot (y^6-7y^5+17y^4-16y^3+6y^2-5y+1)^3$ $\cdot (y^{49}-50y^{48}+\cdots-8256y-256)$
c_5, c_{10}, c_{11}	$y(y^2+y-1)^2(y^2+3y+3)^2(y^6+5y^5+9y^4+4y^3-6y^2-5y+1)^3$ $\cdot (y^{49}+38y^{48}+\cdots+8y-4)$
c_7, c_8, c_{12}	$((y-1)^9)(y^{18}-12y^{17}+\cdots-5y+1)(y^{49}-56y^{48}+\cdots+99y-1)$