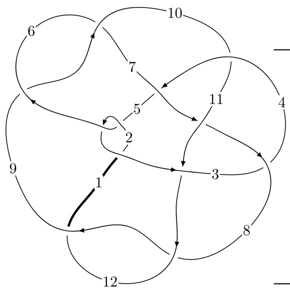
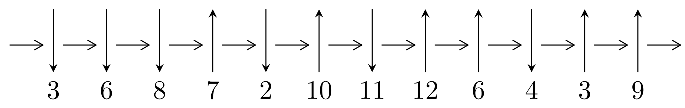
$12n_{0548}$ ($K12n_{0548}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 839541u^{18} + 414704u^{17} + \cdots + 614275b + 334586,$$
$$- 1568119u^{18} - 334586u^{17} + \cdots + 614275a - 893399,\ u^{19} + 4u^{17} + \cdots - 3u + 1\rangle$$
$$I_2^u = \langle -5.87295 \times 10^{66}u^{41} - 1.75111 \times 10^{67}u^{40} + \cdots + 2.94164 \times 10^{68}b - 3.67088 \times 10^{68},$$
$$- 3.09411 \times 10^{67}u^{41} - 7.74232 \times 10^{67}u^{40} + \cdots + 2.94164 \times 10^{68}a - 4.17179 \times 10^{68},\ u^{42} + 2u^{41} + \cdots - u +$$
$$I_3^u = \langle -u^5 - 2u^4 - 3u^3 - u^2 + b - u - 1,\ 2u^5 + 3u^4 + 4u^3 + a + u + 1,\ u^6 + u^5 + 2u^4 + 2u^2 + 1\rangle$$
$$I_4^u = \langle b,\ -u^2 + a - 4u - 4,\ u^3 + 3u^2 + 2u + 1\rangle$$
$$I_5^u = \langle -u^2 + b + 2u - 3,\ a - u + 1,\ u^3 - u^2 + 2u - 1\rangle$$
$$I_6^u = \langle b,\ -u^2 + a + u - 2,\ u^3 - u^2 + 2u - 1\rangle$$
$$I_7^u = \langle -u^3 + 2u^2 + 2b - 2u + 3,\ a,\ u^4 - u^3 - 3u - 1\rangle$$

* 7 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 80 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.

$I_1^u = \langle 8.40\times10^5u^{18} + 4.15\times10^5u^{17} + \cdots + 6.14\times10^5b + 3.35\times10^5,\ -1.57\times10^6u^{18} - 3.35\times10^5u^{17} + \cdots + 6.14\times10^5a - 8.93\times10^5,\ u^{19} + 4u^{17} + \cdots - 3u + 1\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 2.55280u^{18} + 0.544684u^{17} + \cdots + 6.35355u + 1.45440 \\ -1.36672u^{18} - 0.675111u^{17} + \cdots + 0.0812568u - 0.544684 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1.18608u^{18} - 0.130427u^{17} + \cdots + 6.43480u + 0.909711 \\ -1.36672u^{18} - 0.675111u^{17} + \cdots + 0.0812568u - 0.544684 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -1.87702u^{18} - 1.06727u^{17} + \cdots + 2.08800u - 0.313684 \\ -0.605885u^{18} + 0.644166u^{17} + \cdots - 4.44053u + 1.84186 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 2.29520u^{18} - 2.10756u^{17} + \cdots + 20.0462u - 4.88661 \\ -2.87084u^{18} - 0.364195u^{17} + \cdots - 6.80711u + 0.344619 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.0815091u^{18} - 1.84037u^{17} + \cdots + 14.0499u - 3.45123 \\ -1.35265u^{18} + 0.128936u^{17} + \cdots - 5.52137u + 1.29569 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 4.14127u^{18} - 5.59500u^{17} + \cdots + 40.2826u - 11.9351 \\ -2.76534u^{18} + 1.25245u^{17} + \cdots - 13.5192u + 2.87564 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 2.55280u^{18} + 0.544684u^{17} + \cdots + 7.35355u + 1.45440 \\ -1.36672u^{18} - 0.675111u^{17} + \cdots + 0.0812568u - 0.544684 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 2.26892u^{18} + 0.0721110u^{17} + \cdots + 8.09872u - 1.42611 \\ -1.16048u^{18} - 0.642082u^{17} + \cdots - 0.393968u - 0.747222 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 5.16604u^{18} - 1.74336u^{17} + \cdots + 26.8533u - 5.23123 \\ -2.87084u^{18} - 0.364195u^{17} + \cdots - 6.80711u + 0.344619 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{534153}{614275}u^{18} + \frac{1331432}{614275}u^{17} + \cdots + \frac{884838}{614275}u + \frac{5127063}{614275}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{19} + 16u^{18} + \cdots + 7856u + 256$
c_2, c_5	$u^{19} + 10u^{18} + \cdots + 12u - 16$
c_3, c_{10}	$u^{19} + 4u^{17} + \cdots - 3u + 1$
c_4, c_{11}	$u^{19} + 2u^{18} + \cdots + 12u + 8$
c_6, c_8, c_9 c_{12}	$u^{19} + u^{18} + \cdots + 3u + 1$
c_7	$u^{19} + 13u^{18} + \cdots - 48u - 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{19} - 48y^{18} + \cdots + 38868736y - 65536$
c_2, c_5	$y^{19} - 16y^{18} + \cdots + 7856y - 256$
c_3, c_{10}	$y^{19} + 8y^{18} + \cdots + 5y - 1$
c_4, c_{11}	$y^{19} - 2y^{18} + \cdots + 592y - 64$
c_6, c_8, c_9 c_{12}	$y^{19} + y^{18} + \cdots + 21y - 1$
c_7	$y^{19} + 5y^{18} + \cdots + 328y - 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.554327 + 0.816296I$ $a = 0.449718 - 0.399149I$ $b = -1.077030 + 0.552624I$	$-2.67732 - 0.51592I$	$1.091807 - 0.810974I$
$u = -0.554327 - 0.816296I$ $a = 0.449718 + 0.399149I$ $b = -1.077030 - 0.552624I$	$-2.67732 + 0.51592I$	$1.091807 + 0.810974I$
$u = 1.07189$ $a = -0.191560$ $b = 0.851800$	0.580619	13.0550
$u = -0.762242 + 0.899191I$ $a = 1.206180 + 0.397943I$ $b = -0.491185 - 0.844790I$	$-2.15014 + 2.80593I$	$-2.26586 - 2.17358I$
$u = -0.762242 - 0.899191I$ $a = 1.206180 - 0.397943I$ $b = -0.491185 + 0.844790I$	$-2.15014 - 2.80593I$	$-2.26586 + 2.17358I$
$u = 0.235296 + 0.747067I$ $a = -2.32482 - 0.34119I$ $b = 1.52404 + 0.10128I$	$3.56934 - 0.90767I$	$-0.55417 + 9.36864I$
$u = 0.235296 - 0.747067I$ $a = -2.32482 + 0.34119I$ $b = 1.52404 - 0.10128I$	$3.56934 + 0.90767I$	$-0.55417 - 9.36864I$
$u = -0.037268 + 1.233190I$ $a = -0.275398 + 0.188667I$ $b = 0.398506 + 0.971850I$	$8.03976 + 1.79924I$	$7.69871 - 3.75838I$
$u = -0.037268 - 1.233190I$ $a = -0.275398 - 0.188667I$ $b = 0.398506 - 0.971850I$	$8.03976 - 1.79924I$	$7.69871 + 3.75838I$
$u = -0.752726$ $a = 0.641735$ $b = -0.389121$	-1.23606	-8.48800

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.876387 + 0.962111I$ $a = -0.967056 + 0.743601I$ $b = -0.225183 - 0.785891I$	$-9.02909 + 1.94624I$	$-2.17011 - 0.32172I$
$u = 0.876387 - 0.962111I$ $a = -0.967056 - 0.743601I$ $b = -0.225183 + 0.785891I$	$-9.02909 - 1.94624I$	$-2.17011 + 0.32172I$
$u = 0.078541 + 0.678324I$ $a = 3.11733 + 0.71264I$ $b = -1.41252 + 0.68698I$	$-3.99480 - 5.52551I$	$3.44622 + 2.46689I$
$u = 0.078541 - 0.678324I$ $a = 3.11733 - 0.71264I$ $b = -1.41252 - 0.68698I$	$-3.99480 + 5.52551I$	$3.44622 - 2.46689I$
$u = 0.722855 + 1.170890I$ $a = -1.224490 + 0.542047I$ $b = 0.84423 - 1.36180I$	$-0.20840 - 9.16203I$	$0.05762 + 7.52328I$
$u = 0.722855 - 1.170890I$ $a = -1.224490 - 0.542047I$ $b = 0.84423 + 1.36180I$	$-0.20840 + 9.16203I$	$0.05762 - 7.52328I$
$u = -0.86076 + 1.25309I$ $a = 1.147680 + 0.364414I$ $b = -1.02645 - 1.52491I$	$-7.0282 + 15.9756I$	$-0.06436 - 7.92433I$
$u = -0.86076 - 1.25309I$ $a = 1.147680 - 0.364414I$ $b = -1.02645 + 1.52491I$	$-7.0282 - 15.9756I$	$-0.06436 + 7.92433I$
$u = 0.283860$ $a = 2.29154$ $b = 0.468504$	1.29410	7.95340

II.
$\boldsymbol{I_2^u = \langle -5.87\times10^{66}u^{41} - 1.75\times10^{67}u^{40} + \cdots + 2.94\times10^{68}b - 3.67\times10^{68},\ -3.09\times10^{67}u^{41} - 7.74\times10^{67}u^{40} + \cdots + 2.94\times10^{68}a - 4.17\times10^{68},\ u^{42} + 2u^{41} + \cdots - u + 29\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.105183u^{41} + 0.263197u^{40} + \cdots + 13.0930u + 1.41818 \\ 0.0199649u^{41} + 0.0595283u^{40} + \cdots + 1.86016u + 1.24790 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0.125148u^{41} + 0.322725u^{40} + \cdots + 14.9532u + 2.66608 \\ 0.0199649u^{41} + 0.0595283u^{40} + \cdots + 1.86016u + 1.24790 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.227872u^{41} - 0.440210u^{40} + \cdots - 20.1740u + 8.13423 \\ 0.0339899u^{41} + 0.0632354u^{40} + \cdots + 0.553957u - 1.62888 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.243217u^{41} - 0.412652u^{40} + \cdots - 7.86097u + 18.2275 \\ -0.0293195u^{41} - 0.0612038u^{40} + \cdots - 3.53683u - 0.800021 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.284778u^{41} - 0.544075u^{40} + \cdots - 18.4556u + 10.5971 \\ 0.0229160u^{41} + 0.0406297u^{40} + \cdots - 0.272377u - 0.834006 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.429098u^{41} + 1.08741u^{40} + \cdots + 62.8716u + 11.7818 \\ -0.0368126u^{41} - 0.0787071u^{40} + \cdots - 2.03432u + 1.99774 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.123438u^{41} + 0.337722u^{40} + \cdots + 17.9506u + 4.19819 \\ 0.0205559u^{41} + 0.0509951u^{40} + \cdots + 1.36876u + 0.145489 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.380839u^{41} - 0.803076u^{40} + \cdots - 34.7432u + 7.26273 \\ 0.0150353u^{41} + 0.0151766u^{40} + \cdots - 1.15105u - 2.01514 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.213898u^{41} - 0.351449u^{40} + \cdots - 4.32414u + 19.0276 \\ -0.0293195u^{41} - 0.0612038u^{40} + \cdots - 3.53683u - 0.800021 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.244611u^{41} - 0.621694u^{40} + \cdots - 40.9379u + 5.54966$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{21}+25u^{20}+\cdots+84u+1)^2$
c_2, c_5	$(u^{21}-5u^{20}+\cdots-14u+1)^2$
c_3, c_{10}	$u^{42}+2u^{41}+\cdots-u+29$
c_4, c_{11}	$u^{42}+6u^{41}+\cdots-124u+8$
c_6, c_8, c_9 c_{12}	$u^{42}-2u^{41}+\cdots-24u+29$
c_7	$(u^{21}-6u^{20}+\cdots+12u+4)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{21} - 53y^{20} + \cdots - 180y - 1)^2$
c_2, c_5	$(y^{21} - 25y^{20} + \cdots + 84y - 1)^2$
c_3, c_{10}	$y^{42} + 4y^{41} + \cdots + 10439y + 841$
c_4, c_{11}	$y^{42} + 16y^{41} + \cdots - 1424y + 64$
c_6, c_8, c_9 c_{12}	$y^{42} - 8y^{41} + \cdots - 2722y + 841$
c_7	$(y^{21} - 12y^{20} + \cdots + 504y - 16)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.910809 + 0.492994I$ $a = 0.604245 - 0.480077I$ $b = -0.012249 + 1.136170I$	$-2.24713 + 3.07529I$	$-2.94639 - 4.21084I$
$u = 0.910809 - 0.492994I$ $a = 0.604245 + 0.480077I$ $b = -0.012249 - 1.136170I$	$-2.24713 - 3.07529I$	$-2.94639 + 4.21084I$
$u = 0.395865 + 0.853042I$ $a = 1.134820 - 0.230653I$ $b = -0.404156 + 0.264334I$	$2.28813 + 0.50504I$	$2.35502 - 2.42758I$
$u = 0.395865 - 0.853042I$ $a = 1.134820 + 0.230653I$ $b = -0.404156 - 0.264334I$	$2.28813 - 0.50504I$	$2.35502 + 2.42758I$
$u = -0.160574 + 0.922004I$ $a = 1.78763 + 0.41444I$ $b = -2.14163 - 0.02583I$	$-3.01993 + 5.87862I$	$3.16317 - 5.53402I$
$u = -0.160574 - 0.922004I$ $a = 1.78763 - 0.41444I$ $b = -2.14163 + 0.02583I$	$-3.01993 - 5.87862I$	$3.16317 + 5.53402I$
$u = 0.306219 + 0.860956I$ $a = 0.75794 - 1.62449I$ $b = 0.101490 + 0.115855I$	$2.86504 - 3.02547I$	$1.74153 + 5.07163I$
$u = 0.306219 - 0.860956I$ $a = 0.75794 + 1.62449I$ $b = 0.101490 - 0.115855I$	$2.86504 + 3.02547I$	$1.74153 - 5.07163I$
$u = -0.790784 + 0.845104I$ $a = 1.39288 - 0.51155I$ $b = -0.968075 - 0.894251I$	$-3.01993 + 5.87862I$	$3.16317 - 5.53402I$
$u = -0.790784 - 0.845104I$ $a = 1.39288 + 0.51155I$ $b = -0.968075 + 0.894251I$	$-3.01993 - 5.87862I$	$3.16317 + 5.53402I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.038600 + 0.523837I$ $a = -0.942154 + 0.475195I$ $b = -0.236220 - 1.166820I$	-10.7460	$-4.50742 + 0.I$
$u = 1.038600 - 0.523837I$ $a = -0.942154 - 0.475195I$ $b = -0.236220 + 1.166820I$	-10.7460	$-4.50742 + 0.I$
$u = -0.797787 + 0.875105I$ $a = -0.534733 - 0.411863I$ $b = 0.404891 + 1.292910I$	$-2.24713 + 3.07529I$	$-2.94639 - 4.21084I$
$u = -0.797787 - 0.875105I$ $a = -0.534733 + 0.411863I$ $b = 0.404891 - 1.292910I$	$-2.24713 - 3.07529I$	$-2.94639 + 4.21084I$
$u = -0.879615 + 0.797579I$ $a = -1.51117 - 0.36130I$ $b = -0.021383 + 0.843147I$	$-8.46800 + 6.35526I$	$-2.09227 - 5.05576I$
$u = -0.879615 - 0.797579I$ $a = -1.51117 + 0.36130I$ $b = -0.021383 - 0.843147I$	$-8.46800 - 6.35526I$	$-2.09227 + 5.05576I$
$u = 0.871026 + 0.898919I$ $a = 0.667226 - 0.327012I$ $b = -0.81971 + 1.63423I$	$-9.19963 - 8.42224I$	$-2.59003 + 5.45173I$
$u = 0.871026 - 0.898919I$ $a = 0.667226 + 0.327012I$ $b = -0.81971 - 1.63423I$	$-9.19963 + 8.42224I$	$-2.59003 - 5.45173I$
$u = 0.723315$ $a = -0.282353$ $b = 1.55958$	0.602093	30.8920
$u = 0.252564 + 1.269630I$ $a = -1.05577 + 1.07496I$ $b = 1.09518 - 1.86934I$	$4.79941 - 2.44365I$	$9.18422 - 5.36256I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.252564 - 1.269630I$ $a = -1.05577 - 1.07496I$ $b = 1.09518 + 1.86934I$	$4.79941 + 2.44365I$	$9.18422 + 5.36256I$
$u = -0.826857 + 1.036500I$ $a = 0.291224 + 0.365062I$ $b = -0.31488 - 1.67829I$	-7.74435	$-1.51944 + 0.I$
$u = -0.826857 - 1.036500I$ $a = 0.291224 - 0.365062I$ $b = -0.31488 + 1.67829I$	-7.74435	$-1.51944 + 0.I$
$u = 0.874570 + 1.009200I$ $a = 1.065470 - 0.129907I$ $b = -0.858651 + 0.720112I$	$1.31849 - 7.43334I$	$-1.09731 + 4.98321I$
$u = 0.874570 - 1.009200I$ $a = 1.065470 + 0.129907I$ $b = -0.858651 - 0.720112I$	$1.31849 + 7.43334I$	$-1.09731 - 4.98321I$
$u = 0.088014 + 0.633793I$ $a = -1.21829 - 1.18843I$ $b = 1.008390 - 0.520783I$	$2.28813 - 0.50504I$	$2.35502 + 2.42758I$
$u = 0.088014 - 0.633793I$ $a = -1.21829 + 1.18843I$ $b = 1.008390 + 0.520783I$	$2.28813 + 0.50504I$	$2.35502 - 2.42758I$
$u = -0.264329 + 1.335610I$ $a = -0.344279 - 1.152810I$ $b = 0.082329 + 1.358030I$	$2.86504 + 3.02547I$	$1.74153 - 5.07163I$
$u = -0.264329 - 1.335610I$ $a = -0.344279 + 1.152810I$ $b = 0.082329 - 1.358030I$	$2.86504 - 3.02547I$	$1.74153 + 5.07163I$
$u = 0.693494 + 1.227500I$ $a = 1.112370 - 0.689204I$ $b = -0.84731 + 1.80325I$	$-8.46800 - 6.35526I$	$-2.09227 + 5.05576I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.693494 - 1.227500I$ $a = 1.112370 + 0.689204I$ $b = -0.84731 - 1.80325I$	$-8.46800 + 6.35526I$	$-2.09227 - 5.05576I$
$u = -1.29885 + 0.57323I$ $a = -0.474359 - 0.451833I$ $b = -0.446176 + 0.991503I$	$-9.19963 - 8.42224I$	$-2.59003 + 5.45173I$
$u = -1.29885 - 0.57323I$ $a = -0.474359 + 0.451833I$ $b = -0.446176 - 0.991503I$	$-9.19963 + 8.42224I$	$-2.59003 - 5.45173I$
$u = -0.81774 + 1.19364I$ $a = -0.963505 - 0.230411I$ $b = 1.15324 + 1.04594I$	$1.31849 + 7.43334I$	$0. - 4.98321I$
$u = -0.81774 - 1.19364I$ $a = -0.963505 + 0.230411I$ $b = 1.15324 - 1.04594I$	$1.31849 - 7.43334I$	$0. + 4.98321I$
$u = -0.412206 + 0.290564I$ $a = 0.837857 - 0.179649I$ $b = -1.51919 - 0.91903I$	$-0.776391 + 0.135824I$	$2.3494 - 19.5336I$
$u = -0.412206 - 0.290564I$ $a = 0.837857 + 0.179649I$ $b = -1.51919 + 0.91903I$	$-0.776391 - 0.135824I$	$2.3494 + 19.5336I$
$u = 0.150066 + 0.471958I$ $a = -3.05515 + 2.48532I$ $b = 0.512237 + 0.339241I$	$4.79941 - 2.44365I$	$9.18422 - 5.36256I$
$u = 0.150066 - 0.471958I$ $a = -3.05515 - 2.48532I$ $b = 0.512237 - 0.339241I$	$4.79941 + 2.44365I$	$9.18422 + 5.36256I$
$u = -1.54778 + 0.70297I$ $a = 0.079788 + 0.241372I$ $b = 0.264751 - 0.005228I$	$-0.776391 - 0.135824I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.54778 - 0.70297I$ $a = 0.079788 - 0.241372I$ $b = 0.264751 + 0.005228I$	$-0.776391 + 0.135824I$	0
$u = 1.70730$ $a = -0.119622$ $b = 0.374632$	0.602093	0

III. $\boldsymbol{I_3^u =}$
$\boldsymbol{\langle -u^5-2u^4-3u^3-u^2+b-u-1,\ 2u^5+3u^4+4u^3+a+u+1,\ u^6+u^5+2u^4+2u^2+1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -2u^5-3u^4-4u^3-u-1 \\ u^5+2u^4+3u^3+u^2+u+1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^5-u^4-u^3+u^2 \\ u^5+2u^4+3u^3+u^2+u+1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^5+u^4+2u^3+u-1 \\ -u^3-u^2-u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^5+u^3+4u^2+u+1 \\ 2u^5+3u^4+4u^3+u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^5+2u^3+u^2+6u-1 \\ u^4+u^3-2u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 4u^5+u^3-10u^2+3u-7 \\ -3u^5-2u^4-4u^3+3u^2-3u+3 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -2u^5-3u^4-4u^3-2u-1 \\ u^5+2u^4+2u^3+u^2+u+1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^5+u^3+4u \\ u^4+u^3+u^2-u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -3u^5-3u^4-3u^3+4u^2+1 \\ 2u^5+3u^4+4u^3+u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 7u^5+10u^4+16u^3+8u^2+9u+9$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^6 - 4u^5 - 4u^4 + 17u^3 + 20u^2 + 1$
c_2	$u^6 + 4u^5 + 6u^4 + 7u^3 + 8u^2 + 4u + 1$
c_3, c_{10}	$u^6 + u^5 + 2u^4 + 2u^2 + 1$
c_4, c_{11}	$u^6 + 2u^5 - 2u^4 - 6u^3 + 3u^2 + 16u + 11$
c_5	$u^6 - 4u^5 + 6u^4 - 7u^3 + 8u^2 - 4u + 1$
c_6, c_8	$u^6 - 2u^5 + 3u^4 - 2u^3 + u^2 - u + 1$
c_7	$u^6 + 5u^5 + 18u^4 + 38u^3 + 59u^2 + 55u + 31$
c_9, c_{12}	$u^6 + 2u^5 + 3u^4 + 2u^3 + u^2 + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^6 - 24y^5 + 192y^4 - 447y^3 + 392y^2 + 40y + 1$
c_2, c_5	$y^6 - 4y^5 - 4y^4 + 17y^3 + 20y^2 + 1$
c_3, c_{10}	$y^6 + 3y^5 + 8y^4 + 10y^3 + 8y^2 + 4y + 1$
c_4, c_{11}	$y^6 - 8y^5 + 34y^4 - 90y^3 + 157y^2 - 190y + 121$
c_6, c_8, c_9 c_{12}	$y^6 + 2y^5 + 3y^4 + 3y^2 + y + 1$
c_7	$y^6 + 11y^5 + 62y^4 + 192y^3 + 417y^2 + 633y + 961$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_3	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.503078 + 0.706849I$ $a = 2.29094 + 0.59312I$ $b = -1.48973 + 0.77624I$	$-4.68092 - 6.37541I$	$-2.75473 + 8.04371I$
$u = 0.503078 - 0.706849I$ $a = 2.29094 - 0.59312I$ $b = -1.48973 - 0.77624I$	$-4.68092 + 6.37541I$	$-2.75473 - 8.04371I$
$u = -0.169825 + 0.786403I$ $a = -2.31049 - 0.38566I$ $b = 1.42906 + 0.05811I$	$3.85563 + 0.42199I$	$8.41818 + 2.54413I$
$u = -0.169825 - 0.786403I$ $a = -2.31049 + 0.38566I$ $b = 1.42906 - 0.05811I$	$3.85563 - 0.42199I$	$8.41818 - 2.54413I$
$u = -0.83325 + 1.16541I$ $a = -0.980450 - 0.218037I$ $b = 1.060680 + 0.883526I$	$2.47022 + 7.96446I$	$6.33654 - 7.96443I$
$u = -0.83325 - 1.16541I$ $a = -0.980450 + 0.218037I$ $b = 1.060680 - 0.883526I$	$2.47022 - 7.96446I$	$6.33654 + 7.96443I$

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

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^2 + 4u + 4 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^2 + 4u + 4 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -3u - 7 \\ u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 5u^2 + 9u - 6 \\ u^2 + 3u + 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -3u - 7 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -11u^2 - 32u - 14 \\ -u - 2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 2u^2 + 7u + 5 \\ -u^2 - u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -2u^2 - 10u - 12 \\ u^2 + 2u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 4u^2 + 6u - 7 \\ u^2 + 3u + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -32u^2 - 43u - 18$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{10}	$u^3 - u^2 + 2u - 1$
c_2	$u^3 + u^2 - 1$
c_3	$u^3 + 3u^2 + 2u + 1$
c_4	$u^3 + 4u^2 + 9u + 11$
c_5	$u^3 - u^2 + 1$
c_6	$(u + 1)^3$
c_7, c_8	$u^3 - 4u^2 + 5u - 1$
c_9	$(u - 1)^3$
c_{11}	u^3
c_{12}	$u^3 + 4u^2 + 5u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$y^3 + 3y^2 + 2y - 1$
c_2, c_5	$y^3 - y^2 + 2y - 1$
c_3	$y^3 - 5y^2 - 2y - 1$
c_4	$y^3 + 2y^2 - 7y - 121$
c_6, c_9	$(y-1)^3$
c_7, c_8, c_{12}	$y^3 - 6y^2 + 17y - 1$
c_{11}	y^3

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.337641 + 0.562280I$ $a = 2.44728 + 1.86942I$ $b = 0$	$4.66906 + 2.82812I$	$2.98758 - 12.02771I$
$u = -0.337641 - 0.562280I$ $a = 2.44728 - 1.86942I$ $b = 0$	$4.66906 - 2.82812I$	$2.98758 + 12.02771I$
$u = -2.32472$ $a = 0.105442$ $b = 0$	0.531480	-90.9750

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -53u^2 + 32u - 92$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3	$u^3 - u^2 + 2u - 1$
c_2	$u^3 + u^2 - 1$
c_4	u^3
c_5	$u^3 - u^2 + 1$
c_6, c_7	$u^3 - 4u^2 + 5u - 1$
c_8	$(u + 1)^3$
c_9	$u^3 + 4u^2 + 5u + 1$
c_{10}	$u^3 + 3u^2 + 2u + 1$
c_{11}	$u^3 + 4u^2 + 9u + 11$
c_{12}	$(u - 1)^3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^3 + 3y^2 + 2y - 1$
c_2, c_5	$y^3 - y^2 + 2y - 1$
c_4	y^3
c_6, c_7, c_9	$y^3 - 6y^2 + 17y - 1$
c_8, c_{12}	$(y-1)^3$
c_{10}	$y^3 - 5y^2 - 2y - 1$
c_{11}	$y^3 + 2y^2 - 7y - 121$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.215080 + 1.307140I$ $a = -0.78492 + 1.30714I$ $b = 0.90748 - 2.05200I$	$4.66906 - 2.82812I$	$2.98758 + 12.02771I$
$u = 0.215080 - 1.307140I$ $a = -0.78492 - 1.30714I$ $b = 0.90748 + 2.05200I$	$4.66906 + 2.82812I$	$2.98758 - 12.02771I$
$u = 0.569840$ $a = -0.430160$ $b = 2.18504$	0.531480	-90.9750

VI. $I^u_6 = \langle b,\ -u^2 + a + u - 2,\ u^3 - u^2 + 2u - 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

	Solutions to I_6^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$0.215080 + 1.307140I$		
$a =$	$0.122561 - 0.744862I$	$4.66906 - 2.82812I$	$7.71191 + 2.59975I$
$b =$	0		
$u =$	$0.215080 - 1.307140I$		
$a =$	$0.122561 + 0.744862I$	$4.66906 + 2.82812I$	$7.71191 - 2.59975I$
$b =$	0		
$u =$	0.569840		
$a =$	1.75488	0.531480	−4.42380
$b =$	0		

VII. $I_7^u = \langle -u^3 + 2u^2 + 2b - 2u + 3,\ a,\ u^4 - u^3 - 3u - 1 \rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0 \\ \frac{1}{2}u^3 - u^2 + u - \frac{3}{2} \end{pmatrix}$$

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

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

$$a_1 = \begin{pmatrix} \frac{1}{2}u^3 - u - \frac{3}{2} \\ -1 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_2 = \begin{pmatrix} \frac{1}{2}u^3 - u - \frac{1}{2} \\ -1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -8u^3 + 16u^2 + 37$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5	$(y-1)^4$
c_3, c_4, c_{10} c_{11}	$y^4 - y^3 - 8y^2 - 9y + 1$
c_6, c_8, c_9 c_{12}	$(y^2 - 3y + 1)^2$
c_7	y^4

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_7	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.309017 + 1.233910I$ $a = 0$ $b = 0.309017 + 1.233910I$	7.23771	$3.11146 + 0.I$
$u = -0.309017 - 1.233910I$ $a = 0$ $b = 0.309017 - 1.233910I$	7.23771	$3.11146 + 0.I$
$u = -0.319053$ $a = 0$ $b = -1.93709$	−0.657974	38.8890
$u = 1.93709$ $a = 0$ $b = 0.319053$	−0.657974	38.8890

VIII. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^4(u^3-u^2+2u-1)^3(u^6-4u^5-4u^4+17u^3+20u^2+1)$ $\cdot(u^{19}+16u^{18}+\cdots+7856u+256)(u^{21}+25u^{20}+\cdots+84u+1)^2$
c_2	$(u-1)^4(u^3+u^2-1)^3(u^6+4u^5+6u^4+7u^3+8u^2+4u+1)$ $\cdot(u^{19}+10u^{18}+\cdots+12u-16)(u^{21}-5u^{20}+\cdots-14u+1)^2$
c_3, c_{10}	$(u^3-u^2+2u-1)^2(u^3+3u^2+2u+1)(u^4-u^3-3u-1)$ $\cdot(u^6+u^5+2u^4+2u^2+1)(u^{19}+4u^{17}+\cdots-3u+1)$ $\cdot(u^{42}+2u^{41}+\cdots-u+29)$
c_4, c_{11}	$u^6(u^3+4u^2+9u+11)(u^4-u^3-3u-1)$ $\cdot(u^6+2u^5+\cdots+16u+11)(u^{19}+2u^{18}+\cdots+12u+8)$ $\cdot(u^{42}+6u^{41}+\cdots-124u+8)$
c_5	$(u+1)^4(u^3-u^2+1)^3(u^6-4u^5+6u^4-7u^3+8u^2-4u+1)$ $\cdot(u^{19}+10u^{18}+\cdots+12u-16)(u^{21}-5u^{20}+\cdots-14u+1)^2$
c_6, c_8	$(u+1)^6(u^2-u-1)^2(u^3-4u^2+5u-1)$ $\cdot(u^6-2u^5+3u^4-2u^3+u^2-u+1)(u^{19}+u^{18}+\cdots+3u+1)$ $\cdot(u^{42}-2u^{41}+\cdots-24u+29)$
c_7	$u^4(u+1)^3(u^3-4u^2+5u-1)^2$ $\cdot(u^6+5u^5+18u^4+38u^3+59u^2+55u+31)$ $\cdot(u^{19}+13u^{18}+\cdots-48u-4)(u^{21}-6u^{20}+\cdots+12u+4)^2$
c_9, c_{12}	$(u-1)^6(u^2+u-1)^2(u^3+4u^2+5u+1)$ $\cdot(u^6+2u^5+3u^4+2u^3+u^2+u+1)(u^{19}+u^{18}+\cdots+3u+1)$ $\cdot(u^{42}-2u^{41}+\cdots-24u+29)$

IX. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^4(y^3+3y^2+2y-1)^3$ $\cdot(y^6-24y^5+192y^4-447y^3+392y^2+40y+1)$ $\cdot(y^{19}-48y^{18}+\cdots+38868736y-65536)$ $\cdot(y^{21}-53y^{20}+\cdots-180y-1)^2$
c_2, c_5	$(y-1)^4(y^3-y^2+2y-1)^3(y^6-4y^5-4y^4+17y^3+20y^2+1)$ $\cdot(y^{19}-16y^{18}+\cdots+7856y-256)(y^{21}-25y^{20}+\cdots+84y-1)^2$
c_3, c_{10}	$(y^3-5y^2-2y-1)(y^3+3y^2+2y-1)^2(y^4-y^3-8y^2-9y+1)$ $\cdot(y^6+3y^5+\cdots+4y+1)(y^{19}+8y^{18}+\cdots+5y-1)$ $\cdot(y^{42}+4y^{41}+\cdots+10439y+841)$
c_4, c_{11}	$y^6(y^3+2y^2-7y-121)(y^4-y^3-8y^2-9y+1)$ $\cdot(y^6-8y^5+34y^4-90y^3+157y^2-190y+121)$ $\cdot(y^{19}-2y^{18}+\cdots+592y-64)(y^{42}+16y^{41}+\cdots-1424y+64)$
c_6, c_8, c_9 c_{12}	$(y-1)^6(y^2-3y+1)^2(y^3-6y^2+17y-1)$ $\cdot(y^6+2y^5+3y^4+3y^2+y+1)(y^{19}+y^{18}+\cdots+21y-1)$ $\cdot(y^{42}-8y^{41}+\cdots-2722y+841)$
c_7	$y^4(y-1)^3(y^3-6y^2+17y-1)^2$ $\cdot(y^6+11y^5+62y^4+192y^3+417y^2+633y+961)$ $\cdot(y^{19}+5y^{18}+\cdots+328y-16)(y^{21}-12y^{20}+\cdots+504y-16)^2$