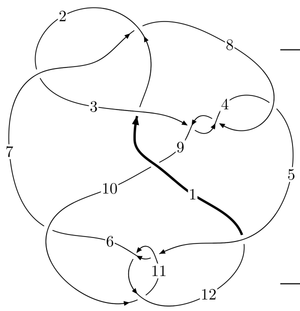
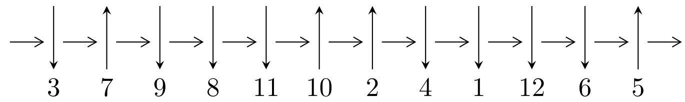
$12a_{0562}$ $(K12a_{0562})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 3u^{60} - 48u^{58} + \cdots + 4b + 4,\ 2u^{67} - 36u^{65} + \cdots + 4a - 4,\ u^{68} + 2u^{67} + \cdots + 5u + 2\rangle$$
$$I_2^u = \langle -2319u^8a^2 - 1264u^8a + \cdots + 708a + 1030,\ 5u^8a + u^8 + \cdots - 3a - 3,$$
$$u^9 - u^8 - 2u^7 + 3u^6 + u^5 - 3u^4 + 2u^3 - u + 1\rangle$$
$$I_3^u = \langle b - 1,\ u^8 + u^7 - 2u^6 - 2u^5 + 2u^4 + 2u^3 + u^2 + a + u - 1,\ u^{10} - 3u^8 + 4u^6 - u^4 - u^2 + 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 105 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. $\boldsymbol{I^u_1 =}$
$\boldsymbol{\langle 3u^{60} - 48u^{58} + \cdots + 4b + 4,\ 2u^{67} - 36u^{65} + \cdots + 4a - 4,\ u^{68} + 2u^{67} + \cdots + 5u + 2\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^3 \\ -u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -\frac{1}{2}u^{67} + 9u^{65} + \cdots - \frac{1}{4}u + 1 \\ -\frac{3}{4}u^{60} + 12u^{58} + \cdots + \frac{1}{2}u - 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -\frac{1}{4}u^{60} + \frac{15}{4}u^{58} + \cdots - \frac{1}{2}u + \frac{1}{2} \\ -\frac{1}{4}u^{60} + 4u^{58} + \cdots - \frac{5}{4}u^2 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^6 - u^4 + 1 \\ u^8 - 2u^6 + 2u^4 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -\frac{1}{2}u^{67} - \frac{1}{4}u^{66} + \cdots - \frac{11}{4}u^2 - \frac{7}{4}u \\ -\frac{1}{2}u^{67} - \frac{1}{2}u^{66} + \cdots - \frac{9}{4}u - \frac{1}{2} \end{pmatrix}$$
$$a_4 = \begin{pmatrix} \frac{1}{4}u^{55} - \frac{7}{2}u^{53} + \cdots + \frac{3}{4}u + 1 \\ \frac{1}{4}u^{57} - \frac{15}{4}u^{55} + \cdots - \frac{1}{2}u^2 + \frac{1}{2}u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^{11} - 2u^9 + 2u^7 + u^3 \\ u^{11} - 3u^9 + 4u^7 - u^5 - u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2u^{67} + 36u^{65} + \cdots - 12u - 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{68}+27u^{67}+\cdots+7896u+289$
c_2, c_7	$u^{68}+u^{67}+\cdots-20u+17$
c_3, c_4, c_8	$u^{68}+u^{67}+\cdots-42u+17$
c_5, c_{11}	$u^{68}+2u^{67}+\cdots+5u+2$
c_6, c_{12}	$u^{68}+6u^{67}+\cdots+160u+128$
c_9	$u^{68}-8u^{67}+\cdots+28469u+10016$
c_{10}	$u^{68}+36u^{67}+\cdots-19u+4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{68} + 39y^{67} + \cdots + 6510324y + 83521$
c_2, c_7	$y^{68} + 27y^{67} + \cdots + 7896y + 289$
c_3, c_4, c_8	$y^{68} + 71y^{67} + \cdots - 7272y + 289$
c_5, c_{11}	$y^{68} - 36y^{67} + \cdots + 19y + 4$
c_6, c_{12}	$y^{68} + 52y^{67} + \cdots + 1088512y + 16384$
c_9	$y^{68} + 8y^{67} + \cdots + 482721863y + 100320256$
c_{10}	$y^{68} - 8y^{67} + \cdots - 417y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.840906 + 0.541453I$ $a = -1.68268 - 0.94647I$ $b = -0.79895 + 1.76961I$	$0.64575 + 6.76137I$	$-3.02362 - 9.36135I$
$u = -0.840906 - 0.541453I$ $a = -1.68268 + 0.94647I$ $b = -0.79895 - 1.76961I$	$0.64575 - 6.76137I$	$-3.02362 + 9.36135I$
$u = 0.996210 + 0.105534I$ $a = -0.88720 - 1.68128I$ $b = -0.755001 - 0.743583I$	$-3.62273 - 3.17922I$	$-12.49077 + 5.37603I$
$u = 0.996210 - 0.105534I$ $a = -0.88720 + 1.68128I$ $b = -0.755001 + 0.743583I$	$-3.62273 + 3.17922I$	$-12.49077 - 5.37603I$
$u = -0.827181 + 0.584200I$ $a = 0.631027 + 0.169558I$ $b = -0.131814 - 1.265700I$	$8.49998 + 4.71847I$	$2.64745 - 4.37235I$
$u = -0.827181 - 0.584200I$ $a = 0.631027 - 0.169558I$ $b = -0.131814 + 1.265700I$	$8.49998 - 4.71847I$	$2.64745 + 4.37235I$
$u = 0.865742 + 0.583006I$ $a = 1.67800 - 0.77268I$ $b = 0.55259 + 1.85985I$	$6.64125 - 10.66220I$	$0. + 8.92755I$
$u = 0.865742 - 0.583006I$ $a = 1.67800 + 0.77268I$ $b = 0.55259 - 1.85985I$	$6.64125 + 10.66220I$	$0. - 8.92755I$
$u = -0.884770 + 0.361343I$ $a = 1.31924 - 0.62047I$ $b = -0.0505122 - 0.1233410I$	$-2.02149 + 1.35661I$	$-10.70049 - 3.21023I$
$u = -0.884770 - 0.361343I$ $a = 1.31924 + 0.62047I$ $b = -0.0505122 + 0.1233410I$	$-2.02149 - 1.35661I$	$-10.70049 + 3.21023I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.704686+0.598885I$ $a=-1.231360-0.615484I$ $b=-0.287687+1.027190I$	$8.85003-0.06365I$	$3.56810-2.34699I$
$u=-0.704686-0.598885I$ $a=-1.231360+0.615484I$ $b=-0.287687-1.027190I$	$8.85003+0.06365I$	$3.56810+2.34699I$
$u=\ \ 0.654533+0.611050I$ $a=-1.293350+0.557244I$ $b=\ \ 0.37269-1.71190I$	$7.24282+5.98050I$	$1.58701-2.73296I$
$u=\ \ 0.654533-0.611050I$ $a=-1.293350-0.557244I$ $b=\ \ 0.37269+1.71190I$	$7.24282-5.98050I$	$1.58701+2.73296I$
$u=-1.097730+0.129973I$ $a=\ \ 0.66528-1.74507I$ $b=\ \ 0.610710-1.198750I$	$1.58150+6.31789I$	0
$u=-1.097730-0.129973I$ $a=\ \ 0.66528+1.74507I$ $b=\ \ 0.610710+1.198750I$	$1.58150-6.31789I$	0
$u=\ \ 1.088810+0.220966I$ $a=-0.577505+0.470525I$ $b=\ \ 0.156355+0.374983I$	$2.95364-1.17645I$	0
$u=\ \ 1.088810-0.220966I$ $a=-0.577505-0.470525I$ $b=\ \ 0.156355-0.374983I$	$2.95364+1.17645I$	0
$u=-0.675962+0.538934I$ $a=\ \ 1.46405+0.27481I$ $b=-0.45008-1.66037I$	$1.11309-2.39299I$	$-1.31545+2.74693I$
$u=-0.675962-0.538934I$ $a=\ \ 1.46405-0.27481I$ $b=-0.45008+1.66037I$	$1.11309+2.39299I$	$-1.31545-2.74693I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.753612 + 0.388922I$ $a = -0.003675 - 0.950130I$ $b = 0.929815 - 0.107409I$	$1.24035 - 1.74892I$	$3.03511 + 5.28030I$
$u = 0.753612 - 0.388922I$ $a = -0.003675 + 0.950130I$ $b = 0.929815 + 0.107409I$	$1.24035 + 1.74892I$	$3.03511 - 5.28030I$
$u = 0.165754 + 0.823138I$ $a = 1.002930 + 0.124969I$ $b = 0.98242 - 1.90847I$	$3.07394 + 11.57570I$	$-1.74839 - 6.82824I$
$u = 0.165754 - 0.823138I$ $a = 1.002930 - 0.124969I$ $b = 0.98242 + 1.90847I$	$3.07394 - 11.57570I$	$-1.74839 + 6.82824I$
$u = 0.029718 + 0.835469I$ $a = -0.311656 + 0.504146I$ $b = 0.691747 + 0.421141I$	$-1.00288 - 1.92318I$	$-1.79190 + 3.81342I$
$u = 0.029718 - 0.835469I$ $a = -0.311656 - 0.504146I$ $b = 0.691747 - 0.421141I$	$-1.00288 + 1.92318I$	$-1.79190 - 3.81342I$
$u = -0.183684 + 0.797547I$ $a = 0.279594 - 0.071647I$ $b = 0.35544 + 1.52101I$	$5.39105 - 5.75675I$	$1.12004 + 2.96362I$
$u = -0.183684 - 0.797547I$ $a = 0.279594 + 0.071647I$ $b = 0.35544 - 1.52101I$	$5.39105 + 5.75675I$	$1.12004 - 2.96362I$
$u = 1.072680 + 0.514608I$ $a = -2.06130 - 0.56028I$ $b = -0.090665 - 1.048220I$	$3.97397 - 0.25739I$	0
$u = 1.072680 - 0.514608I$ $a = -2.06130 + 0.56028I$ $b = -0.090665 + 1.048220I$	$3.97397 + 0.25739I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.151153 + 0.793214I$ $a = -1.085160 + 0.133068I$ $b = -1.39874 - 1.64237I$	$-2.51385 - 7.29843I$	$-5.32805 + 6.53927I$
$u = -0.151153 - 0.793214I$ $a = -1.085160 - 0.133068I$ $b = -1.39874 + 1.64237I$	$-2.51385 + 7.29843I$	$-5.32805 - 6.53927I$
$u = -0.061331 + 0.780735I$ $a = 0.330547 + 0.805383I$ $b = -0.502018 - 0.085930I$	$-4.88006 - 0.19763I$	$-10.23533 - 0.14539I$
$u = -0.061331 - 0.780735I$ $a = 0.330547 - 0.805383I$ $b = -0.502018 + 0.085930I$	$-4.88006 + 0.19763I$	$-10.23533 + 0.14539I$
$u = 1.147840 + 0.446072I$ $a = 0.78870 - 2.15745I$ $b = 1.10678 - 0.89125I$	$-3.04492 - 5.41261I$	0
$u = 1.147840 - 0.446072I$ $a = 0.78870 + 2.15745I$ $b = 1.10678 + 0.89125I$	$-3.04492 + 5.41261I$	0
$u = -1.116720 + 0.521286I$ $a = -1.57151 - 0.51789I$ $b = -0.573997 + 0.218690I$	$4.70746 + 6.09415I$	0
$u = -1.116720 - 0.521286I$ $a = -1.57151 + 0.51789I$ $b = -0.573997 - 0.218690I$	$4.70746 - 6.09415I$	0
$u = -1.142120 + 0.472829I$ $a = 2.64269 - 0.71234I$ $b = 0.73682 - 1.37957I$	$-2.86459 + 2.56142I$	0
$u = -1.142120 - 0.472829I$ $a = 2.64269 + 0.71234I$ $b = 0.73682 + 1.37957I$	$-2.86459 - 2.56142I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.288870+0.702347I$ $a=-0.974335+0.183643I$ $b=-0.386475-0.456700I$	$7.11141-1.43004I$	$2.66134+2.04753I$
$u=-0.288870-0.702347I$ $a=-0.974335-0.183643I$ $b=-0.386475+0.456700I$	$7.11141+1.43004I$	$2.66134-2.04753I$
$u=\ \ 0.357888+0.667374I$ $a=-0.889683-0.281502I$ $b=\ \ 0.141604+1.285040I$	$6.03868-4.30670I$	$1.46994+3.45796I$
$u=\ \ 0.357888-0.667374I$ $a=-0.889683+0.281502I$ $b=\ \ 0.141604-1.285040I$	$6.03868+4.30670I$	$1.46994-3.45796I$
$u=\ \ 1.197530+0.346738I$ $a=-0.11563-1.85593I$ $b=\ \ 0.55742-1.36973I$	$1.21003+2.01792I$	0
$u=\ \ 1.197530-0.346738I$ $a=-0.11563+1.85593I$ $b=\ \ 0.55742+1.36973I$	$1.21003-2.01792I$	0
$u=\ \ 1.202190+0.372091I$ $a=-1.56784+2.63243I$ $b=-1.49112+1.42833I$	$-6.55660+3.40545I$	0
$u=\ \ 1.202190-0.372091I$ $a=-1.56784-2.63243I$ $b=-1.49112-1.42833I$	$-6.55660-3.40545I$	0
$u=-1.221200+0.356970I$ $a=\ \ 0.89428+2.61237I$ $b=\ \ 1.06051+1.77150I$	$-1.16641-7.64309I$	0
$u=-1.221200-0.356970I$ $a=\ \ 0.89428-2.61237I$ $b=\ \ 1.06051-1.77150I$	$-1.16641+7.64309I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.204100 + 0.423605I$ $a = -0.348738 - 0.171647I$ $b = -0.652313 + 0.123062I$	$-8.58591 - 4.02293I$	0
$u = 1.204100 - 0.423605I$ $a = -0.348738 + 0.171647I$ $b = -0.652313 - 0.123062I$	$-8.58591 + 4.02293I$	0
$u = -1.197470 + 0.478507I$ $a = -0.235493 - 0.884755I$ $b = -0.457387 + 0.202512I$	$-8.19611 + 4.78252I$	0
$u = -1.197470 - 0.478507I$ $a = -0.235493 + 0.884755I$ $b = -0.457387 - 0.202512I$	$-8.19611 - 4.78252I$	0
$u = -1.180790 + 0.525663I$ $a = 2.06732 - 0.85708I$ $b = 0.42377 - 1.66754I$	$2.45212 + 10.65030I$	0
$u = -1.180790 - 0.525663I$ $a = 2.06732 + 0.85708I$ $b = 0.42377 + 1.66754I$	$2.45212 - 10.65030I$	0
$u = -1.187140 + 0.513961I$ $a = -3.70852 - 0.08255I$ $b = -1.53628 + 1.72826I$	$-5.55900 + 12.12010I$	0
$u = -1.187140 - 0.513961I$ $a = -3.70852 + 0.08255I$ $b = -1.53628 - 1.72826I$	$-5.55900 - 12.12010I$	0
$u = 1.194400 + 0.526145I$ $a = 3.44519 + 0.50306I$ $b = 1.06198 + 1.98167I$	$0.0245 - 16.5311I$	0
$u = 1.194400 - 0.526145I$ $a = 3.44519 - 0.50306I$ $b = 1.06198 - 1.98167I$	$0.0245 + 16.5311I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.231000 + 0.440784I$ $a = 0.823478 - 0.382539I$ $b = 0.770134 - 0.469099I$	$-4.78562 + 6.43179I$	0
$u = -1.231000 - 0.440784I$ $a = 0.823478 + 0.382539I$ $b = 0.770134 + 0.469099I$	$-4.78562 - 6.43179I$	0
$u = 1.224950 + 0.470945I$ $a = 0.064399 - 1.290010I$ $b = 0.726960 - 0.347094I$	$-4.57008 - 2.76226I$	0
$u = 1.224950 - 0.470945I$ $a = 0.064399 + 1.290010I$ $b = 0.726960 + 0.347094I$	$-4.57008 + 2.76226I$	0
$u = -0.225662 + 0.547625I$ $a = 0.984096 + 0.221334I$ $b = 0.140194 + 1.076410I$	$-0.15904 + 1.57803I$	$-1.93957 - 4.05866I$
$u = -0.225662 - 0.547625I$ $a = 0.984096 - 0.221334I$ $b = 0.140194 - 1.076410I$	$-0.15904 - 1.57803I$	$-1.93957 + 4.05866I$
$u = 0.062422 + 0.547904I$ $a = 0.714824 + 0.515000I$ $b = 0.685106 + 0.637373I$	$-0.06279 + 1.44675I$	$-0.83204 - 5.13904I$
$u = 0.062422 - 0.547904I$ $a = 0.714824 - 0.515000I$ $b = 0.685106 - 0.637373I$	$-0.06279 - 1.44675I$	$-0.83204 + 5.13904I$

II. $\boldsymbol{I^u_2 = \langle -2319u^8a^2 - 1264u^8a + \cdots + 708a + 1030,\ 5u^8a + u^8 + \cdots - 3a - 3,\ u^9 - u^8 - 2u^7 + 3u^6 + u^5 - 3u^4 + 2u^3 - u + 1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^3 \\ -u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} a \\ 1.00346a^2u^8 + 0.546949au^8 + \cdots - 0.306361a - 0.445695 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.0207702a^2u^8 - 0.718304au^8 + \cdots + 1.16183a + 1.32583 \\ -0.0562527a^2u^8 + 1.11207au^8 + \cdots - 0.0216357a - 1.25746 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^6 - u^4 + 1 \\ u^8 - 2u^6 + 2u^4 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1.60623a^2u^8 - 0.215491au^8 + \cdots - 3.15145a + 1.19775 \\ -0.526179a^2u^8 - 1.13630au^8 + \cdots + 0.566854a + 1.74556 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.0207702a^2u^8 - 0.718304au^8 + \cdots + 1.16183a + 1.32583 \\ -0.0562527a^2u^8 + 1.11207au^8 + \cdots - 0.0216357a - 1.25746 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^6 + u^4 - 1 \\ -u^8 + 2u^6 - 2u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

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

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{27}+18u^{26}+\cdots+u-1$
c_2, c_3, c_4 c_7, c_8	$u^{27}+9u^{25}+\cdots+u+1$
c_5, c_{11}	$(u^9-u^8-2u^7+3u^6+u^5-3u^4+2u^3-u+1)^3$
c_6, c_{12}	$(u^9-3u^8+8u^7-13u^6+17u^5-17u^4+12u^3-6u^2+u+1)^3$
c_9	$(u^9-u^8+2u^7-u^6+3u^5-u^4+2u^3+u+1)^3$
c_{10}	$(u^9+5u^8+12u^7+15u^6+9u^5-u^4-4u^3-2u^2+u+1)^3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{27} - 18y^{26} + \cdots + 17y - 1$
c_2, c_3, c_4 c_7, c_8	$y^{27} + 18y^{26} + \cdots + y - 1$
c_5, c_{11}	$(y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1)^3$
c_6, c_{12}	$(y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1)^3$
c_9	$(y^9 + 3y^8 + 8y^7 + 13y^6 + 17y^5 + 17y^4 + 12y^3 + 6y^2 + y - 1)^3$
c_{10}	$(y^9 - y^8 + 12y^7 - 7y^6 + 37y^5 + y^4 - 10y^2 + 5y - 1)^3$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.772920 + 0.510351I$ $a = -1.015990 - 0.216914I$ $b = 0.53465 - 1.31702I$	$1.78344 - 2.09337I$	$0.51499 + 4.16283I$
$u = 0.772920 + 0.510351I$ $a = -1.49846 - 0.72657I$ $b = 0.466265 + 0.129322I$	$1.78344 - 2.09337I$	$0.51499 + 4.16283I$
$u = 0.772920 + 0.510351I$ $a = 1.25695 - 1.13794I$ $b = 0.99909 + 1.18770I$	$1.78344 - 2.09337I$	$0.51499 + 4.16283I$
$u = 0.772920 - 0.510351I$ $a = -1.015990 + 0.216914I$ $b = 0.53465 + 1.31702I$	$1.78344 + 2.09337I$	$0.51499 - 4.16283I$
$u = 0.772920 - 0.510351I$ $a = -1.49846 + 0.72657I$ $b = 0.466265 - 0.129322I$	$1.78344 + 2.09337I$	$0.51499 - 4.16283I$
$u = 0.772920 - 0.510351I$ $a = 1.25695 + 1.13794I$ $b = 0.99909 - 1.18770I$	$1.78344 + 2.09337I$	$0.51499 - 4.16283I$
$u = -0.825933$ $a = 0.164740$ $b = -0.407730$	-1.19845	-8.65230
$u = -0.825933$ $a = 1.58072 + 1.94080I$ $b = 1.203870 - 0.085974I$	-1.19845	-8.65230
$u = -0.825933$ $a = 1.58072 - 1.94080I$ $b = 1.203870 + 0.085974I$	-1.19845	-8.65230
$u = -1.173910 + 0.391555I$ $a = 0.060301 + 0.267806I$ $b = 0.850678 + 0.663233I$	$-4.37135 + 1.33617I$	$-7.28409 - 0.70175I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.173910+0.391555I$ $a=-0.02187-1.90349I$ $b=-0.677531-1.190630I$	$-4.37135+1.33617I$	$-7.28409-0.70175I$
$u=-1.173910+0.391555I$ $a=\ 2.60362+1.98656I$ $b=\ 1.82685+0.52740I$	$-4.37135+1.33617I$	$-7.28409-0.70175I$
$u=-1.173910-0.391555I$ $a=\ 0.060301-0.267806I$ $b=\ 0.850678-0.663233I$	$-4.37135-1.33617I$	$-7.28409+0.70175I$
$u=-1.173910-0.391555I$ $a=-0.02187+1.90349I$ $b=-0.677531+1.190630I$	$-4.37135-1.33617I$	$-7.28409+0.70175I$
$u=-1.173910-0.391555I$ $a=\ 2.60362-1.98656I$ $b=\ 1.82685-0.52740I$	$-4.37135-1.33617I$	$-7.28409+0.70175I$
$u=\ 0.141484+0.739668I$ $a=\ 1.137900+0.280832I$ $b=\ 1.68535-0.81163I$	$-0.61694+2.45442I$	$-2.32792-2.91298I$
$u=\ 0.141484+0.739668I$ $a=-0.610565+1.028440I$ $b=\ 0.652744-0.562733I$	$-0.61694+2.45442I$	$-2.32792-2.91298I$
$u=\ 0.141484+0.739668I$ $a=-0.363377+0.147221I$ $b=-0.33809+1.37436I$	$-0.61694+2.45442I$	$-2.32792-2.91298I$
$u=\ 0.141484-0.739668I$ $a=\ 1.137900-0.280832I$ $b=\ 1.68535+0.81163I$	$-0.61694-2.45442I$	$-2.32792+2.91298I$
$u=\ 0.141484-0.739668I$ $a=-0.610565-1.028440I$ $b=\ 0.652744+0.562733I$	$-0.61694-2.45442I$	$-2.32792+2.91298I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.141484 - 0.739668I$ $a = -0.363377 - 0.147221I$ $b = -0.33809 - 1.37436I$	$-0.61694 - 2.45442I$	$-2.32792 + 2.91298I$
$u = 1.172470 + 0.500383I$ $a = 0.589040 - 0.774213I$ $b = 0.578755 + 0.699902I$	$-3.59813 - 7.08493I$	$-5.57680 + 5.91335I$
$u = 1.172470 + 0.500383I$ $a = -2.17609 - 1.01614I$ $b = -0.46969 - 1.60732I$	$-3.59813 - 7.08493I$	$-5.57680 + 5.91335I$
$u = 1.172470 + 0.500383I$ $a = 3.37545 - 1.16633I$ $b = 1.89094 + 0.90742I$	$-3.59813 - 7.08493I$	$-5.57680 + 5.91335I$
$u = 1.172470 - 0.500383I$ $a = 0.589040 + 0.774213I$ $b = 0.578755 - 0.699902I$	$-3.59813 + 7.08493I$	$-5.57680 - 5.91335I$
$u = 1.172470 - 0.500383I$ $a = -2.17609 + 1.01614I$ $b = -0.46969 + 1.60732I$	$-3.59813 + 7.08493I$	$-5.57680 - 5.91335I$
$u = 1.172470 - 0.500383I$ $a = 3.37545 + 1.16633I$ $b = 1.89094 - 0.90742I$	$-3.59813 + 7.08493I$	$-5.57680 - 5.91335I$

III. $\boldsymbol{I_3^u = \langle b-1,\ u^8+u^7+\cdots+a-1,\ u^{10}-3u^8+4u^6-u^4-u^2+1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u \\ -u^3+u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^3 \\ -u^3+u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^8-u^7+2u^6+2u^5-2u^4-2u^3-u^2-u+1 \\ 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^8-u^7+2u^6+2u^5-2u^4-3u^3-u^2-u+1 \\ -u^3+u+1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^3 \\ u^5-u^3+u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^6-u^4+1 \\ u^8-2u^6+2u^4 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^8-u^7-3u^6+2u^5+3u^4-u^3+u^2-u-2 \\ -u^9+2u^7-u^5-2u^3+u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^8-u^7+2u^6+2u^5-2u^4-2u^3-u^2-u+2 \\ 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^9-2u^7+u^5+2u^3-u \\ 0 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u^8-8u^6+8u^4+4u^2-8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^{10}$
c_2, c_3, c_4 c_7, c_8	$(y+1)^{10}$
c_5, c_{11}	$(y^5-3y^4+4y^3-y^2-y+1)^2$
c_6, c_{12}	$(y^5+5y^4+8y^3+3y^2-y+1)^2$
c_9	$(y^5-5y^4+8y^3-3y^2-y-1)^2$
c_{10}	$(y^5-y^4+8y^3-3y^2+3y-1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.822375 + 0.339110I$ $a = 1.50891 + 0.32986I$ $b = 1.00000$	$-0.32910 + 1.53058I$	$-4.51511 - 4.43065I$
$u = -0.822375 - 0.339110I$ $a = 1.50891 - 0.32986I$ $b = 1.00000$	$-0.32910 - 1.53058I$	$-4.51511 + 4.43065I$
$u = 0.822375 + 0.339110I$ $a = -1.25135 - 1.88547I$ $b = 1.00000$	$-0.32910 - 1.53058I$	$-4.51511 + 4.43065I$
$u = 0.822375 - 0.339110I$ $a = -1.25135 + 1.88547I$ $b = 1.00000$	$-0.32910 + 1.53058I$	$-4.51511 - 4.43065I$
$u = 0.766826I$ $a = 0.370286 + 0.821196I$ $b = 1.00000$	-2.40108	-5.48110
$u = -0.766826I$ $a = 0.370286 - 0.821196I$ $b = 1.00000$	-2.40108	-5.48110
$u = -1.200150 + 0.455697I$ $a = 1.292420 + 0.186244I$ $b = 1.00000$	$-5.87256 + 4.40083I$	$-8.74431 - 3.49859I$
$u = -1.200150 - 0.455697I$ $a = 1.292420 - 0.186244I$ $b = 1.00000$	$-5.87256 - 4.40083I$	$-8.74431 + 3.49859I$
$u = 1.200150 + 0.455697I$ $a = 1.07974 - 1.56305I$ $b = 1.00000$	$-5.87256 - 4.40083I$	$-8.74431 + 3.49859I$
$u = 1.200150 - 0.455697I$ $a = 1.07974 + 1.56305I$ $b = 1.00000$	$-5.87256 + 4.40083I$	$-8.74431 - 3.49859I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^{10})(u^{27}+18u^{26}+\cdots+u-1)(u^{68}+27u^{67}+\cdots+7896u+289)$
c_2, c_7	$((u^2+1)^5)(u^{27}+9u^{25}+\cdots+u+1)(u^{68}+u^{67}+\cdots-20u+17)$
c_3, c_4, c_8	$((u^2+1)^5)(u^{27}+9u^{25}+\cdots+u+1)(u^{68}+u^{67}+\cdots-42u+17)$
c_5, c_{11}	$(u^9-u^8-2u^7+3u^6+u^5-3u^4+2u^3-u+1)^3$ $\cdot(u^{10}-3u^8+4u^6-u^4-u^2+1)(u^{68}+2u^{67}+\cdots+5u+2)$
c_6, c_{12}	$(u^9-3u^8+8u^7-13u^6+17u^5-17u^4+12u^3-6u^2+u+1)^3$ $\cdot(u^{10}+5u^8+8u^6+3u^4-u^2+1)(u^{68}+6u^{67}+\cdots+160u+128)$
c_9	$(u^5+u^4-2u^3-u^2+u-1)^2$ $\cdot(u^9-u^8+2u^7-u^6+3u^5-u^4+2u^3+u+1)^3$ $\cdot(u^{68}-8u^{67}+\cdots+28469u+10016)$
c_{10}	$(u^5-3u^4+4u^3-u^2-u+1)^2$ $\cdot(u^9+5u^8+12u^7+15u^6+9u^5-u^4-4u^3-2u^2+u+1)^3$ $\cdot(u^{68}+36u^{67}+\cdots-19u+4)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^{10})(y^{27}-18y^{26}+\cdots+17y-1)$ $\cdot\,(y^{68}+39y^{67}+\cdots+6510324y+83521)$
c_2, c_7	$((y+1)^{10})(y^{27}+18y^{26}+\cdots+y-1)(y^{68}+27y^{67}+\cdots+7896y+289)$
c_3, c_4, c_8	$((y+1)^{10})(y^{27}+18y^{26}+\cdots+y-1)(y^{68}+71y^{67}+\cdots-7272y+289)$
c_5, c_{11}	$(y^5-3y^4+4y^3-y^2-y+1)^2$ $\cdot\,(y^9-5y^8+12y^7-15y^6+9y^5+y^4-4y^3+2y^2+y-1)^3$ $\cdot\,(y^{68}-36y^{67}+\cdots+19y+4)$
c_6, c_{12}	$(y^5+5y^4+8y^3+3y^2-y+1)^2$ $\cdot\,(y^9+7y^8+20y^7+25y^6+5y^5-15y^4+22y^2+13y-1)^3$ $\cdot\,(y^{68}+52y^{67}+\cdots+1088512y+16384)$
c_9	$(y^5-5y^4+8y^3-3y^2-y-1)^2$ $\cdot\,(y^9+3y^8+8y^7+13y^6+17y^5+17y^4+12y^3+6y^2+y-1)^3$ $\cdot\,(y^{68}+8y^{67}+\cdots+482721863y+100320256)$
c_{10}	$(y^5-y^4+8y^3-3y^2+3y-1)^2$ $\cdot\,(y^9-y^8+12y^7-7y^6+37y^5+y^4-10y^2+5y-1)^3$ $\cdot\,(y^{68}-8y^{67}+\cdots-417y+16)$