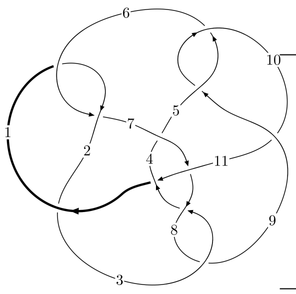
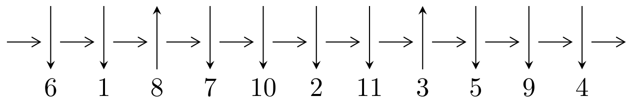
$11a_{212}$ ($K11a_{212}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -10169u^{18} - 100279u^{17} + \cdots + 16444b + 115784,$$
$$- 15886u^{18} - 173333u^{17} + \cdots + 147996a - 951450,\ u^{19} + 11u^{18} + \cdots - 408u - 72\rangle$$
$$I_2^u = \langle -75u^{35} + 383u^{34} + \cdots + 8b + 212,\ 636u^{35}a + 43u^{35} + \cdots + 1470a - 238,\ u^{36} - 5u^{35} + \cdots - 16u + 3\rangle$$
$$I_3^u = \langle -2u^7 + 5u^6 - 11u^5 + 12u^4 - 11u^3 + 6u^2 + b - 5u + 1,\ -2u^7 + 3u^6 - 7u^5 + 3u^4 - 3u^3 - u^2 + a - 2u - 2,$$
$$u^8 - 2u^7 + 5u^6 - 5u^5 + 6u^4 - 4u^3 + 4u^2 - u + 1\rangle$$
$$I_4^u = \langle u^2a - u^3 + au - u^2 + b - u + 1,\ -u^3a - 2u^2a + 2u^3 + a^2 - 3au + 2u^2 - a + 3u - 1,\ u^4 + u^3 + 2u^2 + 1\rangle$$

$$I_1^v = \langle a,\ b - 1,\ v - 1\rangle$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 108 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. $\boldsymbol{I_1^u =}$
$\boldsymbol{\langle -1.02\times10^4u^{18} - 1.00\times10^5u^{17} + \cdots + 1.64\times10^4b + 1.16\times10^5,\ -1.59\times10^4u^{18} - 1.73\times10^5u^{17} + \cdots + 1.48\times10^5a - 9.51\times10^5,\ u^{19} + 11u^{18} + \cdots - 408u - 72\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.107341u^{18} + 1.17120u^{17} + \cdots + 18.8285u + 6.42889 \\ 0.618402u^{18} + 6.09821u^{17} + \cdots - 54.0570u - 7.04111 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.0977932u^{18} + 0.457323u^{17} + \cdots + 69.0524u + 14.1574 \\ -0.694661u^{18} - 7.34791u^{17} + \cdots + 195.043u + 36.7964 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.222793u^{18} - 2.08232u^{17} + \cdots + 5.44757u - 0.157423 \\ -0.0553393u^{18} - 0.402092u^{17} + \cdots + 28.9571u + 8.20360 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.324472u^{18} - 2.74858u^{17} + \cdots - 8.23791u - 2.15037 \\ 0.157869u^{18} + 2.29762u^{17} + \cdots - 175.909u - 35.7215 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.480381u^{18} - 5.30821u^{17} + \cdots + 103.723u + 14.5621 \\ -0.150389u^{18} - 1.42623u^{17} + \cdots - 84.6227u - 22.7665 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.901210u^{18} - 9.04017u^{17} + \cdots + 115.314u + 16.7261 \\ -0.348699u^{18} - 2.61384u^{17} + \cdots - 168.918u - 39.7808 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.400700u^{18} + 4.88295u^{17} + \cdots - 227.797u - 43.5867 \\ 0.911761u^{18} + 9.80996u^{17} + \cdots - 300.682u - 57.0567 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.400700u^{18} + 4.88295u^{17} + \cdots - 227.797u - 43.5867 \\ 0.911761u^{18} + 9.80996u^{17} + \cdots - 300.682u - 57.0567 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{4653}{4111}u^{18} - \frac{45527}{4111}u^{17} + \cdots + \frac{398988}{4111}u + \frac{53874}{4111}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_6 c_9	$u^{19} + u^{18} + \cdots + 2u + 1$
c_2, c_{10}	$u^{19} + 9u^{18} + \cdots - 2u + 1$
c_3, c_8	$u^{19} - 11u^{18} + \cdots - 408u + 72$
c_4	$u^{19} - 17u^{18} + \cdots - 1920u + 256$
c_7, c_{11}	$u^{19} - 2u^{18} + \cdots + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_6 c_9	$y^{19} - 9y^{18} + \cdots - 2y - 1$
c_2, c_{10}	$y^{19} + 7y^{18} + \cdots + 26y - 1$
c_3, c_8	$y^{19} + 11y^{18} + \cdots + 2016y - 5184$
c_4	$y^{19} - y^{18} + \cdots + 245760y - 65536$
c_7, c_{11}	$y^{19} - 6y^{18} + \cdots + 27y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.358353+0.924986I$ $a=-0.311412+0.717346I$ $b=-0.150073+0.860307I$	$-0.58834-1.54269I$	$-4.69839+4.51597I$
$u=-0.358353-0.924986I$ $a=-0.311412-0.717346I$ $b=-0.150073-0.860307I$	$-0.58834+1.54269I$	$-4.69839-4.51597I$
$u=-0.966676+0.332222I$ $a=-0.818238+0.627994I$ $b=-0.311396-0.164177I$	$4.64927+0.26455I$	$-1.71990+1.02803I$
$u=-0.966676-0.332222I$ $a=-0.818238-0.627994I$ $b=-0.311396+0.164177I$	$4.64927-0.26455I$	$-1.71990-1.02803I$
$u=-0.161360+1.222540I$ $a=\ \ 0.464053-1.047230I$ $b=-0.11073-2.09115I$	$-8.96802-0.88990I$	$-16.2208+0.4171I$
$u=-0.161360-1.222540I$ $a=\ \ 0.464053+1.047230I$ $b=-0.11073+2.09115I$	$-8.96802+0.88990I$	$-16.2208-0.4171I$
$u=-1.289970+0.199680I$ $a=\ \ 0.686320-0.541724I$ $b=-0.058453+0.397559I$	$1.64114+11.01570I$	$-7.29016-9.56628I$
$u=-1.289970-0.199680I$ $a=\ \ 0.686320+0.541724I$ $b=-0.058453-0.397559I$	$1.64114-11.01570I$	$-7.29016+9.56628I$
$u=-0.957767+0.906773I$ $a=\ \ 0.311369+0.803824I$ $b=-0.398706+0.951941I$	$-2.39512+0.38448I$	$-10.41076-2.93354I$
$u=-0.957767-0.906773I$ $a=\ \ 0.311369-0.803824I$ $b=-0.398706-0.951941I$	$-2.39512-0.38448I$	$-10.41076+2.93354I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.580441 + 1.193400I$ $a = -0.361294 + 1.095690I$ $b = -0.81291 + 1.75794I$	$1.92326 - 5.83662I$	$-4.80851 + 2.86417I$
$u = -0.580441 - 1.193400I$ $a = -0.361294 - 1.095690I$ $b = -0.81291 - 1.75794I$	$1.92326 + 5.83662I$	$-4.80851 - 2.86417I$
$u = 0.601065$ $a = -0.393184$ $b = 0.378379$	-1.08922	-8.82220
$u = -0.65100 + 1.34345I$ $a = 0.271854 - 1.066410I$ $b = 0.98510 - 2.05670I$	$-2.0202 - 17.7092I$	$-9.44410 + 10.28902I$
$u = -0.65100 - 1.34345I$ $a = 0.271854 + 1.066410I$ $b = 0.98510 + 2.05670I$	$-2.0202 + 17.7092I$	$-9.44410 - 10.28902I$
$u = -0.88646 + 1.29579I$ $a = -0.280005 - 0.575557I$ $b = 0.078111 - 1.304770I$	$-3.47013 - 7.94178I$	$-12.2006 + 9.0681I$
$u = -0.88646 - 1.29579I$ $a = -0.280005 + 0.575557I$ $b = 0.078111 + 1.304770I$	$-3.47013 + 7.94178I$	$-12.2006 - 9.0681I$
$u = 0.05150 + 1.63379I$ $a = 0.067278 - 0.325219I$ $b = -0.410127 - 0.971726I$	$-5.85414 + 4.86122I$	$-16.7957 - 3.2884I$
$u = 0.05150 - 1.63379I$ $a = 0.067278 + 0.325219I$ $b = -0.410127 + 0.971726I$	$-5.85414 - 4.86122I$	$-16.7957 + 3.2884I$

II. $\boldsymbol{I_2^u = \langle -75u^{35} + 383u^{34} + \cdots + 8b + 212,\ 636u^{35}a + 43u^{35} + \cdots + 1470a - 238,\ u^{36} - 5u^{35} + \cdots - 16u + 3\rangle}$

(i) Arc colorings

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

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

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

$$a_9 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} a \\ 9.37500u^{35} - 47.8750u^{34} + \cdots + 161.750u - 26.5000 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -\frac{75}{8}u^{35} + \frac{383}{8}u^{34} + \cdots + a + \frac{53}{2} \\ \frac{9}{4}u^{35} - \frac{125}{8}u^{34} + \cdots + \frac{941}{8}u - \frac{47}{2} \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -3.37500au^{35} + 1.54167u^{35} + \cdots + 21.3750a - 3.66667 \\ -0.250000au^{35} - 4.75000u^{35} + \cdots + 16.5000a + 13.5000 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -9.37500au^{35} - 3.66667u^{35} + \cdots + 26.5000a + 1.79167 \\ -\frac{57}{8}u^{35}a - \frac{47}{8}u^{35} + \cdots + 3a - \frac{7}{4} \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -4.87500au^{35} + 12.2917u^{35} + \cdots + 26.7500a - 25.7917 \\ -7.37500au^{35} + 13.5000u^{35} + \cdots + 17.6250a - 23.3750 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 5.87500au^{35} + 13.7083u^{35} + \cdots + 2.75000a - 6.33333 \\ 1.62500au^{35} + 4.87500u^{35} + \cdots + 12.7500a - 26.7500 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -\frac{57}{8}u^{35} + \frac{129}{4}u^{34} + \cdots + a + 3 \\ \frac{9}{4}u^{35} - \frac{125}{8}u^{34} + \cdots + \frac{941}{8}u - \frac{47}{2} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -\frac{57}{8}u^{35} + \frac{129}{4}u^{34} + \cdots + a + 3 \\ \frac{9}{4}u^{35} - \frac{125}{8}u^{34} + \cdots + \frac{941}{8}u - \frac{47}{2} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{47}{2}u^{35} - \frac{211}{2}u^{34} + \cdots + 73u + \frac{3}{2}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_6 c_9	$u^{72} - u^{71} + \cdots - 26u + 43$
c_2, c_{10}	$u^{72} + 29u^{71} + \cdots + 25272u + 1849$
c_3, c_8	$(u^{36} + 5u^{35} + \cdots + 16u + 3)^2$
c_4	$(u^{36} + 7u^{35} + \cdots + 10u + 1)^2$
c_7, c_{11}	$u^{72} - 2u^{71} + \cdots - 22u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_6 c_9	$y^{72} - 29y^{71} + \cdots - 25272y + 1849$
c_2, c_{10}	$y^{72} + 31y^{71} + \cdots - 7699036y + 3418801$
c_3, c_8	$(y^{36} + 23y^{35} + \cdots + 140y + 9)^2$
c_4	$(y^{36} + 7y^{35} + \cdots - 4y + 1)^2$
c_7, c_{11}	$y^{72} - 4y^{71} + \cdots - 18y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.323607 + 0.937654I$ $a = -0.175351 - 0.450939I$ $b = -1.42855 - 2.11019I$	$-0.65303 + 8.38929I$	$-8.7813 - 13.2523I$
$u = 0.323607 + 0.937654I$ $a = 2.11473 - 0.35700I$ $b = 1.05507 - 1.24949I$	$-0.65303 + 8.38929I$	$-8.7813 - 13.2523I$
$u = 0.323607 - 0.937654I$ $a = -0.175351 + 0.450939I$ $b = -1.42855 + 2.11019I$	$-0.65303 - 8.38929I$	$-8.7813 + 13.2523I$
$u = 0.323607 - 0.937654I$ $a = 2.11473 + 0.35700I$ $b = 1.05507 + 1.24949I$	$-0.65303 - 8.38929I$	$-8.7813 + 13.2523I$
$u = -0.407223 + 0.893066I$ $a = -0.791967 + 0.557123I$ $b = 0.506201 + 0.724691I$	$1.70318 - 0.95050I$	$-2.58255 + 0.79026I$
$u = -0.407223 + 0.893066I$ $a = -0.28278 + 1.70972I$ $b = -1.24717 + 1.80857I$	$1.70318 - 0.95050I$	$-2.58255 + 0.79026I$
$u = -0.407223 - 0.893066I$ $a = -0.791967 - 0.557123I$ $b = 0.506201 - 0.724691I$	$1.70318 + 0.95050I$	$-2.58255 - 0.79026I$
$u = -0.407223 - 0.893066I$ $a = -0.28278 - 1.70972I$ $b = -1.24717 - 1.80857I$	$1.70318 + 0.95050I$	$-2.58255 - 0.79026I$
$u = 0.285005 + 0.986264I$ $a = 0.906188 + 0.471916I$ $b = -0.680137 + 0.614572I$	$1.39070 + 5.45819I$	$-4.75268 - 7.85090I$
$u = 0.285005 + 0.986264I$ $a = -0.18402 - 1.83089I$ $b = -0.98618 - 2.55701I$	$1.39070 + 5.45819I$	$-4.75268 - 7.85090I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.285005 - 0.986264I$ $a = 0.906188 - 0.471916I$ $b = -0.680137 - 0.614572I$	$1.39070 - 5.45819I$	$-4.75268 + 7.85090I$
$u = 0.285005 - 0.986264I$ $a = -0.18402 + 1.83089I$ $b = -0.98618 + 2.55701I$	$1.39070 - 5.45819I$	$-4.75268 + 7.85090I$
$u = -0.204395 + 0.939901I$ $a = 0.159162 - 0.415191I$ $b = 1.60287 - 1.64255I$	$0.14515 - 3.09361I$	$-8.82386 + 5.93072I$
$u = -0.204395 + 0.939901I$ $a = 1.66507 + 1.03102I$ $b = 0.64754 + 1.27304I$	$0.14515 - 3.09361I$	$-8.82386 + 5.93072I$
$u = -0.204395 - 0.939901I$ $a = 0.159162 + 0.415191I$ $b = 1.60287 + 1.64255I$	$0.14515 + 3.09361I$	$-8.82386 - 5.93072I$
$u = -0.204395 - 0.939901I$ $a = 1.66507 - 1.03102I$ $b = 0.64754 - 1.27304I$	$0.14515 + 3.09361I$	$-8.82386 - 5.93072I$
$u = -0.988537 + 0.351198I$ $a = 0.225935 + 0.946460I$ $b = -0.0017989 - 0.1085760I$	$-1.77149 - 4.10144I$	$-9.97996 + 6.24934I$
$u = -0.988537 + 0.351198I$ $a = 0.588772 + 0.758163I$ $b = -0.473418 + 0.617705I$	$-1.77149 - 4.10144I$	$-9.97996 + 6.24934I$
$u = -0.988537 - 0.351198I$ $a = 0.225935 - 0.946460I$ $b = -0.0017989 + 0.1085760I$	$-1.77149 + 4.10144I$	$-9.97996 - 6.24934I$
$u = -0.988537 - 0.351198I$ $a = 0.588772 - 0.758163I$ $b = -0.473418 - 0.617705I$	$-1.77149 + 4.10144I$	$-9.97996 - 6.24934I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.080650 + 0.243992I$ $a = -0.856190 - 0.655908I$ $b = -0.047350 + 0.413085I$	$3.39022 - 5.68113I$	$-3.92911 + 4.67272I$
$u = 1.080650 + 0.243992I$ $a = 0.724773 + 0.544582I$ $b = 0.249139 - 0.068035I$	$3.39022 - 5.68113I$	$-3.92911 + 4.67272I$
$u = 1.080650 - 0.243992I$ $a = -0.856190 + 0.655908I$ $b = -0.047350 - 0.413085I$	$3.39022 + 5.68113I$	$-3.92911 - 4.67272I$
$u = 1.080650 - 0.243992I$ $a = 0.724773 - 0.544582I$ $b = 0.249139 + 0.068035I$	$3.39022 + 5.68113I$	$-3.92911 - 4.67272I$
$u = -0.118764 + 0.883260I$ $a = 1.240850 + 0.207363I$ $b = -0.794679 + 0.293981I$	$0.57130 + 1.50593I$	$-8.88680 + 0.90138I$
$u = -0.118764 + 0.883260I$ $a = -0.11523 - 1.91114I$ $b = 0.64321 - 2.55956I$	$0.57130 + 1.50593I$	$-8.88680 + 0.90138I$
$u = -0.118764 - 0.883260I$ $a = 1.240850 - 0.207363I$ $b = -0.794679 - 0.293981I$	$0.57130 - 1.50593I$	$-8.88680 - 0.90138I$
$u = -0.118764 - 0.883260I$ $a = -0.11523 + 1.91114I$ $b = 0.64321 + 2.55956I$	$0.57130 - 1.50593I$	$-8.88680 - 0.90138I$
$u = 0.375701 + 1.185220I$ $a = -0.185369 - 0.878085I$ $b = 0.06699 - 1.99722I$	$-4.64275 + 3.93521I$	$-11.18615 - 4.33934I$
$u = 0.375701 + 1.185220I$ $a = 0.543890 + 1.086350I$ $b = 0.68365 + 1.43792I$	$-4.64275 + 3.93521I$	$-11.18615 - 4.33934I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.375701 - 1.185220I$ $a = -0.185369 + 0.878085I$ $b = 0.06699 + 1.99722I$	$-4.64275 - 3.93521I$	$-11.18615 + 4.33934I$
$u = 0.375701 - 1.185220I$ $a = 0.543890 - 1.086350I$ $b = 0.68365 - 1.43792I$	$-4.64275 - 3.93521I$	$-11.18615 + 4.33934I$
$u = 0.366522 + 0.661253I$ $a = -1.43742 - 0.22873I$ $b = 0.789147 + 0.111369I$	$0.15412 - 5.32337I$	$-7.89175 + 4.81078I$
$u = 0.366522 + 0.661253I$ $a = -0.25927 + 1.87585I$ $b = 1.20633 + 1.72823I$	$0.15412 - 5.32337I$	$-7.89175 + 4.81078I$
$u = 0.366522 - 0.661253I$ $a = -1.43742 + 0.22873I$ $b = 0.789147 - 0.111369I$	$0.15412 + 5.32337I$	$-7.89175 - 4.81078I$
$u = 0.366522 - 0.661253I$ $a = -0.25927 - 1.87585I$ $b = 1.20633 - 1.72823I$	$0.15412 + 5.32337I$	$-7.89175 - 4.81078I$
$u = 0.733621 + 0.056495I$ $a = -0.712576 + 0.589887I$ $b = 0.390901 + 0.249697I$	$-1.027180 + 0.066620I$	$-7.89585 - 0.16999I$
$u = 0.733621 + 0.056495I$ $a = 0.000334 - 0.690063I$ $b = 0.498708 - 0.023336I$	$-1.027180 + 0.066620I$	$-7.89585 - 0.16999I$
$u = 0.733621 - 0.056495I$ $a = -0.712576 - 0.589887I$ $b = 0.390901 - 0.249697I$	$-1.027180 - 0.066620I$	$-7.89585 + 0.16999I$
$u = 0.733621 - 0.056495I$ $a = 0.000334 + 0.690063I$ $b = 0.498708 + 0.023336I$	$-1.027180 - 0.066620I$	$-7.89585 + 0.16999I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.461229 + 1.192960I$ $a = 0.735450 + 0.704350I$ $b = 0.941882 + 0.432336I$	$-4.33727 + 4.33344I$	$0. - 7.98095I$
$u = 0.461229 + 1.192960I$ $a = -0.079786 - 0.637262I$ $b = -0.29680 - 1.88578I$	$-4.33727 + 4.33344I$	$0. - 7.98095I$
$u = 0.461229 - 1.192960I$ $a = 0.735450 - 0.704350I$ $b = 0.941882 - 0.432336I$	$-4.33727 - 4.33344I$	$0. + 7.98095I$
$u = 0.461229 - 1.192960I$ $a = -0.079786 + 0.637262I$ $b = -0.29680 + 1.88578I$	$-4.33727 - 4.33344I$	$0. + 7.98095I$
$u = 0.261513 + 1.263160I$ $a = 0.008648 + 0.711153I$ $b = 0.111760 + 1.082130I$	$-2.36014 - 1.61358I$	0
$u = 0.261513 + 1.263160I$ $a = 0.056995 - 0.282130I$ $b = 0.796685 - 0.665417I$	$-2.36014 - 1.61358I$	0
$u = 0.261513 - 1.263160I$ $a = 0.008648 - 0.711153I$ $b = 0.111760 - 1.082130I$	$-2.36014 + 1.61358I$	0
$u = 0.261513 - 1.263160I$ $a = 0.056995 + 0.282130I$ $b = 0.796685 + 0.665417I$	$-2.36014 + 1.61358I$	0
$u = -0.386093 + 1.315540I$ $a = 0.321924 - 0.776161I$ $b = -0.07289 - 2.11359I$	$-6.83745 - 8.51873I$	0
$u = -0.386093 + 1.315540I$ $a = 0.567468 - 1.208310I$ $b = 1.22818 - 2.05777I$	$-6.83745 - 8.51873I$	0

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.386093 - 1.315540I$ $a = 0.321924 + 0.776161I$ $b = -0.07289 + 2.11359I$	$-6.83745 + 8.51873I$	0
$u = -0.386093 - 1.315540I$ $a = 0.567468 + 1.208310I$ $b = 1.22818 + 2.05777I$	$-6.83745 + 8.51873I$	0
$u = 0.790023 + 1.128140I$ $a = -0.183542 + 0.797397I$ $b = 0.321793 + 1.049820I$	$-2.51334 + 3.34840I$	0
$u = 0.790023 + 1.128140I$ $a = 0.286168 - 0.668765I$ $b = 0.038092 - 1.366730I$	$-2.51334 + 3.34840I$	0
$u = 0.790023 - 1.128140I$ $a = -0.183542 - 0.797397I$ $b = 0.321793 - 1.049820I$	$-2.51334 - 3.34840I$	0
$u = 0.790023 - 1.128140I$ $a = 0.286168 + 0.668765I$ $b = 0.038092 + 1.366730I$	$-2.51334 - 3.34840I$	0
$u = -0.341744 + 0.520197I$ $a = -0.607007 + 0.115057I$ $b = -0.304801 + 1.331690I$	$2.67726 - 2.50734I$	$0.46124 + 4.14494I$
$u = -0.341744 + 0.520197I$ $a = -2.20469 + 1.12056I$ $b = -0.885119 - 0.256430I$	$2.67726 - 2.50734I$	$0.46124 + 4.14494I$
$u = -0.341744 - 0.520197I$ $a = -0.607007 - 0.115057I$ $b = -0.304801 - 1.331690I$	$2.67726 + 2.50734I$	$0.46124 - 4.14494I$
$u = -0.341744 - 0.520197I$ $a = -2.20469 - 1.12056I$ $b = -0.885119 + 0.256430I$	$2.67726 + 2.50734I$	$0.46124 - 4.14494I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.598145 + 1.270670I$ $a = 0.364362 + 1.030040I$ $b = 0.72567 + 1.78948I$	$0.12476 + 11.63330I$	0
$u = 0.598145 + 1.270670I$ $a = -0.282009 - 1.154280I$ $b = -1.01814 - 2.10114I$	$0.12476 + 11.63330I$	0
$u = 0.598145 - 1.270670I$ $a = 0.364362 - 1.030040I$ $b = 0.72567 - 1.78948I$	$0.12476 - 11.63330I$	0
$u = 0.598145 - 1.270670I$ $a = -0.282009 + 1.154280I$ $b = -1.01814 + 2.10114I$	$0.12476 - 11.63330I$	0
$u = 0.255236 + 0.508176I$ $a = 0.494661 - 0.107326I$ $b = 0.75887 + 1.28212I$	$2.67098 - 2.77341I$	$-0.394325 + 0.708366I$
$u = 0.255236 + 0.508176I$ $a = -2.79447 - 0.04340I$ $b = -0.731661 + 0.492551I$	$2.67098 - 2.77341I$	$-0.394325 + 0.708366I$
$u = 0.255236 - 0.508176I$ $a = 0.494661 + 0.107326I$ $b = 0.75887 - 1.28212I$	$2.67098 + 2.77341I$	$-0.394325 - 0.708366I$
$u = 0.255236 - 0.508176I$ $a = -2.79447 + 0.04340I$ $b = -0.731661 - 0.492551I$	$2.67098 + 2.77341I$	$-0.394325 - 0.708366I$
$u = -0.58449 + 1.51506I$ $a = -0.162437 - 0.495879I$ $b = 0.227921 - 1.342130I$	$-5.13435 - 2.75063I$	0
$u = -0.58449 + 1.51506I$ $a = -0.024617 - 0.210269I$ $b = -0.521920 - 0.498154I$	$-5.13435 - 2.75063I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.58449 - 1.51506I$ $a = -0.162437 + 0.495879I$ $b = 0.227921 + 1.342130I$	$-5.13435 + 2.75063I$	0
$u = -0.58449 - 1.51506I$ $a = -0.024617 + 0.210269I$ $b = -0.521920 + 0.498154I$	$-5.13435 + 2.75063I$	0

III.
$\boldsymbol{I_3^u = \langle -2u^7 + 5u^6 + \cdots + b + 1,\ -2u^7 + 3u^6 + \cdots + a - 2,\ u^8 - 2u^7 + \cdots - u + 1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 2u^7 - 3u^6 + 7u^5 - 3u^4 + 3u^3 + u^2 + 2u + 2 \\ 2u^7 - 5u^6 + 11u^5 - 12u^4 + 11u^3 - 6u^2 + 5u - 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^7 + 6u^4 - 6u^3 + 7u^2 - 2u + 4 \\ 2u^7 - 4u^6 + 9u^5 - 8u^4 + 7u^3 - 3u^2 + 3u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u^7 + 3u^6 - 7u^5 + 10u^4 - 11u^3 + 10u^2 - 7u + 4 \\ u^7 - 2u^6 + 5u^5 - 5u^4 + 5u^3 - 2u^2 + u + 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^7 + u^6 - 3u^5 - u^3 - 2u^2 - 3 \\ -u^7 + 2u^6 - 5u^5 + 5u^4 - 6u^3 + 4u^2 - 3u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 2u^7 - 5u^6 + 11u^5 - 13u^4 + 12u^3 - 9u^2 + 6u - 1 \\ -u^6 + 2u^5 - 5u^4 + 5u^3 - 6u^2 + 3u - 2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 3u^7 - 8u^6 + 17u^5 - 20u^4 + 17u^3 - 11u^2 + 8u - 3 \\ -2u^6 + 4u^5 - 9u^4 + 8u^3 - 7u^2 + 3u - 3 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 2u^7 - 2u^6 + 5u^5 + 2u^4 - 2u^3 + 6u^2 + 4 \\ 2u^7 - 4u^6 + 9u^5 - 7u^4 + 6u^3 - u^2 + 3u + 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 2u^7 - 2u^6 + 5u^5 + 2u^4 - 2u^3 + 6u^2 + 4 \\ 2u^7 - 4u^6 + 9u^5 - 7u^4 + 6u^3 - u^2 + 3u + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -5u^7 + 15u^6 - 33u^5 + 42u^4 - 36u^3 + 22u^2 - 18u - 3$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^8 - 2u^6 + 3u^4 + u^3 - 2u^2 - u + 1$
c_2, c_{10}	$u^8 + 4u^7 + 10u^6 + 16u^5 + 19u^4 + 17u^3 + 12u^2 + 5u + 1$
c_3	$u^8 - 2u^7 + 5u^6 - 5u^5 + 6u^4 - 4u^3 + 4u^2 - u + 1$
c_4	$u^8 - 3u^7 + 3u^6 - u^5 - u^4 + u^3 + 1$
c_6, c_9	$u^8 - 2u^6 + 3u^4 - u^3 - 2u^2 + u + 1$
c_7, c_{11}	$u^8 - u^7 + 2u^4 - u^3 - u^2 + 1$
c_8	$u^8 + 2u^7 + 5u^6 + 5u^5 + 6u^4 + 4u^3 + 4u^2 + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_6 c_9	$y^8 - 4y^7 + 10y^6 - 16y^5 + 19y^4 - 17y^3 + 12y^2 - 5y + 1$
c_2, c_{10}	$y^8 + 4y^7 + 10y^6 + 12y^5 + 19y^4 + 27y^3 + 12y^2 - y + 1$
c_3, c_8	$y^8 + 6y^7 + 17y^6 + 27y^5 + 34y^4 + 32y^3 + 20y^2 + 7y + 1$
c_4	$y^8 - 3y^7 + y^6 - y^5 + 5y^4 + 5y^3 - 2y^2 + 1$
c_7, c_{11}	$y^8 - y^7 + 4y^6 - 4y^5 + 6y^4 - 5y^3 + 5y^2 - 2y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.792109 + 0.738037I$ $a = -0.382665 + 0.800987I$ $b = 0.073913 + 0.733193I$	$-2.49555 + 0.86293I$	$-13.14261 - 3.03469I$
$u = 0.792109 - 0.738037I$ $a = -0.382665 - 0.800987I$ $b = 0.073913 - 0.733193I$	$-2.49555 - 0.86293I$	$-13.14261 + 3.03469I$
$u = -0.289722 + 0.810357I$ $a = -1.207080 - 0.334530I$ $b = 0.08655 - 1.63964I$	$-0.50761 - 7.31144I$	$-8.44025 + 5.07969I$
$u = -0.289722 - 0.810357I$ $a = -1.207080 + 0.334530I$ $b = 0.08655 + 1.63964I$	$-0.50761 + 7.31144I$	$-8.44025 - 5.07969I$
$u = 0.010381 + 0.674737I$ $a = 1.24580 + 1.30467I$ $b = -0.28206 + 1.43052I$	$1.91736 + 3.67399I$	$-5.72808 - 5.47869I$
$u = 0.010381 - 0.674737I$ $a = 1.24580 - 1.30467I$ $b = -0.28206 - 1.43052I$	$1.91736 - 3.67399I$	$-5.72808 + 5.47869I$
$u = 0.48723 + 1.51401I$ $a = -0.156057 - 0.473494I$ $b = -0.378403 - 1.209690I$	$-5.49394 + 5.83988I$	$-13.6891 - 9.4941I$
$u = 0.48723 - 1.51401I$ $a = -0.156057 + 0.473494I$ $b = -0.378403 + 1.209690I$	$-5.49394 - 5.83988I$	$-13.6891 + 9.4941I$

IV.

$\boldsymbol{I^u_4 = \langle u^2a - u^3 + au - u^2 + b - u + 1,\ -u^3a + 2u^3 + \cdots - a - 1,\ u^4 + u^3 + 2u^2 + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -6u^3 - 6u^2 - 7u - 7$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^8 - 2u^6 - u^5 + 3u^4 + u^3 - 2u^2 + 1$
c_2, c_{10}	$u^8 + 4u^7 + 10u^6 + 17u^5 + 21u^4 + 17u^3 + 10u^2 + 4u + 1$
c_3	$(u^4 + u^3 + 2u^2 + 1)^2$
c_4	$(u^4 + u^3 + 1)^2$
c_6, c_9	$u^8 - 2u^6 + u^5 + 3u^4 - u^3 - 2u^2 + 1$
c_7, c_{11}	$u^8 - 3u^7 + 3u^6 - u^5 - u^4 + 2u^3 - u^2 + 1$
c_8	$(u^4 - u^3 + 2u^2 + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_6 c_9	$y^8 - 4y^7 + 10y^6 - 17y^5 + 21y^4 - 17y^3 + 10y^2 - 4y + 1$
c_2, c_{10}	$y^8 + 4y^7 + 6y^6 + 15y^5 + 33y^4 + 15y^3 + 6y^2 + 4y + 1$
c_3, c_8	$(y^4 + 3y^3 + 6y^2 + 4y + 1)^2$
c_4	$(y^4 - y^3 + 2y^2 + 1)^2$
c_7, c_{11}	$y^8 - 3y^7 + y^6 + 3y^5 + y^4 + 4y^3 - y^2 - 2y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.175098 + 0.691825I$ $a = 1.258400 + 0.403038I$ $b = -0.799065 - 0.398882I$	$1.13814 + 2.37936I$	$-4.06162 - 4.69148I$
$u = 0.175098 + 0.691825I$ $a = -0.87507 + 1.88950I$ $b = 0.00729 + 1.99959I$	$1.13814 + 2.37936I$	$-4.06162 - 4.69148I$
$u = 0.175098 - 0.691825I$ $a = 1.258400 - 0.403038I$ $b = -0.799065 + 0.398882I$	$1.13814 - 2.37936I$	$-4.06162 + 4.69148I$
$u = 0.175098 - 0.691825I$ $a = -0.87507 - 1.88950I$ $b = 0.00729 - 1.99959I$	$1.13814 - 2.37936I$	$-4.06162 + 4.69148I$
$u = -0.675098 + 1.227920I$ $a = -0.243445 + 0.679234I$ $b = -0.693631 + 0.465880I$	$-4.42801 - 3.38562I$	$-12.43838 + 2.38747I$
$u = -0.675098 + 1.227920I$ $a = -0.139876 - 0.483891I$ $b = -0.01459 - 1.49846I$	$-4.42801 - 3.38562I$	$-12.43838 + 2.38747I$
$u = -0.675098 - 1.227920I$ $a = -0.243445 - 0.679234I$ $b = -0.693631 - 0.465880I$	$-4.42801 + 3.38562I$	$-12.43838 - 2.38747I$
$u = -0.675098 - 1.227920I$ $a = -0.139876 + 0.483891I$ $b = -0.01459 + 1.49846I$	$-4.42801 + 3.38562I$	$-12.43838 - 2.38747I$

V. $\boldsymbol{I_1^v = \langle a,\ b-1,\ v-1\rangle}$

(i) Arc colorings

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

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

$a_4 = \begin{pmatrix}1\\0\end{pmatrix}$

$a_9 = \begin{pmatrix}1\\0\end{pmatrix}$

$a_{11} = \begin{pmatrix}0\\1\end{pmatrix}$

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

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

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

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

$a_6 = \begin{pmatrix}-1\\0\end{pmatrix}$

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

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -18$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v		$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v =$	1.00000		
$a =$	0	−4.93480	−18.0000
$b =$	1.00000		

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_5	$(u-1)(u^8-2u^6+3u^4+u^3-2u^2-u+1)$ $\cdot(u^8-2u^6-u^5+3u^4+u^3-2u^2+1)(u^{19}+u^{18}+\cdots+2u+1)$ $\cdot(u^{72}-u^{71}+\cdots-26u+43)$
c_2, c_{10}	$(u+1)(u^8+4u^7+10u^6+16u^5+19u^4+17u^3+12u^2+5u+1)$ $\cdot(u^8+4u^7+10u^6+17u^5+21u^4+17u^3+10u^2+4u+1)$ $\cdot(u^{19}+9u^{18}+\cdots-2u+1)(u^{72}+29u^{71}+\cdots+25272u+1849)$
c_3	$u(u^4+u^3+2u^2+1)^2(u^8-2u^7+\cdots-u+1)$ $\cdot(u^{19}-11u^{18}+\cdots-408u+72)(u^{36}+5u^{35}+\cdots+16u+3)^2$
c_4	$(u-1)(u^4+u^3+1)^2(u^8-3u^7+3u^6-u^5-u^4+u^3+1)$ $\cdot(u^{19}-17u^{18}+\cdots-1920u+256)(u^{36}+7u^{35}+\cdots+10u+1)^2$
c_6, c_9	$(u-1)(u^8-2u^6+3u^4-u^3-2u^2+u+1)$ $\cdot(u^8-2u^6+u^5+3u^4-u^3-2u^2+1)(u^{19}+u^{18}+\cdots+2u+1)$ $\cdot(u^{72}-u^{71}+\cdots-26u+43)$
c_7, c_{11}	$(u+1)(u^8-3u^7+\cdots-u^2+1)(u^8-u^7+\cdots-u^2+1)$ $\cdot(u^{19}-2u^{18}+\cdots+u+1)(u^{72}-2u^{71}+\cdots-22u+1)$
c_8	$u(u^4-u^3+2u^2+1)^2(u^8+2u^7+\cdots+u+1)$ $\cdot(u^{19}-11u^{18}+\cdots-408u+72)(u^{36}+5u^{35}+\cdots+16u+3)^2$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_6 c_9	$(y-1)(y^8-4y^7+10y^6-17y^5+21y^4-17y^3+10y^2-4y+1)$ $\cdot(y^8-4y^7+10y^6-16y^5+19y^4-17y^3+12y^2-5y+1)$ $\cdot(y^{19}-9y^{18}+\cdots-2y-1)(y^{72}-29y^{71}+\cdots-25272y+1849)$
c_2, c_{10}	$(y-1)(y^8+4y^7+6y^6+15y^5+33y^4+15y^3+6y^2+4y+1)$ $\cdot(y^8+4y^7+10y^6+12y^5+19y^4+27y^3+12y^2-y+1)$ $\cdot(y^{19}+7y^{18}+\cdots+26y-1)$ $\cdot(y^{72}+31y^{71}+\cdots-7699036y+3418801)$
c_3, c_8	$y(y^4+3y^3+6y^2+4y+1)^2$ $\cdot(y^8+6y^7+17y^6+27y^5+34y^4+32y^3+20y^2+7y+1)$ $\cdot(y^{19}+11y^{18}+\cdots+2016y-5184)(y^{36}+23y^{35}+\cdots+140y+9)^2$
c_4	$(y-1)(y^4-y^3+2y^2+1)^2(y^8-3y^7+\cdots-2y^2+1)$ $\cdot(y^{19}-y^{18}+\cdots+245760y-65536)(y^{36}+7y^{35}+\cdots-4y+1)^2$
c_7, c_{11}	$(y-1)(y^8-3y^7+y^6+3y^5+y^4+4y^3-y^2-2y+1)$ $\cdot(y^8-y^7+4y^6-4y^5+6y^4-5y^3+5y^2-2y+1)$ $\cdot(y^{19}-6y^{18}+\cdots+27y-1)(y^{72}-4y^{71}+\cdots-18y+1)$