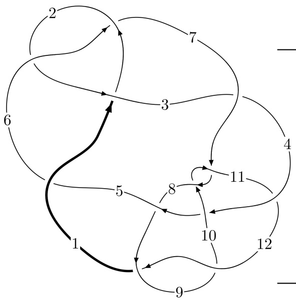
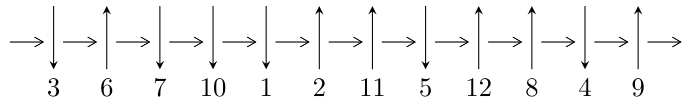
$12a_{0260}$ ($K12a_{0260}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle &-1.75234\times10^{17}u^{39} + 5.61074\times10^{17}u^{38} + \cdots + 1.58801\times10^{18}b - 1.77103\times10^{18},\\
&-9.73786\times10^{17}u^{39} - 2.24750\times10^{17}u^{38} + \cdots + 3.17601\times10^{18}a + 6.50880\times10^{18},\\
&u^{40} + 2u^{39} + \cdots - 15u - 4\rangle\\
I_2^u = \langle &142u^{29}a + u^{29} + \cdots - 811a + 77,\ 4u^{28}a + u^{29} + \cdots - 5a + 16,\ u^{30} + u^{29} + \cdots + u - 1\rangle\\
I_3^u = \langle &2u^4 - 2u^3 + 2u^2 + 2b - u,\ -2u^2 + 2a + u - 2,\ u^5 - u^4 + 2u^3 - u^2 + u - 1\rangle\\
I_4^u = \langle &-au + b - 2a + u + 1,\ a^2 - 2a + 2,\ u^2 + u + 1\rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 109 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. $I^u_1 = \langle -1.75\times10^{17}u^{39} + 5.61\times10^{17}u^{38} + \cdots + 1.59\times10^{18}b - 1.77\times10^{18},\ -9.74\times10^{17}u^{39} - 2.25\times10^{17}u^{38} + \cdots + 3.18\times10^{18}a + 6.51\times10^{18},\ u^{40} + 2u^{39} + \cdots - 15u - 4\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_7 = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}u^4+u^2+1\\u^4\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0.306607u^{39} + 0.0707647u^{38} + \cdots - 2.18335u - 2.04936\\0.110349u^{39} - 0.353320u^{38} + \cdots + 4.43538u + 1.11525\end{pmatrix}$$
$$a_8 = \begin{pmatrix}0.330016u^{39} + 0.209936u^{38} + \cdots - 2.54790u - 1.41013\\0.167912u^{39} - 0.146809u^{38} + \cdots + 3.63862u + 0.864836\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}0.233887u^{39} + 0.0964315u^{38} + \cdots - 2.14298u - 1.71555\\0.223896u^{39} + 0.0820644u^{38} + \cdots + 1.09448u + 0.165309\end{pmatrix}$$
$$a_1 = \begin{pmatrix}u^2+1\\-u^4\end{pmatrix}$$
$$a_5 = \begin{pmatrix}u^5+2u^3+u\\-u^7-u^5+u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}0.606364u^{39} + 0.274704u^{38} + \cdots - 4.91727u - 2.84677\\0.385943u^{39} - 0.202353u^{38} + \cdots + 5.39621u + 1.32664\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0.263635u^{39} + 0.0269093u^{38} + \cdots - 1.67340u - 1.47960\\0.148444u^{39} - 0.225204u^{38} + \cdots + 3.90113u + 0.775015\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{1027807058031671441}{794003375424954487}u^{39} - \frac{7796249979768242351}{3176013501699817948}u^{38} + \cdots - \frac{1978648037828171537}{794003375424954487}u + \frac{6704965863438424 6}{794003375424954487}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{40} + 22u^{39} + \cdots - u + 16$
c_2, c_6	$u^{40} - 2u^{39} + \cdots + 15u - 4$
c_3, c_5	$u^{40} + 2u^{39} + \cdots + 871u - 676$
c_4	$u^{40} - 3u^{39} + \cdots + 512u + 2048$
c_7, c_9, c_{10} c_{12}	$u^{40} - 5u^{39} + \cdots - 3u - 1$
c_8, c_{11}	$32(32u^{40} + 48u^{39} + \cdots + 8u + 4)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{40} - 6y^{39} + \cdots - 3905y + 256$
c_2, c_6	$y^{40} + 22y^{39} + \cdots - y + 16$
c_3, c_5	$y^{40} - 34y^{39} + \cdots + 2269839y + 456976$
c_4	$y^{40} - 13y^{39} + \cdots - 63176704y + 4194304$
c_7, c_9, c_{10} c_{12}	$y^{40} + 27y^{39} + \cdots + 25y + 1$
c_8, c_{11}	$1024(1024y^{40} - 27904y^{39} + \cdots + 16y + 16)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.748783 + 0.635787I$ $a = 0.497441 - 0.487921I$ $b = -0.443502 + 0.321931I$	$-3.86456 - 4.42335I$	$-6.59807 + 7.34601I$
$u = -0.748783 - 0.635787I$ $a = 0.497441 + 0.487921I$ $b = -0.443502 - 0.321931I$	$-3.86456 + 4.42335I$	$-6.59807 - 7.34601I$
$u = 0.370444 + 0.884043I$ $a = -0.741241 - 0.879542I$ $b = -0.990076 + 0.305719I$	$1.27740 + 1.88898I$	$-6.0015 - 15.6995I$
$u = 0.370444 - 0.884043I$ $a = -0.741241 + 0.879542I$ $b = -0.990076 - 0.305719I$	$1.27740 - 1.88898I$	$-6.0015 + 15.6995I$
$u = 0.936692 + 0.132944I$ $a = -0.36069 - 2.07229I$ $b = -0.283700 - 0.679214I$	$-10.28620 - 2.94658I$	$-8.50665 + 2.50672I$
$u = 0.936692 - 0.132944I$ $a = -0.36069 + 2.07229I$ $b = -0.283700 + 0.679214I$	$-10.28620 + 2.94658I$	$-8.50665 - 2.50672I$
$u = -0.893287 + 0.111704I$ $a = -0.24516 + 2.54481I$ $b = -0.611222 + 0.896510I$	$-11.6323 + 12.6478I$	$-5.02011 - 6.24043I$
$u = -0.893287 - 0.111704I$ $a = -0.24516 - 2.54481I$ $b = -0.611222 - 0.896510I$	$-11.6323 - 12.6478I$	$-5.02011 + 6.24043I$
$u = -0.433282 + 1.016950I$ $a = -0.826445 + 0.289312I$ $b = -1.227630 + 0.661551I$	$-1.48385 - 1.77946I$	$-1.213579 + 0.177328I$
$u = -0.433282 - 1.016950I$ $a = -0.826445 - 0.289312I$ $b = -1.227630 - 0.661551I$	$-1.48385 + 1.77946I$	$-1.213579 - 0.177328I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.735196 + 0.474957I$ $a = 0.73676 + 1.52515I$ $b = 0.299735 + 0.089122I$	$-4.66772 - 7.25009I$	$-3.73082 + 5.45853I$
$u = 0.735196 - 0.474957I$ $a = 0.73676 - 1.52515I$ $b = 0.299735 - 0.089122I$	$-4.66772 + 7.25009I$	$-3.73082 - 5.45853I$
$u = 0.590773 + 1.005950I$ $a = 0.968619 + 0.798321I$ $b = 2.11021 + 1.04129I$	$-6.21633 + 12.24890I$	$-5.37332 - 9.94766I$
$u = 0.590773 - 1.005950I$ $a = 0.968619 - 0.798321I$ $b = 2.11021 - 1.04129I$	$-6.21633 - 12.24890I$	$-5.37332 + 9.94766I$
$u = -0.691554 + 0.944218I$ $a = 0.219338 - 0.024885I$ $b = 0.996837 - 0.702945I$	$-4.74262 - 0.98558I$	$-10.53556 - 1.39688I$
$u = -0.691554 - 0.944218I$ $a = 0.219338 + 0.024885I$ $b = 0.996837 + 0.702945I$	$-4.74262 + 0.98558I$	$-10.53556 + 1.39688I$
$u = -0.429290 + 1.094810I$ $a = 1.52361 + 0.07658I$ $b = 2.25201 + 0.30626I$	$-1.51361 - 4.99339I$	$-1.46170 + 7.63475I$
$u = -0.429290 - 1.094810I$ $a = 1.52361 - 0.07658I$ $b = 2.25201 - 0.30626I$	$-1.51361 + 4.99339I$	$-1.46170 - 7.63475I$
$u = -0.810513$ $a = -1.68768$ $b = 0.0637912$	-1.48600	-8.82010
$u = -0.298599 + 0.749021I$ $a = -0.230770 + 0.654861I$ $b = -0.010961 + 0.514630I$	$-0.340785 - 1.228130I$	$-3.72246 + 5.05532I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.298599-0.749021I$ $a=-0.230770-0.654861I$ $b=-0.010961-0.514630I$	$-0.340785+1.228130I$	$-3.72246-5.05532I$
$u=0.043335+1.221830I$ $a=-1.41988+0.07791I$ $b=-2.52419-0.17469I$	$-10.36550-5.41067I$	$-11.07269+4.06686I$
$u=0.043335-1.221830I$ $a=-1.41988-0.07791I$ $b=-2.52419+0.17469I$	$-10.36550+5.41067I$	$-11.07269-4.06686I$
$u=0.340574+0.682840I$ $a=-0.201912-1.203320I$ $b=-1.136840-0.348081I$	$1.86966+1.36297I$	$7.37182+2.84076I$
$u=0.340574-0.682840I$ $a=-0.201912+1.203320I$ $b=-1.136840+0.348081I$	$1.86966-1.36297I$	$7.37182-2.84076I$
$u=0.732733$ $a=0.0215748$ $b=0.419703$	-1.91322	-6.72230
$u=0.455122+1.187290I$ $a=0.297888+0.394001I$ $b=0.358967+0.124690I$	$-5.28776+4.30879I$	$-10.28965-3.19866I$
$u=0.455122-1.187290I$ $a=0.297888-0.394001I$ $b=0.358967-0.124690I$	$-5.28776-4.30879I$	$-10.28965+3.19866I$
$u=-0.459206+1.219680I$ $a=0.496160+0.913959I$ $b=0.85669+1.97796I$	$-5.08353-4.54254I$	$-11.30086+4.03212I$
$u=-0.459206-1.219680I$ $a=0.496160-0.913959I$ $b=0.85669-1.97796I$	$-5.08353+4.54254I$	$-11.30086-4.03212I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.395526+1.274220I$ $a=\ \ 1.88050+0.61513I$ $b=\ \ 2.81622-0.05833I$	$-15.9475+8.1867I$	$-9.06394-3.34621I$
$u=-0.395526-1.274220I$ $a=\ \ 1.88050-0.61513I$ $b=\ \ 2.81622+0.05833I$	$-15.9475-8.1867I$	$-9.06394+3.34621I$
$u=-0.521628+1.236120I$ $a=-2.58052+0.56454I$ $b=-3.72507+0.61373I$	$-15.0274-17.7587I$	$-7.82233+9.25326I$
$u=-0.521628-1.236120I$ $a=-2.58052-0.56454I$ $b=-3.72507-0.61373I$	$-15.0274+17.7587I$	$-7.82233-9.25326I$
$u=\ \ 0.380735+1.301160I$ $a=\ \ 1.75721-0.48165I$ $b=\ \ 2.71281-0.14779I$	$-14.8538+1.6038I$	$-12.02430-0.97260I$
$u=\ \ 0.380735-1.301160I$ $a=\ \ 1.75721+0.48165I$ $b=\ \ 2.71281+0.14779I$	$-14.8538-1.6038I$	$-12.02430+0.97260I$
$u=\ \ 0.538772+1.252000I$ $a=-1.97956-0.36072I$ $b=-2.92363-0.63492I$	$-13.7050+8.2667I$	$-10.58240-5.91047I$
$u=\ \ 0.538772-1.252000I$ $a=-1.97956+0.36072I$ $b=-2.92363+0.63492I$	$-13.7050-8.2667I$	$-10.58240+5.91047I$
$u=-0.481597+0.152677I$ $a=-0.83330-1.69163I$ $b=-0.018409-0.472499I$	$1.02330+1.25064I$	$5.09440-3.99293I$
$u=-0.481597-0.152677I$ $a=-0.83330+1.69163I$ $b=-0.018409+0.472499I$	$1.02330-1.25064I$	$5.09440+3.99293I$

II. $I_2^u =$
$\langle 142u^{29}a+u^{29}+\cdots-811a+77,\ 4u^{28}a+u^{29}+\cdots-5a+16,\ u^{30}+u^{29}+\cdots+u-1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_7 = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}u^4+u^2+1\\u^4\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}a\\-0.181354au^{29}-0.00127714u^{29}+\cdots+1.03576a-0.0983397\end{pmatrix}$$
$$a_8 = \begin{pmatrix}1.07791au^{29}-1.96424u^{29}+\cdots-0.00127714a+2.75351\\1.96424au^{29}-1.90166u^{29}+\cdots+0.246488a+3.57216\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}0.494253au^{29}-0.609195u^{29}+\cdots+0.0574713a+0.0919540\\0.132822au^{29}-0.365262u^{29}+\cdots+0.227331a+0.874840\end{pmatrix}$$
$$a_1 = \begin{pmatrix}u^2+1\\-u^4\end{pmatrix}$$
$$a_5 = \begin{pmatrix}u^5+2u^3+u\\-u^7-u^5+u\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}u^{29}+8u^{27}+\cdots+4u^3+u\\u^{29}+7u^{27}+\cdots-u^3-u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}1.03576au^{29}-2.09834u^{29}+\cdots-0.246488a+1.42784\\0.937420au^{29}+0.922095u^{29}+\cdots+0.181354a+2.00128\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^{29}-4u^{28}-32u^{27}-28u^{26}-120u^{25}-96u^{24}-260u^{23}-196u^{22}-332u^{21}-256u^{20}-196u^{19}-204u^{18}+76u^{17}-72u^{16}+224u^{15}+52u^{14}+136u^{13}+108u^{12}-12u^{11}+100u^{10}-60u^{9}+44u^{8}-32u^{7}-12u^{6}-8u^{5}-24u^{4}+8u^{3}-12u^{2}+8u-6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{30}+17u^{29}+\cdots-u+1)^2$
c_2, c_6	$(u^{30}-u^{29}+\cdots-u-1)^2$
c_3, c_5	$(u^{30}+u^{29}+\cdots+7u-1)^2$
c_4	$(u^{30}+u^{29}+\cdots+u-1)^2$
c_7, c_9, c_{10} c_{12}	$u^{60}+11u^{59}+\cdots+20u+1$
c_8, c_{11}	$u^{60}+5u^{59}+\cdots-23472726u+8156149$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{30} - 7y^{29} + \cdots - 25y + 1)^2$
c_2, c_6	$(y^{30} + 17y^{29} + \cdots - y + 1)^2$
c_3, c_5	$(y^{30} - 31y^{29} + \cdots - 49y + 1)^2$
c_4	$(y^{30} - 11y^{29} + \cdots - y + 1)^2$
c_7, c_9, c_{10} c_{12}	$y^{60} + 43y^{59} + \cdots + 64y + 1$
c_8, c_{11}	$y^{60} - 37y^{59} + \cdots - 1403816325059308y + 66522766510201$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.095027 + 1.028250I$ $a = 1.034680 + 0.226441I$ $b = 2.30549 + 0.52767I$	$-5.04140 - 2.04857I$	$-7.94351 + 2.92796I$
$u = 0.095027 + 1.028250I$ $a = 0.716670 + 0.339240I$ $b = 0.426153 - 0.394651I$	$-5.04140 - 2.04857I$	$-7.94351 + 2.92796I$
$u = 0.095027 - 1.028250I$ $a = 1.034680 - 0.226441I$ $b = 2.30549 - 0.52767I$	$-5.04140 + 2.04857I$	$-7.94351 - 2.92796I$
$u = 0.095027 - 1.028250I$ $a = 0.716670 - 0.339240I$ $b = 0.426153 + 0.394651I$	$-5.04140 + 2.04857I$	$-7.94351 - 2.92796I$
$u = -0.486868 + 0.916512I$ $a = -0.940915 - 0.299954I$ $b = -1.039270 - 0.311684I$	$-1.61342 - 2.06909I$	$-0.15841 + 3.38718I$
$u = -0.486868 + 0.916512I$ $a = -0.447231 + 0.917418I$ $b = -1.24616 + 1.37787I$	$-1.61342 - 2.06909I$	$-0.15841 + 3.38718I$
$u = -0.486868 - 0.916512I$ $a = -0.940915 + 0.299954I$ $b = -1.039270 + 0.311684I$	$-1.61342 + 2.06909I$	$-0.15841 - 3.38718I$
$u = -0.486868 - 0.916512I$ $a = -0.447231 - 0.917418I$ $b = -1.24616 - 1.37787I$	$-1.61342 + 2.06909I$	$-0.15841 - 3.38718I$
$u = 0.336716 + 1.031390I$ $a = -0.398995 + 0.561283I$ $b = -1.50734 - 0.06821I$	$-6.92657 + 2.97945I$	$-9.92079 - 5.34085I$
$u = 0.336716 + 1.031390I$ $a = 0.64157 + 1.48251I$ $b = 1.74824 + 1.30378I$	$-6.92657 + 2.97945I$	$-9.92079 - 5.34085I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.336716 - 1.031390I$ $a = -0.398995 - 0.561283I$ $b = -1.50734 + 0.06821I$	$-6.92657 - 2.97945I$	$-9.92079 + 5.34085I$
$u = 0.336716 - 1.031390I$ $a = 0.64157 - 1.48251I$ $b = 1.74824 - 1.30378I$	$-6.92657 - 2.97945I$	$-9.92079 + 5.34085I$
$u = 0.500817 + 0.966472I$ $a = 0.522463 + 0.779303I$ $b = 0.877769 + 0.011516I$	$-2.27531 + 7.42449I$	$-2.02063 - 8.82247I$
$u = 0.500817 + 0.966472I$ $a = -0.759314 - 1.014940I$ $b = -1.98900 - 1.15324I$	$-2.27531 + 7.42449I$	$-2.02063 - 8.82247I$
$u = 0.500817 - 0.966472I$ $a = 0.522463 - 0.779303I$ $b = 0.877769 - 0.011516I$	$-2.27531 - 7.42449I$	$-2.02063 + 8.82247I$
$u = 0.500817 - 0.966472I$ $a = -0.759314 + 1.014940I$ $b = -1.98900 + 1.15324I$	$-2.27531 - 7.42449I$	$-2.02063 + 8.82247I$
$u = -0.272716 + 0.834978I$ $a = 4.75539 + 1.58121I$ $b = 5.93533 + 1.26168I$	$-3.79299 - 1.32269I$	$-1.12281 + 4.79072I$
$u = -0.272716 + 0.834978I$ $a = 2.73856 - 4.77786I$ $b = 1.76585 - 4.35750I$	$-3.79299 - 1.32269I$	$-1.12281 + 4.79072I$
$u = -0.272716 - 0.834978I$ $a = 4.75539 - 1.58121I$ $b = 5.93533 - 1.26168I$	$-3.79299 + 1.32269I$	$-1.12281 - 4.79072I$
$u = -0.272716 - 0.834978I$ $a = 2.73856 + 4.77786I$ $b = 1.76585 + 4.35750I$	$-3.79299 + 1.32269I$	$-1.12281 - 4.79072I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.856648$ $a = 0.36456 + 2.45841I$ $b = -0.369614 + 0.732227I$	-10.8641	-7.49220
$u = -0.856648$ $a = 0.36456 - 2.45841I$ $b = -0.369614 - 0.732227I$	-10.8641	-7.49220
$u = -0.851057 + 0.073998I$ $a = 1.134850 + 0.440270I$ $b = -0.235397 + 0.177357I$	$-6.70542 + 6.72016I$	$-3.40084 - 4.93754I$
$u = -0.851057 + 0.073998I$ $a = 0.02043 - 2.70525I$ $b = 0.471768 - 0.912252I$	$-6.70542 + 6.72016I$	$-3.40084 - 4.93754I$
$u = -0.851057 - 0.073998I$ $a = 1.134850 - 0.440270I$ $b = -0.235397 - 0.177357I$	$-6.70542 - 6.72016I$	$-3.40084 + 4.93754I$
$u = -0.851057 - 0.073998I$ $a = 0.02043 + 2.70525I$ $b = 0.471768 + 0.912252I$	$-6.70542 - 6.72016I$	$-3.40084 + 4.93754I$
$u = 0.814472 + 0.061657I$ $a = -0.211672 - 0.026337I$ $b = -0.622855 + 0.448979I$	$-5.23568 - 1.35458I$	$-1.234126 + 0.230757I$
$u = 0.814472 + 0.061657I$ $a = 0.71424 + 2.65174I$ $b = 0.706924 + 1.195690I$	$-5.23568 - 1.35458I$	$-1.234126 + 0.230757I$
$u = 0.814472 - 0.061657I$ $a = -0.211672 + 0.026337I$ $b = -0.622855 - 0.448979I$	$-5.23568 + 1.35458I$	$-1.234126 - 0.230757I$
$u = 0.814472 - 0.061657I$ $a = 0.71424 - 2.65174I$ $b = 0.706924 - 1.195690I$	$-5.23568 + 1.35458I$	$-1.234126 - 0.230757I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.517153+0.543315I$ $a=\ \ 0.374179+1.229410I$ $b=\ \ 0.087079+0.755551I$	$-0.57483-2.05267I$	$2.41797+3.48780I$
$u=-0.517153+0.543315I$ $a=-1.328260+0.442484I$ $b=-0.139959-0.267825I$	$-0.57483-2.05267I$	$2.41797+3.48780I$
$u=-0.517153-0.543315I$ $a=\ \ 0.374179-1.229410I$ $b=\ \ 0.087079-0.755551I$	$-0.57483+2.05267I$	$2.41797-3.48780I$
$u=-0.517153-0.543315I$ $a=-1.328260-0.442484I$ $b=-0.139959+0.267825I$	$-0.57483+2.05267I$	$2.41797-3.48780I$
$u=\ \ 0.552271+0.456360I$ $a=\ \ 0.048193+0.721700I$ $b=\ \ 0.879122+0.103276I$	$-0.86006-3.18388I$	$1.51706+3.33039I$
$u=\ \ 0.552271+0.456360I$ $a=-1.00716-1.45803I$ $b=-0.385363+0.145063I$	$-0.86006-3.18388I$	$1.51706+3.33039I$
$u=\ \ 0.552271-0.456360I$ $a=\ \ 0.048193-0.721700I$ $b=\ \ 0.879122-0.103276I$	$-0.86006+3.18388I$	$1.51706-3.33039I$
$u=\ \ 0.552271-0.456360I$ $a=-1.00716+1.45803I$ $b=-0.385363-0.145063I$	$-0.86006+3.18388I$	$1.51706-3.33039I$
$u=\ \ 0.429988+1.221650I$ $a=-0.770876-0.449946I$ $b=-0.527325-0.034027I$	$-9.03965+2.99724I$	$-4.94829-3.11480I$
$u=\ \ 0.429988+1.221650I$ $a=-2.43427+1.26220I$ $b=-3.31200+0.90775I$	$-9.03965+2.99724I$	$-4.94829-3.11480I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.429988 - 1.221650I$ $a = -0.770876 + 0.449946I$ $b = -0.527325 + 0.034027I$	$-9.03965 - 2.99724I$	$-4.94829 + 3.11480I$
$u = 0.429988 - 1.221650I$ $a = -2.43427 - 1.26220I$ $b = -3.31200 - 0.90775I$	$-9.03965 - 2.99724I$	$-4.94829 + 3.11480I$
$u = 0.484811 + 1.215220I$ $a = -0.098795 - 0.799736I$ $b = -0.458370 - 0.566062I$	$-8.64541 + 6.07028I$	$-4.34155 - 3.40396I$
$u = 0.484811 + 1.215220I$ $a = 2.83314 + 0.69066I$ $b = 3.72402 + 0.94519I$	$-8.64541 + 6.07028I$	$-4.34155 - 3.40396I$
$u = 0.484811 - 1.215220I$ $a = -0.098795 + 0.799736I$ $b = -0.458370 + 0.566062I$	$-8.64541 - 6.07028I$	$-4.34155 + 3.40396I$
$u = 0.484811 - 1.215220I$ $a = 2.83314 - 0.69066I$ $b = 3.72402 - 0.94519I$	$-8.64541 - 6.07028I$	$-4.34155 + 3.40396I$
$u = -0.420533 + 1.243280I$ $a = -0.106443 - 0.515997I$ $b = -0.26568 - 1.43136I$	$-10.69750 + 2.28828I$	$-7.38974 - 1.78470I$
$u = -0.420533 + 1.243280I$ $a = -2.05833 - 0.35082I$ $b = -3.04741 + 0.37403I$	$-10.69750 + 2.28828I$	$-7.38974 - 1.78470I$
$u = -0.420533 - 1.243280I$ $a = -0.106443 + 0.515997I$ $b = -0.26568 + 1.43136I$	$-10.69750 - 2.28828I$	$-7.38974 + 1.78470I$
$u = -0.420533 - 1.243280I$ $a = -2.05833 + 0.35082I$ $b = -3.04741 - 0.37403I$	$-10.69750 - 2.28828I$	$-7.38974 + 1.78470I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.496075+1.226990I$ $a=-0.788632-0.515998I$ $b=-1.20409-1.35223I$	$-10.1523-11.5895I$	$-6.39391+7.89908I$
$u=-0.496075+1.226990I$ $a=\ \ 2.65406-0.36532I$ $b=\ \ 3.86845-0.40313I$	$-10.1523-11.5895I$	$-6.39391+7.89908I$
$u=-0.496075-1.226990I$ $a=-0.788632+0.515998I$ $b=-1.20409+1.35223I$	$-10.1523+11.5895I$	$-6.39391-7.89908I$
$u=-0.496075-1.226990I$ $a=\ \ 2.65406+0.36532I$ $b=\ \ 3.86845+0.40313I$	$-10.1523+11.5895I$	$-6.39391-7.89908I$
$u=-0.462371+1.241170I$ $a=\ \ 1.76758-0.00509I$ $b=\ \ 2.68786-0.84395I$	$-14.5974-4.6970I$	$-10.66421+3.29760I$
$u=-0.462371+1.241170I$ $a=-2.42951+0.13001I$ $b=-3.65543+0.03686I$	$-14.5974-4.6970I$	$-10.66421+3.29760I$
$u=-0.462371-1.241170I$ $a=\ \ 1.76758+0.00509I$ $b=\ \ 2.68786+0.84395I$	$-14.5974+4.6970I$	$-10.66421-3.29760I$
$u=-0.462371-1.241170I$ $a=-2.42951-0.13001I$ $b=-3.65543-0.03686I$	$-14.5974+4.6970I$	$-10.66421-3.29760I$
$u=\ \ 0.441992$ $a=\ \ 0.45986+1.89002I$ $b=\ \ 1.021210-0.572546I$	-4.34249	-5.30020
$u=\ \ 0.441992$ $a=\ \ 0.45986-1.89002I$ $b=\ \ 1.021210+0.572546I$	-4.34249	-5.30020

III.

$\boldsymbol{I^u_3 = \langle 2u^4 - 2u^3 + 2u^2 + 2b - u,\ -2u^2 + 2a + u - 2,\ u^5 - u^4 + 2u^3 - u^2 + u - 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{17}{4}u^4 - \frac{17}{4}u^3 + \frac{33}{4}u^2 - 4u + \frac{9}{4}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^5 - 3u^4 + 4u^3 - u^2 - u + 1$
c_2	$u^5 - u^4 + 2u^3 - u^2 + u - 1$
c_3	$u^5 + u^4 - 2u^3 - u^2 + u - 1$
c_4	u^5
c_5	$u^5 - u^4 - 2u^3 + u^2 + u + 1$
c_6	$u^5 + u^4 + 2u^3 + u^2 + u + 1$
c_7, c_9	$(u+1)^5$
c_8	$32(32u^5 - 16u^4 - 16u^3 + 4u^2 + 2u + 1)$
c_{10}, c_{12}	$(u-1)^5$
c_{11}	$32(32u^5 + 16u^4 - 16u^3 - 4u^2 + 2u - 1)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1$
c_2, c_6	$y^5 + 3y^4 + 4y^3 + y^2 - y - 1$
c_3, c_5	$y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1$
c_4	y^5
c_7, c_9, c_{10} c_{12}	$(y-1)^5$
c_8, c_{11}	$1024(1024y^5 - 1280y^4 + 512y^3 - 48y^2 - 4y - 1)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.339110 + 0.822375I$ $a = 0.608249 - 0.968939I$ $b = 1.036800 + 0.070336I$	$1.31583 - 1.53058I$	$-3.76579 - 4.07189I$
$u = -0.339110 - 0.822375I$ $a = 0.608249 + 0.968939I$ $b = 1.036800 - 0.070336I$	$1.31583 + 1.53058I$	$-3.76579 + 4.07189I$
$u = 0.766826$ $a = 1.20461$ $b = -0.0994683$	-0.756147	3.58700
$u = 0.455697 + 1.200150I$ $a = -0.460554 + 0.493736I$ $b = -0.73706 + 1.22197I$	$-4.22763 + 4.40083I$	$-0.40273 - 3.06842I$
$u = 0.455697 - 1.200150I$ $a = -0.460554 - 0.493736I$ $b = -0.73706 - 1.22197I$	$-4.22763 - 4.40083I$	$-0.40273 + 3.06842I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u - 4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_5, c_6	$(y^2 + y + 1)^2$
c_4	$(y^2 - y + 1)^2$
c_7, c_9, c_{10} c_{12}	$(y + 1)^4$
c_8, c_{11}	$y^4 - 4y^2 + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = 1.00000 + 1.00000I$ $b = 0.13397 + 1.50000I$	$-3.28987 - 2.02988I$	$-6.00000 + 3.46410I$
$u = -0.500000 + 0.866025I$ $a = 1.00000 - 1.00000I$ $b = 1.86603 - 1.50000I$	$-3.28987 - 2.02988I$	$-6.00000 + 3.46410I$
$u = -0.500000 - 0.866025I$ $a = 1.00000 + 1.00000I$ $b = 1.86603 + 1.50000I$	$-3.28987 + 2.02988I$	$-6.00000 - 3.46410I$
$u = -0.500000 - 0.866025I$ $a = 1.00000 - 1.00000I$ $b = 0.13397 - 1.50000I$	$-3.28987 + 2.02988I$	$-6.00000 - 3.46410I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2-u+1)^2)(u^5-3u^4+\cdots-u+1)(u^{30}+17u^{29}+\cdots-u+1)^2$ $\cdot(u^{40}+22u^{39}+\cdots-u+16)$
c_2	$((u^2+u+1)^2)(u^5-u^4+\cdots+u-1)(u^{30}-u^{29}+\cdots-u-1)^2$ $\cdot(u^{40}-2u^{39}+\cdots+15u-4)$
c_3	$((u^2-u+1)^2)(u^5+u^4+\cdots+u-1)(u^{30}+u^{29}+\cdots+7u-1)^2$ $\cdot(u^{40}+2u^{39}+\cdots+871u-676)$
c_4	$u^5(u^4-u^2+1)(u^{30}+u^{29}+\cdots+u-1)^2$ $\cdot(u^{40}-3u^{39}+\cdots+512u+2048)$
c_5	$((u^2+u+1)^2)(u^5-u^4+\cdots+u+1)(u^{30}+u^{29}+\cdots+7u-1)^2$ $\cdot(u^{40}+2u^{39}+\cdots+871u-676)$
c_6	$((u^2-u+1)^2)(u^5+u^4+\cdots+u+1)(u^{30}-u^{29}+\cdots-u-1)^2$ $\cdot(u^{40}-2u^{39}+\cdots+15u-4)$
c_7, c_9	$((u+1)^5)(u^2+1)^2(u^{40}-5u^{39}+\cdots-3u-1)$ $\cdot(u^{60}+11u^{59}+\cdots+20u+1)$
c_8	$1024(u^4-2u^3+\cdots-4u+4)(32u^5-16u^4+\cdots+2u+1)$ $\cdot(32u^{40}+48u^{39}+\cdots+8u+4)$ $\cdot(u^{60}+5u^{59}+\cdots-23472726u+8156149)$
c_{10}, c_{12}	$((u-1)^5)(u^2+1)^2(u^{40}-5u^{39}+\cdots-3u-1)$ $\cdot(u^{60}+11u^{59}+\cdots+20u+1)$
c_{11}	$1024(u^4+2u^3+\cdots+4u+4)(32u^5+16u^4+\cdots+2u-1)$ $\cdot(32u^{40}+48u^{39}+\cdots+8u+4)$ $\cdot(u^{60}+5u^{59}+\cdots-23472726u+8156149)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^2+y+1)^2(y^5-y^4+8y^3-3y^2+3y-1)$ $\cdot((y^{30}-7y^{29}+\cdots-25y+1)^2)(y^{40}-6y^{39}+\cdots-3905y+256)$
c_2, c_6	$((y^2+y+1)^2)(y^5+3y^4+\cdots-y-1)(y^{30}+17y^{29}+\cdots-y+1)^2$ $\cdot(y^{40}+22y^{39}+\cdots-y+16)$
c_3, c_5	$(y^2+y+1)^2(y^5-5y^4+8y^3-3y^2-y-1)$ $\cdot(y^{30}-31y^{29}+\cdots-49y+1)^2$ $\cdot(y^{40}-34y^{39}+\cdots+2269839y+456976)$
c_4	$y^5(y^2-y+1)^2(y^{30}-11y^{29}+\cdots-y+1)^2$ $\cdot(y^{40}-13y^{39}+\cdots-63176704y+4194304)$
c_7, c_9, c_{10} c_{12}	$((y-1)^5)(y+1)^4(y^{40}+27y^{39}+\cdots+25y+1)$ $\cdot(y^{60}+43y^{59}+\cdots+64y+1)$
c_8, c_{11}	$1048576(y^4-4y^2+16)(1024y^5-1280y^4+\cdots-4y-1)$ $\cdot(1024y^{40}-27904y^{39}+\cdots+16y+16)$ $\cdot(y^{60}-37y^{59}+\cdots-1403816325059308y+66522766510201)$