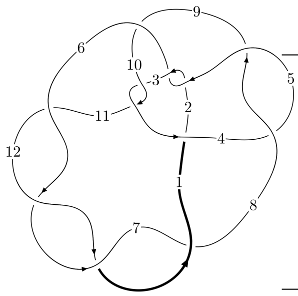
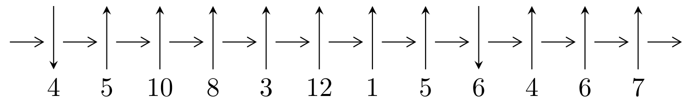
$12n_{0820}$ ($K12n_{0820}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 20309u^{19} + 9314u^{18} + \cdots + 12371b - 15594,\ 980u^{19} + 5579u^{18} + \cdots + 12371a - 1467,$$
$$u^{20} + u^{19} + \cdots - 2u - 1\rangle$$
$$I_2^u = \langle 7.00656 \times 10^{35}u^{35} + 1.59035 \times 10^{36}u^{34} + \cdots + 1.29954 \times 10^{37}b - 3.85421 \times 10^{38},$$
$$1.69263 \times 10^{47}u^{35} - 2.24834 \times 10^{47}u^{34} + \cdots + 5.15433 \times 10^{47}a + 1.11901 \times 10^{49},\ u^{36} - u^{35} + \cdots - 50u + 1$$
$$I_3^u = \langle u^{10} + u^9 - 4u^8 - 4u^7 + 4u^6 + 5u^5 - 2u^4 - 3u^3 + 2u^2 + b + u + 1,$$
$$u^{10} - 6u^8 + 13u^6 + u^5 - 15u^4 - 2u^3 + 12u^2 + a - 4,$$
$$u^{11} + u^{10} - 5u^9 - 5u^8 + 8u^7 + 9u^6 - 6u^5 - 8u^4 + 4u^3 + 4u^2 - u - 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 67 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. $\boldsymbol{I^u_1 = \langle 20309u^{19} + 9314u^{18} + \cdots + 12371b - 15594,\ 980u^{19} + 5579u^{18} + \cdots + 12371a - 1467,\ u^{20} + u^{19} + \cdots - 2u - 1\rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix}0\\u\end{pmatrix}$$

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

$$a_6 = \begin{pmatrix}-0.0792175u^{19} - 0.450974u^{18} + \cdots - 1.69647u + 0.118584\\-1.64166u^{19} - 0.752890u^{18} + \cdots + 0.958613u + 1.26053\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}u\\-u^3 + u\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}0.881416u^{19} + 0.960634u^{18} + \cdots + 2.54110u - 0.0663649\\1.12651u^{19} + 0.184464u^{18} + \cdots - 2.07146u - 2.24549\end{pmatrix}$$

$$a_5 = \begin{pmatrix}1.56244u^{19} + 0.301916u^{18} + \cdots - 2.65508u - 1.14194\\-1.64166u^{19} - 0.752890u^{18} + \cdots + 0.958613u + 1.26053\end{pmatrix}$$

$$a_2 = \begin{pmatrix}-2.04009u^{19} - 0.999677u^{18} + \cdots - 1.51984u + 2.04777\\1.96088u^{19} + 0.548703u^{18} + \cdots - 0.176623u - 1.92919\end{pmatrix}$$

$$a_1 = \begin{pmatrix}-0.603832u^{19} - 0.366098u^{18} + \cdots - 1.65573u + 1.15900\\0.942042u^{19} + 0.234338u^{18} + \cdots - 0.00751758u - 1.12651\end{pmatrix}$$

$$a_9 = \begin{pmatrix}0.881416u^{19} + 0.960634u^{18} + \cdots + 1.54110u - 0.0663649\\-0.371757u^{19} - 0.166357u^{18} + \cdots - 0.0398513u - 0.0792175\end{pmatrix}$$

$$a_8 = \begin{pmatrix}2.14194u^{19} + 0.579500u^{18} + \cdots - 0.441840u - 1.62881\\-1.26053u^{19} + 0.381133u^{18} + \cdots + 1.98294u + 1.56244\end{pmatrix}$$

$$a_7 = \begin{pmatrix}-2.36408u^{19} - 0.158354u^{18} + \cdots + 1.84399u + 3.35316\\3.06855u^{19} + 0.418802u^{18} + \cdots - 3.07898u - 4.37200\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{108774}{12371}u^{19} + \frac{59182}{12371}u^{18} + \cdots + \frac{1686}{12371}u + \frac{115368}{12371}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{20} - u^{19} + \cdots + 3u - 1$
c_2, c_5	$u^{20} + 12u^{19} + \cdots - 288u - 64$
c_3, c_4, c_8 c_{10}	$u^{20} - u^{19} + \cdots + 2u - 1$
c_6, c_7, c_{11} c_{12}	$u^{20} - 7u^{19} + \cdots - 16u + 8$
c_9	$u^{20} - 7u^{18} + \cdots - 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{20} - 9y^{19} + \cdots - 23y + 1$
c_2, c_5	$y^{20} - 12y^{19} + \cdots - 41984y + 4096$
c_3, c_4, c_8 c_{10}	$y^{20} - 7y^{19} + \cdots - 12y + 1$
c_6, c_7, c_{11} c_{12}	$y^{20} - 23y^{19} + \cdots - 480y + 64$
c_9	$y^{20} - 14y^{19} + \cdots - 47y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.531641 + 0.775820I$ $a = 0.521652 - 0.793900I$ $b = 0.421927 - 0.879767I$	$-2.87838 + 0.48775I$	$4.90275 - 0.25050I$
$u = 0.531641 - 0.775820I$ $a = 0.521652 + 0.793900I$ $b = 0.421927 + 0.879767I$	$-2.87838 - 0.48775I$	$4.90275 + 0.25050I$
$u = -0.780003 + 0.720862I$ $a = 0.368240 + 0.692494I$ $b = 0.401381 + 1.125740I$	$-1.50723 - 4.46688I$	$9.00256 + 6.89614I$
$u = -0.780003 - 0.720862I$ $a = 0.368240 - 0.692494I$ $b = 0.401381 - 1.125740I$	$-1.50723 + 4.46688I$	$9.00256 - 6.89614I$
$u = -0.918199$ $a = -1.32642$ $b = 1.75391$	16.1040	18.7100
$u = -0.173666 + 0.881491I$ $a = 0.646323 + 1.135580I$ $b = 0.621428 + 0.665143I$	$2.15657 + 2.07163I$	$8.70820 - 2.09392I$
$u = -0.173666 - 0.881491I$ $a = 0.646323 - 1.135580I$ $b = 0.621428 - 0.665143I$	$2.15657 - 2.07163I$	$8.70820 + 2.09392I$
$u = 0.773890 + 0.398773I$ $a = -1.14329 + 1.51420I$ $b = 1.317590 + 0.420622I$	$4.34968 + 1.79622I$	$15.4727 - 7.2361I$
$u = 0.773890 - 0.398773I$ $a = -1.14329 - 1.51420I$ $b = 1.317590 - 0.420622I$	$4.34968 - 1.79622I$	$15.4727 + 7.2361I$
$u = -0.964251 + 0.670604I$ $a = -0.50985 - 1.33705I$ $b = 1.248990 - 0.652969I$	$-0.28761 - 6.25899I$	$10.23267 + 5.61351I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.964251 - 0.670604I$ $a = -0.50985 + 1.33705I$ $b = 1.248990 + 0.652969I$	$-0.28761 + 6.25899I$	$10.23267 - 5.61351I$
$u = 0.971344 + 0.669842I$ $a = 0.253502 - 0.657470I$ $b = 0.489453 - 1.324130I$	$6.46708 + 7.19476I$	$12.8367 - 6.4139I$
$u = 0.971344 - 0.669842I$ $a = 0.253502 + 0.657470I$ $b = 0.489453 + 1.324130I$	$6.46708 - 7.19476I$	$12.8367 + 6.4139I$
$u = -0.783799$ $a = 0.321973$ $b = -2.10585$	15.5209	28.3760
$u = 0.696724$ $a = 0.426342$ $b = -1.34554$	5.26045	19.7990
$u = 1.163650 + 0.737004I$ $a = -0.392518 + 1.185430I$ $b = 1.25173 + 0.76023I$	$1.08242 + 11.20720I$	$12.2004 - 8.8347I$
$u = 1.163650 - 0.737004I$ $a = -0.392518 - 1.185430I$ $b = 1.25173 - 0.76023I$	$1.08242 - 11.20720I$	$12.2004 + 8.8347I$
$u = -1.32603 + 0.74385I$ $a = -0.336093 - 1.104220I$ $b = 1.25227 - 0.82883I$	$8.8703 - 14.6138I$	$14.9115 + 7.7101I$
$u = -1.32603 - 0.74385I$ $a = -0.336093 + 1.104220I$ $b = 1.25227 + 0.82883I$	$8.8703 + 14.6138I$	$14.9115 - 7.7101I$
$u = -0.387870$ $a = 0.762165$ $b = -0.312052$	0.631092	15.5800

II. $\boldsymbol{I_2^u =}$
$\boldsymbol{\langle 7.01\times10^{35}u^{35}+1.59\times10^{36}u^{34}+\cdots+1.30\times10^{37}b-3.85\times10^{38},\ 1.69\times10^{47}u^{35}-2.25\times10^{47}u^{34}+\cdots+5.15\times10^{47}a+1.12\times10^{49},\ u^{36}-u^{35}+\cdots-50u+173\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-0.328391u^{35}+0.436204u^{34}+\cdots+113.808u-21.7102\\-0.0539155u^{35}-0.122378u^{34}+\cdots+22.7256u+29.6582\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}u\\-u^3+u\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-0.00968600u^{35}+0.0510508u^{34}+\cdots+1.34871u-1.93665\\0.00857854u^{35}-0.0342699u^{34}+\cdots-13.5525u+19.8135\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-0.274475u^{35}+0.558582u^{34}+\cdots+91.0822u-51.3684\\-0.0539155u^{35}-0.122378u^{34}+\cdots+22.7256u+29.6582\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-0.0588044u^{35}+0.0152006u^{34}+\cdots+28.6506u+1.10313\\0.136673u^{35}-0.144683u^{34}+\cdots-51.6170u+2.13006\end{pmatrix}$$
$$a_1 = \begin{pmatrix}0.0979711u^{35}-0.205251u^{34}+\cdots-14.9735u+10.7766\\0.0485802u^{35}-0.0205206u^{34}+\cdots-21.3111u-8.88587\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-0.108106u^{35}+0.223334u^{34}+\cdots+30.9390u-35.3423\\-0.0516142u^{35}+0.107338u^{34}+\cdots+7.12661u-13.4712\end{pmatrix}$$
$$a_8 = \begin{pmatrix}0.189528u^{35}-0.272285u^{34}+\cdots-33.3725u+19.4151\\-0.163428u^{35}+0.181105u^{34}+\cdots+19.8997u+14.8460\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0.420493u^{35}-0.834327u^{34}+\cdots-109.957u+116.513\\-0.177158u^{35}+0.159116u^{34}+\cdots+31.9669u+13.1878\end{pmatrix}$$

(ii) Obstruction class $=-1$

(iii) Cusp Shapes $=-0.185352u^{35}+0.112252u^{34}+\cdots+117.655u+30.4332$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{36} - 7u^{35} + \cdots + 556u + 23$
c_2, c_5	$(u^3 - u^2 + 1)^{12}$
c_3, c_4, c_8 c_{10}	$u^{36} + u^{35} + \cdots + 50u + 173$
c_6, c_7, c_{11} c_{12}	$(u^6 + u^5 - 3u^4 - 2u^3 + 2u^2 - u - 1)^6$
c_9	$u^{36} + 3u^{35} + \cdots - 268u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{36}+15y^{35}+\cdots-395064y+529$
c_2, c_5	$(y^3-y^2+2y-1)^{12}$
c_3, c_4, c_8 c_{10}	$y^{36}-21y^{35}+\cdots-421852y+29929$
c_6, c_7, c_{11} c_{12}	$(y^6-7y^5+17y^4-16y^3+6y^2-5y+1)^6$
c_9	$y^{36}+7y^{35}+\cdots-70616y+1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.680331 + 0.769624I$ $a = 0.857359 - 0.939810I$ $b = -0.877439 - 0.744862I$	$5.60625 - 1.76400I$	$13.07138 + 0.22537I$
$u = 0.680331 - 0.769624I$ $a = 0.857359 + 0.939810I$ $b = -0.877439 + 0.744862I$	$5.60625 + 1.76400I$	$13.07138 - 0.22537I$
$u = -0.715828 + 0.752424I$ $a = -0.440309 - 0.292593I$ $b = -0.877439 - 0.744862I$	$-1.049570 + 0.855710I$	$9.06597 + 0.70533I$
$u = -0.715828 - 0.752424I$ $a = -0.440309 + 0.292593I$ $b = -0.877439 + 0.744862I$	$-1.049570 - 0.855710I$	$9.06597 - 0.70533I$
$u = -0.808909 + 0.653470I$ $a = -0.279403 + 0.967994I$ $b = -0.877439 + 0.744862I$	$2.64952 - 2.82812I$	$17.9070 + 2.9794I$
$u = -0.808909 - 0.653470I$ $a = -0.279403 - 0.967994I$ $b = -0.877439 - 0.744862I$	$2.64952 + 2.82812I$	$17.9070 - 2.9794I$
$u = -0.902191 + 0.566521I$ $a = 0.392677 - 1.208180I$ $b = 0.754878$	$3.08801 - 1.97241I$	$15.5952 + 3.6848I$
$u = -0.902191 - 0.566521I$ $a = 0.392677 + 1.208180I$ $b = 0.754878$	$3.08801 + 1.97241I$	$15.5952 - 3.6848I$
$u = -0.907127 + 0.187470I$ $a = -1.51181 + 1.66928I$ $b = 0.754878$	$9.74383 - 4.59213I$	$19.6006 + 3.2048I$
$u = -0.907127 - 0.187470I$ $a = -1.51181 - 1.66928I$ $b = 0.754878$	$9.74383 + 4.59213I$	$19.6006 - 3.2048I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.858363 + 0.219197I$ $a = 0.55462 - 1.68259I$ $b = -0.877439 - 0.744862I$	$9.57076 + 2.82812I$	$16.7597 - 2.9794I$
$u = -0.858363 - 0.219197I$ $a = 0.55462 + 1.68259I$ $b = -0.877439 + 0.744862I$	$9.57076 - 2.82812I$	$16.7597 + 2.9794I$
$u = -0.927627 + 0.668396I$ $a = 0.670182 + 0.979419I$ $b = -0.877439 + 0.744862I$	$-1.049570 - 0.855710I$	$9.06597 - 0.70533I$
$u = -0.927627 - 0.668396I$ $a = 0.670182 - 0.979419I$ $b = -0.877439 - 0.744862I$	$-1.049570 + 0.855710I$	$9.06597 + 0.70533I$
$u = 0.462176 + 1.059270I$ $a = -0.529619 + 0.427825I$ $b = -0.877439 + 0.744862I$	$-1.04957 - 4.80053I$	$9.06597 + 6.66423I$
$u = 0.462176 - 1.059270I$ $a = -0.529619 - 0.427825I$ $b = -0.877439 - 0.744862I$	$-1.04957 + 4.80053I$	$9.06597 - 6.66423I$
$u = 0.823077 + 0.136915I$ $a = -0.46568 + 1.96947I$ $b = 0.754878$	$3.08801 - 1.97241I$	$15.5952 + 3.6848I$
$u = 0.823077 - 0.136915I$ $a = -0.46568 - 1.96947I$ $b = 0.754878$	$3.08801 + 1.97241I$	$15.5952 - 3.6848I$
$u = 1.076000 + 0.509784I$ $a = -0.262546 + 0.330297I$ $b = -0.877439 + 0.744862I$	$5.60625 + 1.76400I$	$13.07138 - 0.22537I$
$u = 1.076000 - 0.509784I$ $a = -0.262546 - 0.330297I$ $b = -0.877439 - 0.744862I$	$5.60625 - 1.76400I$	$13.07138 + 0.22537I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.720048 + 0.113424I$ $a = 0.10618 - 1.68037I$ $b = -0.877439 - 0.744862I$	$2.64952 + 2.82812I$	$17.9070 - 2.9794I$
$u = 0.720048 - 0.113424I$ $a = 0.10618 + 1.68037I$ $b = -0.877439 + 0.744862I$	$2.64952 - 2.82812I$	$17.9070 + 2.9794I$
$u = 1.121560 + 0.612290I$ $a = 0.602203 - 1.093900I$ $b = -0.877439 - 0.744862I$	$-1.04957 + 4.80053I$	$9.06597 - 6.66423I$
$u = 1.121560 - 0.612290I$ $a = 0.602203 + 1.093900I$ $b = -0.877439 + 0.744862I$	$-1.04957 - 4.80053I$	$9.06597 + 6.66423I$
$u = -0.285783 + 1.362540I$ $a = -0.502070 - 0.521497I$ $b = -0.877439 - 0.744862I$	$5.60625 + 7.42025I$	$13.0714 - 6.1843I$
$u = -0.285783 - 1.362540I$ $a = -0.502070 + 0.521497I$ $b = -0.877439 + 0.744862I$	$5.60625 - 7.42025I$	$13.0714 + 6.1843I$
$u = 1.046170 + 0.922218I$ $a = -0.293378 - 0.768800I$ $b = -0.877439 - 0.744862I$	$9.57076 + 2.82812I$	$16.7597 - 2.9794I$
$u = 1.046170 - 0.922218I$ $a = -0.293378 + 0.768800I$ $b = -0.877439 + 0.744862I$	$9.57076 - 2.82812I$	$16.7597 + 2.9794I$
$u = -1.294700 + 0.553654I$ $a = 0.602238 + 1.181210I$ $b = -0.877439 + 0.744862I$	$5.60625 - 7.42025I$	$13.0714 + 6.1843I$
$u = -1.294700 - 0.553654I$ $a = 0.602238 - 1.181210I$ $b = -0.877439 - 0.744862I$	$5.60625 + 7.42025I$	$13.0714 - 6.1843I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.14008 + 0.91480I$ $a = 0.443053 + 0.670343I$ $b = 0.754878$	$9.74383 + 4.59213I$	$19.6006 - 3.2048I$
$u = 1.14008 - 0.91480I$ $a = 0.443053 - 0.670343I$ $b = 0.754878$	$9.74383 - 4.59213I$	$19.6006 + 3.2048I$
$u = 1.46635$ $a = -0.943085$ $b = 0.754878$	6.78711	24.4360
$u = -1.52578$ $a = -1.32799$ $b = 0.754878$	13.7083	23.2890
$u = -1.70178$ $a = -0.248232$ $b = 0.754878$	6.78711	24.4360
$u = 2.02337$ $a = 0.00186002$ $b = 0.754878$	13.7083	0

III.

$\boldsymbol{I_3^u = \langle u^{10} + u^9 + \cdots + b + 1,\ u^{10} - 6u^8 + \cdots + a - 4,\ u^{11} + u^{10} + \cdots - u - 1\rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} -u^{10} + 6u^8 - 13u^6 - u^5 + 15u^4 + 2u^3 - 12u^2 + 4 \\ -u^{10} - u^9 + 4u^8 + 4u^7 - 4u^6 - 5u^5 + 2u^4 + 3u^3 - 2u^2 - u - 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 3u^{10} + 2u^9 + \cdots + 4u - 3 \\ -u^{10} - 2u^9 + 4u^8 + 10u^7 - 3u^6 - 16u^5 - 2u^4 + 10u^3 + u^2 - 5u - 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^9 + 2u^8 - 4u^7 - 9u^6 + 4u^5 + 13u^4 - u^3 - 10u^2 + u + 5 \\ -u^{10} - u^9 + 4u^8 + 4u^7 - 4u^6 - 5u^5 + 2u^4 + 3u^3 - 2u^2 - u - 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^{10} - 2u^9 + 3u^8 + 9u^7 + 2u^6 - 12u^5 - 10u^4 + 6u^3 + 7u^2 - 3u - 5 \\ 2u^{10} + 2u^9 - 9u^8 - 9u^7 + 11u^6 + 13u^5 - 5u^4 - 8u^3 + 5u^2 + 3u + 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^9 - u^8 + 5u^7 + 6u^6 - 7u^5 - 12u^4 + 3u^3 + 10u^2 - 2u - 5 \\ u^{10} + u^9 - 5u^8 - 5u^7 + 7u^6 + 8u^5 - 4u^4 - 5u^3 + 4u^2 + 2u + 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 3u^{10} + 2u^9 - 15u^8 - 9u^7 + 24u^6 + 14u^5 - 19u^4 - 9u^3 + 14u^2 + u - 3 \\ -u^{10} - u^9 + 5u^8 + 5u^7 - 8u^6 - 9u^5 + 6u^4 + 8u^3 - 4u^2 - 3u + 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 4u^{10} + 4u^9 + \cdots + 6u - 3 \\ -u^{10} - 2u^9 + 4u^8 + 9u^7 - 4u^6 - 13u^5 + u^4 + 10u^3 - u^2 - 5u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^{10} - 2u^9 + 3u^8 + 8u^7 - 9u^5 - 4u^4 + 5u^3 + 3u^2 - 4u - 2 \\ u^{10} + 3u^9 - 2u^8 - 13u^7 - 4u^6 + 17u^5 + 9u^4 - 10u^3 - 6u^2 + 5u + 3 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$= -2u^{10} - 5u^9 + 3u^8 + 19u^7 + 10u^6 - 20u^5 - 13u^4 + 11u^3 + 2u^2 - 11u + 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{11} + 3u^{10} + \cdots - 4u + 1$
c_2	$u^{11} + 3u^{10} - u^9 - 11u^8 - 9u^7 + 8u^6 + 15u^5 + 4u^4 - 6u^3 - 4u^2 + 1$
c_3, c_8	$u^{11} + u^{10} - 5u^9 - 5u^8 + 8u^7 + 9u^6 - 6u^5 - 8u^4 + 4u^3 + 4u^2 - u - 1$
c_4, c_{10}	$u^{11} - u^{10} - 5u^9 + 5u^8 + 8u^7 - 9u^6 - 6u^5 + 8u^4 + 4u^3 - 4u^2 - u + 1$
c_5	$u^{11} - 3u^{10} - u^9 + 11u^8 - 9u^7 - 8u^6 + 15u^5 - 4u^4 - 6u^3 + 4u^2 - 1$
c_6, c_7	$u^{11} - 8u^9 - u^8 + 23u^7 + 6u^6 - 28u^5 - 11u^4 + 12u^3 + 6u^2 - 1$
c_9	$u^{11} + u^9 - u^7 + 3u^6 + u^4 - u^3 - 4u^2 + 1$
c_{11}, c_{12}	$u^{11} - 8u^9 + u^8 + 23u^7 - 6u^6 - 28u^5 + 11u^4 + 12u^3 - 6u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{11}+3y^{10}+\cdots+44y-1$
c_2, c_5	$y^{11}-11y^{10}+\cdots+8y-1$
c_3, c_4, c_8 c_{10}	$y^{11}-11y^{10}+\cdots+9y-1$
c_6, c_7, c_{11} c_{12}	$y^{11}-16y^{10}+\cdots+12y-1$
c_9	$y^{11}+2y^{10}-y^9-2y^8-y^7-11y^6-4y^5+23y^4+3y^3-18y^2+8y-1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.817327 + 0.673187I$ $a = -0.829096 + 0.875371I$ $b = -0.429655 + 0.602178I$	$8.28513 - 5.07300I$	$13.3655 + 5.6095I$
$u = -0.817327 - 0.673187I$ $a = -0.829096 - 0.875371I$ $b = -0.429655 - 0.602178I$	$8.28513 + 5.07300I$	$13.3655 - 5.6095I$
$u = 0.671261 + 0.485459I$ $a = -0.54365 - 1.38387I$ $b = -0.754077 - 0.626003I$	$1.83297 + 3.34942I$	$8.74876 - 8.55759I$
$u = 0.671261 - 0.485459I$ $a = -0.54365 + 1.38387I$ $b = -0.754077 + 0.626003I$	$1.83297 - 3.34942I$	$8.74876 + 8.55759I$
$u = 1.27729$ $a = -0.387060$ $b = 1.58358$	17.5117	21.2400
$u = 0.707662$ $a = 0.996863$ $b = -2.00315$	15.1840	3.15360
$u = -0.570810 + 0.224833I$ $a = 0.94324 + 1.81194I$ $b = -1.226040 + 0.434225I$	$4.24437 - 0.92833I$	$15.1830 - 0.6257I$
$u = -0.570810 - 0.224833I$ $a = 0.94324 - 1.81194I$ $b = -1.226040 - 0.434225I$	$4.24437 + 0.92833I$	$15.1830 + 0.6257I$
$u = -1.38811$ $a = -0.481020$ $b = 1.07892$	8.15810	21.2750
$u = 1.57940$ $a = -0.599120$ $b = 0.669115$	6.35438	1.73460

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.74249$ $a = -0.670651$ $b = 0.491090$	12.8934	11.0020

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{11}+3u^{10}+\cdots-4u+1)(u^{20}-u^{19}+\cdots+3u-1)$ $\cdot(u^{36}-7u^{35}+\cdots+556u+23)$
c_2	$(u^3-u^2+1)^{12}$ $\cdot(u^{11}+3u^{10}-u^9-11u^8-9u^7+8u^6+15u^5+4u^4-6u^3-4u^2+1)$ $\cdot(u^{20}+12u^{19}+\cdots-288u-64)$
c_3, c_8	$(u^{11}+u^{10}-5u^9-5u^8+8u^7+9u^6-6u^5-8u^4+4u^3+4u^2-u-1)$ $\cdot(u^{20}-u^{19}+\cdots+2u-1)(u^{36}+u^{35}+\cdots+50u+173)$
c_4, c_{10}	$(u^{11}-u^{10}-5u^9+5u^8+8u^7-9u^6-6u^5+8u^4+4u^3-4u^2-u+1)$ $\cdot(u^{20}-u^{19}+\cdots+2u-1)(u^{36}+u^{35}+\cdots+50u+173)$
c_5	$(u^3-u^2+1)^{12}$ $\cdot(u^{11}-3u^{10}-u^9+11u^8-9u^7-8u^6+15u^5-4u^4-6u^3+4u^2-1)$ $\cdot(u^{20}+12u^{19}+\cdots-288u-64)$
c_6, c_7	$(u^6+u^5-3u^4-2u^3+2u^2-u-1)^6$ $\cdot(u^{11}-8u^9-u^8+23u^7+6u^6-28u^5-11u^4+12u^3+6u^2-1)$ $\cdot(u^{20}-7u^{19}+\cdots-16u+8)$
c_9	$(u^{11}+u^9+\cdots-4u^2+1)(u^{20}-7u^{18}+\cdots-3u+1)$ $\cdot(u^{36}+3u^{35}+\cdots-268u-1)$
c_{11}, c_{12}	$(u^6+u^5-3u^4-2u^3+2u^2-u-1)^6$ $\cdot(u^{11}-8u^9+u^8+23u^7-6u^6-28u^5+11u^4+12u^3-6u^2+1)$ $\cdot(u^{20}-7u^{19}+\cdots-16u+8)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{11}+3y^{10}+\cdots+44y-1)(y^{20}-9y^{19}+\cdots-23y+1)$ $\cdot(y^{36}+15y^{35}+\cdots-395064y+529)$
c_2, c_5	$((y^3-y^2+2y-1)^{12})(y^{11}-11y^{10}+\cdots+8y-1)$ $\cdot(y^{20}-12y^{19}+\cdots-41984y+4096)$
c_3, c_4, c_8 c_{10}	$(y^{11}-11y^{10}+\cdots+9y-1)(y^{20}-7y^{19}+\cdots-12y+1)$ $\cdot(y^{36}-21y^{35}+\cdots-421852y+29929)$
c_6, c_7, c_{11} c_{12}	$(y^6-7y^5+17y^4-16y^3+6y^2-5y+1)^6$ $\cdot(y^{11}-16y^{10}+\cdots+12y-1)(y^{20}-23y^{19}+\cdots-480y+64)$
c_9	$(y^{11}+2y^{10}-y^9-2y^8-y^7-11y^6-4y^5+23y^4+3y^3-18y^2+8y-1)$ $\cdot(y^{20}-14y^{19}+\cdots-47y+1)(y^{36}+7y^{35}+\cdots-70616y+1)$