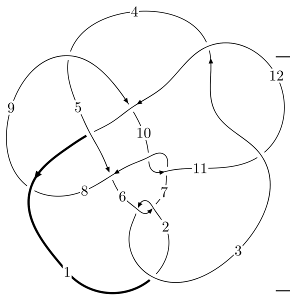
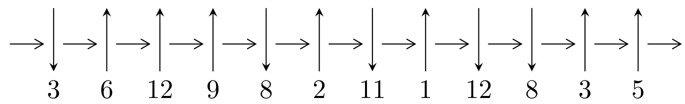
$12n_{0535}$ ($K12n_{0535}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -34964567u^{18} - 147929889u^{17} + \cdots + 84548050b - 17321241, \\
& -36305359u^{18} - 171870803u^{17} + \cdots + 84548050a - 72540507,\ u^{19} + 4u^{18} + \cdots - 3u^3 + 1\rangle \\
I_2^u = \langle & u^5 - u^4 + 2u^2 + b - a + 1, \\
& u^6a - 2u^5a - u^6 + u^4a + u^5 + 2u^3a - u^4 - 2u^2a - 2u^3 + a^2 + au + u^2 - a - 3u - 1, \\
& u^7 - 2u^6 + 2u^5 + u^4 - 2u^3 + 3u^2 - 2u + 1\rangle \\
I_3^u = \langle & u^3 + 2u^2 + b + 3u + 2,\ -u^3 - 3u^2 + a - 5u - 2,\ u^4 + 3u^3 + 5u^2 + 3u + 1\rangle \\
I_4^u = \langle & -u^5 + u^4 + b - a - 2u + 1,\ u^5a + a^2 + 2au + u^2,\ u^6 - u^5 + u^4 + 2u^2 - u + 1\rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 49 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.

$\boldsymbol{I_1^u = \langle -3.50\times 10^7u^{18} - 1.48\times 10^8u^{17} + \cdots + 8.45\times 10^7b - 1.73\times 10^7,\ -3.63\times 10^7u^{18} - 1.72\times 10^8u^{17} + \cdots + 8.45\times 10^7a - 7.25\times 10^7,\ u^{19} + 4u^{18} + \cdots - 3u^3 + 1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.429405u^{18} + 2.03282u^{17} + \cdots - 0.972166u + 0.857980 \\ 0.413547u^{18} + 1.74965u^{17} + \cdots + 0.520629u + 0.204869 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.658072u^{18} - 2.36766u^{17} + \cdots - 0.942839u + 0.860317 \\ -0.0707958u^{18} + 0.0522380u^{17} + \cdots + 0.273040u + 0.587276 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -0.587276u^{18} - 2.41990u^{17} + \cdots - 1.21588u + 0.273040 \\ -0.0707958u^{18} + 0.0522380u^{17} + \cdots + 0.273040u + 0.587276 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.0380189u^{18} + 0.291456u^{17} + \cdots - 1.06339u + 0.968309 \\ 0.355477u^{18} + 1.40522u^{17} + \cdots + 0.129243u + 0.0290509 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.500327u^{18} - 2.21013u^{17} + \cdots - 0.556008u + 0.0492471 \\ -0.402635u^{18} - 1.32006u^{17} + \cdots + 0.181729u + 0.279600 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.473557u^{18} - 1.49737u^{17} + \cdots - 2.34644u + 1.18683 \\ 0.396856u^{18} + 1.98083u^{17} + \cdots + 0.186827u + 0.473557 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.761277u^{18} + 3.01695u^{17} + \cdots - 0.400542u + 0.304195 \\ -0.280164u^{18} - 1.43418u^{17} + \cdots + 1.18128u - 0.688967 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.484468u^{18} - 1.92696u^{17} + \cdots - 2.04880u + 0.702358 \\ 0.0109112u^{18} + 0.429590u^{17} + \cdots - 0.297642u + 0.484468 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.0158583u^{18} + 0.283163u^{17} + \cdots - 1.49279u + 0.653111 \\ 0.413547u^{18} + 1.74965u^{17} + \cdots + 0.520629u + 0.204869 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{20137897}{8454805}u^{18} + \frac{69147964}{8454805}u^{17} + \cdots + \frac{1296527}{8454805}u + \frac{31835641}{8454805}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{19} + 14u^{18} + \cdots - 28u - 4$
c_2, c_4, c_6	$u^{19} + 7u^{17} + \cdots - 2u - 2$
c_3, c_{11}	$u^{19} + 2u^{18} + \cdots - 11u - 1$
c_5, c_7, c_{10}	$u^{19} - 2u^{18} + \cdots + 2u - 1$
c_8	$u^{19} - u^{18} + \cdots - 25u - 25$
c_9	$u^{19} - 3u^{18} + \cdots + 46u - 11$
c_{12}	$u^{19} - 4u^{18} + \cdots - 3u^3 - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{19} + 26y^{18} + \cdots - 16y - 16$
c_2, c_4, c_6	$y^{19} + 14y^{18} + \cdots - 28y - 4$
c_3, c_{11}	$y^{19} - 32y^{18} + \cdots + y - 1$
c_5, c_7, c_{10}	$y^{19} + 18y^{18} + \cdots + 44y - 1$
c_8	$y^{19} + 3y^{18} + \cdots - 1125y - 625$
c_9	$y^{19} - 23y^{18} + \cdots + 3194y - 121$
c_{12}	$y^{19} - 2y^{18} + \cdots + 12y^2 - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.821475 + 0.594834I$ $a = 1.075950 + 0.336378I$ $b = 1.334340 + 0.079123I$	$1.42522 + 6.81402I$	$5.23193 - 9.88797I$
$u = 0.821475 - 0.594834I$ $a = 1.075950 - 0.336378I$ $b = 1.334340 - 0.079123I$	$1.42522 - 6.81402I$	$5.23193 + 9.88797I$
$u = -1.173600 + 0.155605I$ $a = -0.125477 - 0.508306I$ $b = 0.471294 - 0.636829I$	$4.32774 + 1.07425I$	$4.82406 - 6.05931I$
$u = -1.173600 - 0.155605I$ $a = -0.125477 + 0.508306I$ $b = 0.471294 + 0.636829I$	$4.32774 - 1.07425I$	$4.82406 + 6.05931I$
$u = 0.279280 + 0.633920I$ $a = -0.361697 - 0.610800I$ $b = -0.662543 + 0.872189I$	$-1.90560 + 1.10773I$	$-3.54412 - 5.69242I$
$u = 0.279280 - 0.633920I$ $a = -0.361697 + 0.610800I$ $b = -0.662543 - 0.872189I$	$-1.90560 - 1.10773I$	$-3.54412 + 5.69242I$
$u = -0.612161$ $a = 0.732439$ $b = 0.209228$	0.849367	11.9240
$u = 0.494731 + 0.181504I$ $a = -0.30870 + 2.20346I$ $b = -0.343936 + 0.280922I$	$0.84702 - 3.36304I$	$2.65369 + 2.27076I$
$u = 0.494731 - 0.181504I$ $a = -0.30870 - 2.20346I$ $b = -0.343936 - 0.280922I$	$0.84702 + 3.36304I$	$2.65369 - 2.27076I$
$u = -1.04681 + 1.06903I$ $a = 1.189010 - 0.129598I$ $b = 2.18978 + 1.06580I$	$12.2196 - 13.0819I$	$3.46696 + 5.71029I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.04681 - 1.06903I$ $a = 1.189010 + 0.129598I$ $b = 2.18978 - 1.06580I$	$12.2196 + 13.0819I$	$3.46696 - 5.71029I$
$u = -0.135208 + 0.466592I$ $a = 2.29915 - 0.00071I$ $b = 0.675260 + 1.111080I$	$0.56206 - 3.63168I$	$1.44719 + 4.79816I$
$u = -0.135208 - 0.466592I$ $a = 2.29915 + 0.00071I$ $b = 0.675260 - 1.111080I$	$0.56206 + 3.63168I$	$1.44719 - 4.79816I$
$u = -1.09457 + 1.05677I$ $a = 0.132959 - 1.097140I$ $b = 1.282940 - 0.166221I$	$12.33420 + 5.22927I$	$3.55290 - 2.35688I$
$u = -1.09457 - 1.05677I$ $a = 0.132959 + 1.097140I$ $b = 1.282940 + 0.166221I$	$12.33420 - 5.22927I$	$3.55290 + 2.35688I$
$u = -1.00078 + 1.20924I$ $a = -0.714217 + 0.472369I$ $b = -2.07929 - 0.76223I$	$-8.03695 - 4.24763I$	$1.64467 - 2.22109I$
$u = -1.00078 - 1.20924I$ $a = -0.714217 - 0.472369I$ $b = -2.07929 + 0.76223I$	$-8.03695 + 4.24763I$	$1.64467 + 2.22109I$
$u = 1.16156 + 1.21360I$ $a = -0.553206 - 0.397416I$ $b = -1.47244 + 0.48967I$	$-6.57114 + 4.42656I$	$-2.73910 - 5.25491I$
$u = 1.16156 - 1.21360I$ $a = -0.553206 + 0.397416I$ $b = -1.47244 - 0.48967I$	$-6.57114 - 4.42656I$	$-2.73910 + 5.25491I$

II. $\boldsymbol{I^u_2 = \langle u^5 - u^4 + 2u^2 + b - a + 1,\ u^6a - u^6 + \cdots - a - 1,\ u^7 - 2u^6 + 2u^5 + u^4 - 2u^3 + 3u^2 - 2u + 1\rangle}$

(i) Arc colorings

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

$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} a \\ -u^5 + u^4 - 2u^2 + a - 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^5a - u^6 + u^4a + u^5 - u^4 - 2u^2a - u^3 + au - a - 3u + 1 \\ u^6a - u^6 + \cdots - a + 1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^6a + u^5a - 2u^3a - au - u \\ u^6a - u^6 + \cdots - a + 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^5 - u^4 - u^2a + 2u^2 + 1 \\ -u^6 + u^4a + u^5 + u^2a - 2u^3 + a - 2u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^6a - u^6 + \cdots - 2a + 2 \\ -u^6a + 2u^6 + \cdots + a - 3 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^6a + u^5a + u^6 - u^5 - 2u^3a + u^4 + 2u^3 - au - u^2 - a + 2u + 1 \\ u^6a - u^5a - 2u^5 + 2u^3a + u^4 + au - 5u^2 + a - u - 2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^5a + 2u^6 + u^4a - 2u^5 + u^4 - 2u^2a + 4u^3 - a + 3u - 1 \\ u^6a - 4u^6 + 6u^5 + 3u^3a - 4u^4 + 2u^2a - 7u^3 + au + 5u^2 + a - 9u + 2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 2u^6 - 2u^5 + u^4 + 4u^3 - u^2 + 4u \\ u^6a - u^5a - u^6 + 2u^3a - 2u^3 + au - u^2 + a - 3u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^5 - u^4 + 2u^2 + 1 \\ -u^5 + u^4 - 2u^2 + a - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -9u^6 + 12u^5 - 7u^4 - 19u^3 + 10u^2 - 16u + 7$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{14} - 12u^{13} + \cdots - 44u + 4$
c_2	$u^{14} + 6u^{12} + \cdots + 11u^2 + 2$
c_3	$u^{14} + 2u^{13} + \cdots - 2u + 1$
c_4, c_6	$u^{14} + 6u^{12} + \cdots + 11u^2 + 2$
c_5, c_7	$u^{14} - 3u^{13} + \cdots - 3u^2 + 1$
c_8	$u^{14} - 2u^{13} + \cdots + u + 1$
c_9	$u^{14} - 6u^{13} + \cdots - 80u + 25$
c_{10}	$u^{14} + 3u^{13} + \cdots - 3u^2 + 1$
c_{11}	$u^{14} - 2u^{13} + \cdots + 2u + 1$
c_{12}	$(u^7 - 2u^6 + 2u^5 + u^4 - 2u^3 + 3u^2 - 2u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{14} - 16y^{12} + \cdots - 136y + 16$
c_2, c_4, c_6	$y^{14} + 12y^{13} + \cdots + 44y + 4$
c_3, c_{11}	$y^{14} - 6y^{13} + \cdots + 24y + 1$
c_5, c_7, c_{10}	$y^{14} + 5y^{13} + \cdots - 6y + 1$
c_8	$y^{14} + 4y^{13} + \cdots - 19y + 1$
c_9	$y^{14} - 20y^{13} + \cdots + 150y + 625$
c_{12}	$(y^7 + 4y^5 - y^4 - 6y^3 - 3y^2 - 2y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.17019$ $a = -0.358738 + 0.564857I$ $b = -0.028132 + 0.564857I$	4.47571	7.29710
$u = -1.17019$ $a = -0.358738 - 0.564857I$ $b = -0.028132 - 0.564857I$	4.47571	7.29710
$u = -0.011299 + 0.825523I$ $a = 1.027240 + 0.770138I$ $b = 1.88010 + 0.45019I$	$-0.48483 - 2.53884I$	$-0.79327 + 1.93613I$
$u = -0.011299 + 0.825523I$ $a = -1.62561 + 0.25747I$ $b = -0.772756 - 0.062472I$	$-0.48483 - 2.53884I$	$-0.79327 + 1.93613I$
$u = -0.011299 - 0.825523I$ $a = 1.027240 - 0.770138I$ $b = 1.88010 - 0.45019I$	$-0.48483 + 2.53884I$	$-0.79327 - 1.93613I$
$u = -0.011299 - 0.825523I$ $a = -1.62561 - 0.25747I$ $b = -0.772756 + 0.062472I$	$-0.48483 + 2.53884I$	$-0.79327 - 1.93613I$
$u = 0.542568 + 0.510771I$ $a = -1.041010 - 0.581670I$ $b = -2.22904 - 1.51686I$	$1.30894 + 4.72329I$	$3.88706 - 9.04709I$
$u = 0.542568 + 0.510771I$ $a = 2.06212 + 0.40264I$ $b = 0.874091 - 0.532548I$	$1.30894 + 4.72329I$	$3.88706 - 9.04709I$
$u = 0.542568 - 0.510771I$ $a = -1.041010 + 0.581670I$ $b = -2.22904 + 1.51686I$	$1.30894 - 4.72329I$	$3.88706 + 9.04709I$
$u = 0.542568 - 0.510771I$ $a = 2.06212 - 0.40264I$ $b = 0.874091 + 0.532548I$	$1.30894 - 4.72329I$	$3.88706 + 9.04709I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 1.05382 + 1.07114I$ $a = -0.779358 - 0.521402I$ $b = -1.60948 + 0.43022I$	$-5.52936 + 3.91715I$	$4.75768 - 1.97459I$
$u = \quad 1.05382 + 1.07114I$ $a = -0.284648 - 0.316560I$ $b = -1.114770 + 0.635064I$	$-5.52936 + 3.91715I$	$4.75768 - 1.97459I$
$u = \quad 1.05382 - 1.07114I$ $a = -0.779358 + 0.521402I$ $b = -1.60948 - 0.43022I$	$-5.52936 - 3.91715I$	$4.75768 + 1.97459I$
$u = \quad 1.05382 - 1.07114I$ $a = -0.284648 + 0.316560I$ $b = -1.114770 - 0.635064I$	$-5.52936 - 3.91715I$	$4.75768 + 1.97459I$

III.

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -10u^3-24u^2-25u-5$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^4 - 3u^3 + 2u^2 + 1$
c_2, c_{11}	$u^4 + u^3 + 2u^2 + 2u + 1$
c_3, c_4, c_6	$u^4 - u^3 + 2u^2 - 2u + 1$
c_5, c_7	$u^4 - u^3 - u^2 + u + 1$
c_8	$(u^2 - u + 1)^2$
c_9	$u^4 - 6u^3 + 14u^2 - 15u + 7$
c_{10}	$u^4 + u^3 - u^2 - u + 1$
c_{12}	$u^4 + 3u^3 + 5u^2 + 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^4 - 5y^3 + 6y^2 + 4y + 1$
c_2, c_3, c_4 c_6, c_{11}	$y^4 + 3y^3 + 2y^2 + 1$
c_5, c_7, c_{10}	$y^4 - 3y^3 + 5y^2 - 3y + 1$
c_8	$(y^2 + y + 1)^2$
c_9	$y^4 - 8y^3 + 30y^2 - 29y + 49$
c_{12}	$y^4 + y^3 + 9y^2 + y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.378256 + 0.440597I$ $a = \quad 0.121744 + 1.306620I$ $b = -0.929304 - 0.758745I$	$-1.54288 - 0.56550I$	$4.01988 - 4.05120I$
$u = -0.378256 - 0.440597I$ $a = \quad 0.121744 - 1.306620I$ $b = -0.929304 + 0.758745I$	$-1.54288 + 0.56550I$	$4.01988 + 4.05120I$
$u = -1.12174 + 1.30662I$ $a = -0.621744 + 0.440597I$ $b = -2.07070 - 0.75874I$	$-8.32672 - 4.62527I$	$-9.5199 + 10.6712I$
$u = -1.12174 - 1.30662I$ $a = -0.621744 - 0.440597I$ $b = -2.07070 + 0.75874I$	$-8.32672 + 4.62527I$	$-9.5199 - 10.6712I$

IV.

$$\boldsymbol{I^u_4 = \langle -u^5+u^4+b-a-2u+1,\ u^5a+a^2+2au+u^2,\ u^6-u^5+u^4+2u^2-u+1\rangle}$$

(i) Arc colorings

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

$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} a \\ u^5 - u^4 + a + 2u - 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^5a - u^4a + u^3 + au - a \\ u^5a + u^3 + au + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^4a - a - u \\ u^5a + u^3 + au + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^5 + u^4 - u^2a - 2u + 1 \\ u^4a - u^4 + u^2a + a + u - 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^5a - u^4a + u^5 + u^3a - u^4 - u^2a - u^3 + 2au - a + 2u - 1 \\ u^4a + u^4 + u^2a + u^3 + 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^4a - 2u^5 + u^2 - u + 2 \\ -u^4a + 2u^5 - u^4 - 2u^3 - 3u^2 + u - 2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 3u^5a - 3u^4a + 3u^4 - 4u^2a + 2au + 2u^2 - 3a + u + 1 \\ -u^5a + 5u^4a - 4u^5 + 3u^3a - 2u^4 + 4u^2a - u^3 + u^2 + 2a - 3u + 2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^4 + 2u^3 + u^2 + 2 \\ -u^4a - u^5 - u^4 - 2u^3 - u^2 - 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^5 + u^4 - 2u + 1 \\ u^5 - u^4 + a + 2u - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

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

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{12} - 8u^{11} + \cdots - 9u + 1$
c_2, c_4, c_6	$u^{12} - 4u^{10} + 16u^8 + 7u^7 - 20u^6 - 13u^5 + 14u^4 + 26u^3 + 20u^2 + 7u + 1$
c_3, c_{11}	$u^{12} - 16u^{10} + \cdots + 10u + 1$
c_5, c_7, c_{10}	$u^{12} - u^{11} + \cdots + 606u + 317$
c_8	$u^{12} - 11u^{10} + \cdots + 271u + 121$
c_9	$u^{12} - 4u^{11} + \cdots - 14u + 11$
c_{12}	$(u^6 + u^5 + u^4 + 2u^2 + u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{12} + 32y^{11} + \cdots + 47y + 1$
c_2, c_4, c_6	$y^{12} - 8y^{11} + \cdots - 9y + 1$
c_3, c_{11}	$y^{12} - 32y^{11} + \cdots + 70y + 1$
c_5, c_7, c_{10}	$y^{12} + 27y^{11} + \cdots - 102224y + 100489$
c_8	$y^{12} - 22y^{11} + \cdots + 14163y + 14641$
c_9	$y^{12} - 10y^{11} + \cdots - 196y + 121$
c_{12}	$(y^6 + y^5 + 5y^4 + 4y^3 + 6y^2 + 3y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.716019 + 0.809696I$ $a = -0.440928 - 0.793162I$ $b = -0.869241 - 0.814613I$	$2.99789 - 2.65597I$	$5.23409 + 2.95001I$
$u = -0.716019 + 0.809696I$ $a = 1.193290 + 0.483169I$ $b = 0.764977 + 0.461718I$	$2.99789 - 2.65597I$	$5.23409 + 2.95001I$
$u = -0.716019 - 0.809696I$ $a = -0.440928 + 0.793162I$ $b = -0.869241 + 0.814613I$	$2.99789 + 2.65597I$	$5.23409 - 2.95001I$
$u = -0.716019 - 0.809696I$ $a = 1.193290 - 0.483169I$ $b = 0.764977 - 0.461718I$	$2.99789 + 2.65597I$	$5.23409 - 2.95001I$
$u = 0.283231 + 0.633899I$ $a = -0.673606 - 0.685761I$ $b = -0.942454 + 0.731417I$	$-1.90302 + 1.10871I$	$-3.38143 - 5.26909I$
$u = 0.283231 + 0.633899I$ $a = -0.032040 - 0.500452I$ $b = -0.300888 + 0.916727I$	$-1.90302 + 1.10871I$	$-3.38143 - 5.26909I$
$u = 0.283231 - 0.633899I$ $a = -0.673606 + 0.685761I$ $b = -0.942454 - 0.731417I$	$-1.90302 - 1.10871I$	$-3.38143 + 5.26909I$
$u = 0.283231 - 0.633899I$ $a = -0.032040 + 0.500452I$ $b = -0.300888 - 0.916727I$	$-1.90302 - 1.10871I$	$-3.38143 + 5.26909I$
$u = 0.932789 + 0.951611I$ $a = 1.217360 - 0.202209I$ $b = 2.41453 - 1.28852I$	$13.70950 + 3.42721I$	$4.64734 - 2.54199I$
$u = 0.932789 + 0.951611I$ $a = -0.26408 + 1.41445I$ $b = 0.933081 + 0.328142I$	$13.70950 + 3.42721I$	$4.64734 - 2.54199I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.932789 - 0.951611I$ $a = 1.217360 + 0.202209I$ $b = 2.41453 + 1.28852I$	$13.70950 - 3.42721I$	$4.64734 + 2.54199I$
$u = 0.932789 - 0.951611I$ $a = -0.26408 - 1.41445I$ $b = 0.933081 - 0.328142I$	$13.70950 - 3.42721I$	$4.64734 + 2.54199I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^4-3u^3+2u^2+1)(u^{12}-8u^{11}+\cdots-9u+1)$ $\cdot(u^{14}-12u^{13}+\cdots-44u+4)(u^{19}+14u^{18}+\cdots-28u-4)$
c_2	$(u^4+u^3+2u^2+2u+1)$ $\cdot(u^{12}-4u^{10}+16u^8+7u^7-20u^6-13u^5+14u^4+26u^3+20u^2+7u+1)$ $\cdot(u^{14}+6u^{12}+\cdots+11u^2+2)(u^{19}+7u^{17}+\cdots-2u-2)$
c_3	$(u^4-u^3+2u^2-2u+1)(u^{12}-16u^{10}+\cdots+10u+1)$ $\cdot(u^{14}+2u^{13}+\cdots-2u+1)(u^{19}+2u^{18}+\cdots-11u-1)$
c_4, c_6	$(u^4-u^3+2u^2-2u+1)$ $\cdot(u^{12}-4u^{10}+16u^8+7u^7-20u^6-13u^5+14u^4+26u^3+20u^2+7u+1)$ $\cdot(u^{14}+6u^{12}+\cdots+11u^2+2)(u^{19}+7u^{17}+\cdots-2u-2)$
c_5, c_7	$(u^4-u^3-u^2+u+1)(u^{12}-u^{11}+\cdots+606u+317)$ $\cdot(u^{14}-3u^{13}+\cdots-3u^2+1)(u^{19}-2u^{18}+\cdots+2u-1)$
c_8	$((u^2-u+1)^2)(u^{12}-11u^{10}+\cdots+271u+121)$ $\cdot(u^{14}-2u^{13}+\cdots+u+1)(u^{19}-u^{18}+\cdots-25u-25)$
c_9	$(u^4-6u^3+14u^2-15u+7)(u^{12}-4u^{11}+\cdots-14u+11)$ $\cdot(u^{14}-6u^{13}+\cdots-80u+25)(u^{19}-3u^{18}+\cdots+46u-11)$
c_{10}	$(u^4+u^3-u^2-u+1)(u^{12}-u^{11}+\cdots+606u+317)$ $\cdot(u^{14}+3u^{13}+\cdots-3u^2+1)(u^{19}-2u^{18}+\cdots+2u-1)$
c_{11}	$(u^4+u^3+2u^2+2u+1)(u^{12}-16u^{10}+\cdots+10u+1)$ $\cdot(u^{14}-2u^{13}+\cdots+2u+1)(u^{19}+2u^{18}+\cdots-11u-1)$
c_{12}	$(u^4+3u^3+5u^2+3u+1)(u^6+u^5+u^4+2u^2+u+1)^2$ $\cdot((u^7-2u^6+\cdots-2u+1)^2)(u^{19}-4u^{18}+\cdots-3u^3-1)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^4-5y^3+6y^2+4y+1)(y^{12}+32y^{11}+\cdots+47y+1)$ $\cdot(y^{14}-16y^{12}+\cdots-136y+16)(y^{19}+26y^{18}+\cdots-16y-16)$
c_2, c_4, c_6	$(y^4+3y^3+2y^2+1)(y^{12}-8y^{11}+\cdots-9y+1)$ $\cdot(y^{14}+12y^{13}+\cdots+44y+4)(y^{19}+14y^{18}+\cdots-28y-4)$
c_3, c_{11}	$(y^4+3y^3+2y^2+1)(y^{12}-32y^{11}+\cdots+70y+1)$ $\cdot(y^{14}-6y^{13}+\cdots+24y+1)(y^{19}-32y^{18}+\cdots+y-1)$
c_5, c_7, c_{10}	$(y^4-3y^3+5y^2-3y+1)(y^{12}+27y^{11}+\cdots-102224y+100489)$ $\cdot(y^{14}+5y^{13}+\cdots-6y+1)(y^{19}+18y^{18}+\cdots+44y-1)$
c_8	$((y^2+y+1)^2)(y^{12}-22y^{11}+\cdots+14163y+14641)$ $\cdot(y^{14}+4y^{13}+\cdots-19y+1)(y^{19}+3y^{18}+\cdots-1125y-625)$
c_9	$(y^4-8y^3+30y^2-29y+49)(y^{12}-10y^{11}+\cdots-196y+121)$ $\cdot(y^{14}-20y^{13}+\cdots+150y+625)(y^{19}-23y^{18}+\cdots+3194y-121)$
c_{12}	$(y^4+y^3+9y^2+y+1)(y^6+y^5+5y^4+4y^3+6y^2+3y+1)^2$ $\cdot((y^7+4y^5-y^4-6y^3-3y^2-2y-1)^2)(y^{19}-2y^{18}+\cdots+12y^2-1)$