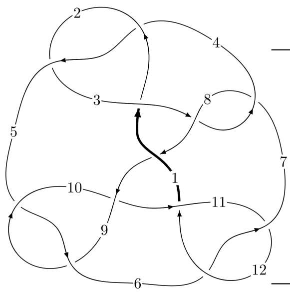
$12a_{0103}$ ($K12a_{0103}$)



A knot diagram[1]

Linearized knot diagam

$$\rightarrow \underset{3}{\downarrow} \rightarrow \underset{5}{\downarrow} \rightarrow \underset{8}{\downarrow} \rightarrow \underset{2}{\downarrow} \rightarrow \underset{10}{\uparrow} \rightarrow \underset{12}{\uparrow} \rightarrow \underset{4}{\downarrow} \rightarrow \underset{1}{\downarrow} \rightarrow \underset{6}{\uparrow} \rightarrow \underset{9}{\downarrow} \rightarrow \underset{7}{\uparrow} \rightarrow \underset{11}{\downarrow} \rightarrow$$

Solving Sequence

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

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

$$\begin{aligned}
I^u_1 &= \langle 485u^{52} + 571u^{51} + \cdots + 256b - 1197,\ 255u^{52} + 685u^{51} + \cdots + 512a - 1291,\\
&\quad u^{53} + 11u^{51} + \cdots + 2u - 1\rangle\\
I^u_2 &= \langle 1.48632 \times 10^{75}u^{77} + 6.02333 \times 10^{75}u^{76} + \cdots + 2.52373 \times 10^{76}b - 9.27713 \times 10^{75},\\
&\quad 3.70085 \times 10^{76}u^{77} + 3.43747 \times 10^{76}u^{76} + \cdots + 2.52373 \times 10^{76}a - 1.83649 \times 10^{77},\ u^{78} + 2u^{77} + \cdots + 6u + 9\\
I^u_3 &= \langle b + 1,\ -u^3 + u^2 + 2a + 1,\ u^4 + u^2 + u + 1\rangle\\
I^u_4 &= \langle 11588a^5u + 5390a^4u + \cdots + 14326a - 45947,\\
&\quad a^6 - 2a^5u - a^5 + 6a^4u - 6a^4 - 10a^3u + 12a^3 + 8a^2u - 17a^2 - au + 12a - u - 4,\ u^2 + 1\rangle\\
I^u_5 &= \langle b + 1,\ u^5 - u^4 + u^3 - u^2 + a + u,\ u^6 - u^5 + 2u^4 - 2u^3 + 2u^2 - 2u + 1\rangle
\end{aligned}$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 153 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. $I_1^u = \langle 485u^{52} + 571u^{51} + \cdots + 256b - 1197,\ 255u^{52} + 685u^{51} + \cdots + 512a - 1291,\ u^{53} + 11u^{51} + \cdots + 2u - 1\rangle$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} -0.498047u^{52} - 1.33789u^{51} + \cdots + 1.50586u + 2.52148 \\ -1.89453u^{52} - 2.23047u^{51} + \cdots - 8.43359u + 4.67578 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -2.39258u^{52} - 3.56836u^{51} + \cdots - 6.92773u + 7.19727 \\ -1.89453u^{52} - 2.23047u^{51} + \cdots - 8.43359u + 4.67578 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0156250u^{52} + 0.156250u^{50} + \cdots + 0.0312500u^2 - 1.01563u \\ 0.0156250u^{52} + 0.156250u^{50} + \cdots + 0.0312500u^2 - 1.01563u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -3.06836u^{52} + 3.49805u^{51} + \cdots + 32.8574u - 6.51758 \\ -0.144531u^{52} + 1.17578u^{51} + \cdots + 9.44141u - 3.23047 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} 0.296875u^{52} - 0.0625000u^{51} + \cdots - 1.45313u + 0.0625000 \\ 0.281250u^{52} - 0.0625000u^{51} + \cdots + 0.562500u + 0.0625000 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.0156250u^{52} + 0.156250u^{50} + \cdots + 0.0312500u^2 - 1.01563u \\ 0.0156250u^{52} + 0.156250u^{50} + \cdots + 0.0312500u^2 - 1.01563u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.0156250u^{51} - 0.156250u^{49} + \cdots - 0.0312500u + 1.01563 \\ -0.0156250u^{51} - 0.156250u^{49} + \cdots - 0.0312500u + 0.0156250 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{12761}{1024}u^{52} + \frac{637}{1024}u^{51} + \cdots + \frac{41973}{1024}u - \frac{10363}{1024}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{53} + 25u^{52} + \cdots + 225u + 16$
c_2, c_4	$u^{53} - 5u^{52} + \cdots - 31u + 4$
c_3, c_7	$u^{53} + 3u^{52} + \cdots + 240u + 64$
c_5, c_6, c_9 c_{11}	$u^{53} + 11u^{51} + \cdots + 2u + 1$
c_8	$u^{53} - 24u^{52} + \cdots + 284992u - 13252$
c_{10}, c_{12}	$u^{53} + 22u^{52} + \cdots + 2u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{53} + 11y^{52} + \cdots + 12609y - 256$
c_2, c_4	$y^{53} - 25y^{52} + \cdots + 225y - 16$
c_3, c_7	$y^{53} + 27y^{52} + \cdots - 52992y - 4096$
c_5, c_6, c_9 c_{11}	$y^{53} + 22y^{52} + \cdots + 2y - 1$
c_8	$y^{53} + 14y^{52} + \cdots + 16670504648y - 175615504$
c_{10}, c_{12}	$y^{53} + 34y^{52} + \cdots + 430y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.844605 + 0.537356I$ $a = -0.394940 + 1.319150I$ $b = 0.482681 - 0.906143I$	$7.13953 - 1.46853I$	$3.05642 - 1.15684I$
$u = 0.844605 - 0.537356I$ $a = -0.394940 - 1.319150I$ $b = 0.482681 + 0.906143I$	$7.13953 + 1.46853I$	$3.05642 + 1.15684I$
$u = -0.746200 + 0.650275I$ $a = 0.65129 + 1.97744I$ $b = -0.789249 - 0.567770I$	$2.34452 - 3.26844I$	$-0.51125 + 5.76632I$
$u = -0.746200 - 0.650275I$ $a = 0.65129 - 1.97744I$ $b = -0.789249 + 0.567770I$	$2.34452 + 3.26844I$	$-0.51125 - 5.76632I$
$u = 0.859754 + 0.483213I$ $a = -0.38717 - 1.39339I$ $b = 1.121840 + 0.675604I$	$5.19709 - 7.28348I$	$0.48893 + 3.47582I$
$u = 0.859754 - 0.483213I$ $a = -0.38717 + 1.39339I$ $b = 1.121840 - 0.675604I$	$5.19709 + 7.28348I$	$0.48893 - 3.47582I$
$u = -0.444486 + 0.932745I$ $a = 0.491844 - 0.136281I$ $b = 0.233679 + 0.757163I$	$-0.57052 - 1.45035I$	$-2.79476 + 3.95223I$
$u = -0.444486 - 0.932745I$ $a = 0.491844 + 0.136281I$ $b = 0.233679 - 0.757163I$	$-0.57052 + 1.45035I$	$-2.79476 - 3.95223I$
$u = -0.390178 + 0.976401I$ $a = 1.145310 + 0.082252I$ $b = 1.140120 - 0.553417I$	$-3.14846 + 3.44539I$	$-6.75217 + 0.85835I$
$u = -0.390178 - 0.976401I$ $a = 1.145310 - 0.082252I$ $b = 1.140120 + 0.553417I$	$-3.14846 - 3.44539I$	$-6.75217 - 0.85835I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.774197 + 0.542491I$ $a = 0.85888 - 1.62998I$ $b = -0.887679 + 0.562853I$	$2.03702 + 1.25848I$	$-0.673597 - 0.424058I$
$u = -0.774197 - 0.542491I$ $a = 0.85888 + 1.62998I$ $b = -0.887679 - 0.562853I$	$2.03702 - 1.25848I$	$-0.673597 + 0.424058I$
$u = 0.726981 + 0.585127I$ $a = -0.009615 - 0.462839I$ $b = -1.287760 + 0.038128I$	$0.693282 + 1.084750I$	$0.84034 - 2.20672I$
$u = 0.726981 - 0.585127I$ $a = -0.009615 + 0.462839I$ $b = -1.287760 - 0.038128I$	$0.693282 - 1.084750I$	$0.84034 + 2.20672I$
$u = 0.814949 + 0.692011I$ $a = -0.887492 - 1.038560I$ $b = 0.563908 + 0.890363I$	$7.65604 + 3.06196I$	$2.85560 - 3.26676I$
$u = 0.814949 - 0.692011I$ $a = -0.887492 + 1.038560I$ $b = 0.563908 - 0.890363I$	$7.65604 - 3.06196I$	$2.85560 + 3.26676I$
$u = 0.470464 + 0.988202I$ $a = -0.934410 + 0.574092I$ $b = -1.106270 - 0.444712I$	$-4.62810 + 2.33151I$	$-8.31817 - 4.26180I$
$u = 0.470464 - 0.988202I$ $a = -0.934410 - 0.574092I$ $b = -1.106270 + 0.444712I$	$-4.62810 - 2.33151I$	$-8.31817 + 4.26180I$
$u = 0.804049 + 0.749929I$ $a = -0.00655 + 1.93316I$ $b = 1.075070 - 0.706203I$	$6.10623 + 8.94206I$	$0. - 8.23482I$
$u = 0.804049 - 0.749929I$ $a = -0.00655 - 1.93316I$ $b = 1.075070 + 0.706203I$	$6.10623 - 8.94206I$	$0. + 8.23482I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.493094 + 1.016010I$ $a = -1.59707 + 1.11315I$ $b = -1.224240 - 0.290078I$	$-5.00368 - 4.93594I$	$0. + 4.73918I$
$u = -0.493094 - 1.016010I$ $a = -1.59707 - 1.11315I$ $b = -1.224240 + 0.290078I$	$-5.00368 + 4.93594I$	$0. - 4.73918I$
$u = 0.539831 + 1.037300I$ $a = 0.105849 - 0.458183I$ $b = -0.187882 + 0.590351I$	$-1.99960 + 6.36988I$	0
$u = 0.539831 - 1.037300I$ $a = 0.105849 + 0.458183I$ $b = -0.187882 - 0.590351I$	$-1.99960 - 6.36988I$	0
$u = 0.474089 + 1.104130I$ $a = 1.45581 + 0.65433I$ $b = 1.039890 - 0.411852I$	$-4.93184 + 9.37986I$	0
$u = 0.474089 - 1.104130I$ $a = 1.45581 - 0.65433I$ $b = 1.039890 + 0.411852I$	$-4.93184 - 9.37986I$	0
$u = -0.426782 + 0.618645I$ $a = 0.698536 - 0.258889I$ $b = 0.435081 + 0.010200I$	$0.44614 - 1.46892I$	$2.45505 + 4.68880I$
$u = -0.426782 - 0.618645I$ $a = 0.698536 + 0.258889I$ $b = 0.435081 - 0.010200I$	$0.44614 + 1.46892I$	$2.45505 - 4.68880I$
$u = -0.686999 + 1.049580I$ $a = -0.605852 + 0.318491I$ $b = 0.975791 - 0.737857I$	$4.17657 - 2.47366I$	0
$u = -0.686999 - 1.049580I$ $a = -0.605852 - 0.318491I$ $b = 0.975791 + 0.737857I$	$4.17657 + 2.47366I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.621345 + 1.112370I$ $a = 1.075420 + 0.442373I$ $b = -0.599743 - 0.611629I$	$-0.66028 + 7.35987I$	0
$u = 0.621345 - 1.112370I$ $a = 1.075420 - 0.442373I$ $b = -0.599743 + 0.611629I$	$-0.66028 - 7.35987I$	0
$u = 0.539838 + 1.154700I$ $a = 0.717944 + 0.714192I$ $b = 0.883741 + 0.288728I$	$-3.93061 + 6.79883I$	0
$u = 0.539838 - 1.154700I$ $a = 0.717944 - 0.714192I$ $b = 0.883741 - 0.288728I$	$-3.93061 - 6.79883I$	0
$u = -0.096857 + 0.706472I$ $a = 1.85712 - 0.36666I$ $b = 1.090240 + 0.526644I$	$-2.02645 - 6.10811I$	$-2.24190 + 8.19963I$
$u = -0.096857 - 0.706472I$ $a = 1.85712 + 0.36666I$ $b = 1.090240 - 0.526644I$	$-2.02645 + 6.10811I$	$-2.24190 - 8.19963I$
$u = -0.676066 + 1.095520I$ $a = 0.49625 - 1.44952I$ $b = 0.685624 + 0.854997I$	$5.06062 - 8.35366I$	0
$u = -0.676066 - 1.095520I$ $a = 0.49625 + 1.44952I$ $b = 0.685624 - 0.854997I$	$5.06062 + 8.35366I$	0
$u = -0.613282 + 1.139020I$ $a = -0.755202 + 1.068640I$ $b = -1.318570 + 0.147882I$	$-2.88387 - 9.43954I$	0
$u = -0.613282 - 1.139020I$ $a = -0.755202 - 1.068640I$ $b = -1.318570 - 0.147882I$	$-2.88387 + 9.43954I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.622036 + 1.155390I$ $a = -0.75797 - 2.29648I$ $b = -0.998224 + 0.581247I$	$-1.84844 + 12.09700I$	0
$u = 0.622036 - 1.155390I$ $a = -0.75797 + 2.29648I$ $b = -0.998224 - 0.581247I$	$-1.84844 - 12.09700I$	0
$u = -0.677239 + 0.115101I$ $a = -0.061726 - 0.714385I$ $b = 0.837450 + 0.532669I$	$1.46373 - 2.16929I$	$1.93538 + 4.15379I$
$u = -0.677239 - 0.115101I$ $a = -0.061726 + 0.714385I$ $b = 0.837450 - 0.532669I$	$1.46373 + 2.16929I$	$1.93538 - 4.15379I$
$u = -0.639069 + 1.170490I$ $a = -1.063440 + 0.188750I$ $b = 0.391398 - 0.937341I$	$3.10719 - 12.78830I$	0
$u = -0.639069 - 1.170490I$ $a = -1.063440 - 0.188750I$ $b = 0.391398 + 0.937341I$	$3.10719 + 12.78830I$	0
$u = -0.628804 + 1.188570I$ $a = 1.19762 - 2.06359I$ $b = 1.169860 + 0.651568I$	$0.7390 - 18.5909I$	0
$u = -0.628804 - 1.188570I$ $a = 1.19762 + 2.06359I$ $b = 1.169860 - 0.651568I$	$0.7390 + 18.5909I$	0
$u = -0.176786 + 0.620062I$ $a = 0.296057 - 0.355210I$ $b = 0.298074 - 0.573972I$	$0.15122 - 1.66122I$	$0.02280 + 4.79040I$
$u = -0.176786 - 0.620062I$ $a = 0.296057 + 0.355210I$ $b = 0.298074 + 0.573972I$	$0.15122 + 1.66122I$	$0.02280 - 4.79040I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.041304 + 0.584795I$ $a = -2.10977 - 0.99440I$ $b = -1.094520 + 0.329766I$	$-3.36770 + 1.13739I$	$-6.84638 - 1.16126I$
$u = 0.041304 - 0.584795I$ $a = -2.10977 + 0.99440I$ $b = -1.094520 - 0.329766I$	$-3.36770 - 1.13739I$	$-6.84638 + 1.16126I$
$u = 0.221586$ $a = 2.54657$ $b = -0.860639$	-1.25306	-8.27550

II.

$\boldsymbol{I_2^u = \langle 1.49 \times 10^{75} u^{77} + 6.02 \times 10^{75} u^{76} + \cdots + 2.52 \times 10^{76} b - 9.28 \times 10^{75},\ 3.70 \times 10^{76} u^{77} + 3.44 \times 10^{76} u^{76} + \cdots + 2.52 \times 10^{76} a - 1.84 \times 10^{77},\ u^{78} + 2u^{77} + \cdots + 6u + 9 \rangle}$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} -1.46642u^{77} - 1.36206u^{76} + \cdots - 8.66569u + 7.27687 \\ -0.0588937u^{77} - 0.238668u^{76} + \cdots - 0.527651u + 0.367596 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -1.52532u^{77} - 1.60073u^{76} + \cdots - 9.19334u + 7.64447 \\ -0.0588937u^{77} - 0.238668u^{76} + \cdots - 0.527651u + 0.367596 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.780270u^{77} - 0.336235u^{76} + \cdots - 15.3353u + 6.80859 \\ 0.620306u^{77} + 0.773476u^{76} + \cdots + 6.32818u - 0.178950 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -1.73384u^{77} - 2.69724u^{76} + \cdots - 5.01778u + 1.40397 \\ -0.989604u^{77} - 1.18721u^{76} + \cdots - 9.21326u + 0.938935 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} -1.45480u^{77} - 2.42612u^{76} + \cdots - 13.8787u - 8.41438 \\ 0.201187u^{77} + 0.892869u^{76} + \cdots + 0.751571u + 6.85187 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.152595u^{77} + 0.108414u^{76} + \cdots - 11.1909u + 4.25935 \\ 0.690807u^{77} + 0.684760u^{76} + \cdots + 4.07690u - 1.20358 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.960940u^{77} - 1.31404u^{76} + \cdots - 12.0629u - 6.62600 \\ 0.283248u^{77} + 1.19417u^{76} + \cdots + 0.173493u + 6.84390 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -1.20245u^{77} + 0.551265u^{76} + \cdots - 20.0210u + 21.7446$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{39} + 18u^{38} + \cdots + 17u + 1)^2$
c_2, c_4	$(u^{39} - 4u^{38} + \cdots + u + 1)^2$
c_3, c_7	$(u^{39} - u^{38} + \cdots + 20u - 8)^2$
c_5, c_6, c_9 c_{11}	$u^{78} - 2u^{77} + \cdots - 6u + 9$
c_8	$(u^{39} + 8u^{38} + \cdots - 168u - 49)^2$
c_{10}, c_{12}	$u^{78} + 42u^{77} + \cdots + 1296u + 81$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{39}+10y^{38}+\cdots+273y-1)^2$
c_2, c_4	$(y^{39}-18y^{38}+\cdots+17y-1)^2$
c_3, c_7	$(y^{39}+21y^{38}+\cdots-304y-64)^2$
c_5, c_6, c_9 c_{11}	$y^{78}+42y^{77}+\cdots+1296y+81$
c_8	$(y^{39}+16y^{38}+\cdots-14896y-2401)^2$
c_{10}, c_{12}	$y^{78}-14y^{77}+\cdots+160056y+6561$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.935752+0.334076I$ $a=-0.08446+1.47463I$ $b=\ \ 1.151380-0.661742I$	$3.33204+12.88680I$	$0.-8.07914I$
$u=-0.935752-0.334076I$ $a=-0.08446-1.47463I$ $b=\ \ 1.151380+0.661742I$	$3.33204-12.88680I$	$0.+8.07914I$
$u=-0.921632+0.370797I$ $a=-0.493133-1.090290I$ $b=\ \ 0.428310+0.923778I$	$5.52956+7.07830I$	0
$u=-0.921632-0.370797I$ $a=-0.493133+1.090290I$ $b=\ \ 0.428310-0.923778I$	$5.52956-7.07830I$	0
$u=-0.877103+0.502010I$ $a=-0.656251+1.183820I$ $b=\ \ 0.627750-0.866354I$	$6.84827+2.62234I$	0
$u=-0.877103-0.502010I$ $a=-0.656251-1.183820I$ $b=\ \ 0.627750+0.866354I$	$6.84827-2.62234I$	0
$u=-0.853435+0.563480I$ $a=-0.25126-1.65338I$ $b=\ \ 1.025900+0.718007I$	$5.63946-3.22969I$	0
$u=-0.853435-0.563480I$ $a=-0.25126+1.65338I$ $b=\ \ 1.025900-0.718007I$	$5.63946+3.22969I$	0
$u=-0.421079+0.866093I$ $a=\ \ 0.240345+0.226094I$ $b=-0.004189-0.473649I$	$-0.25831-1.95518I$	$0.+3.73688I$
$u=-0.421079-0.866093I$ $a=\ \ 0.240345-0.226094I$ $b=-0.004189+0.473649I$	$-0.25831+1.95518I$	$0.-3.73688I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.875936 + 0.365211I$ $a = 0.44784 + 1.76875I$ $b = -0.957399 - 0.572535I$	$0.52341 - 6.57302I$	$-4.00000 + 5.57627I$
$u = 0.875936 - 0.365211I$ $a = 0.44784 - 1.76875I$ $b = -0.957399 + 0.572535I$	$0.52341 + 6.57302I$	$-4.00000 - 5.57627I$
$u = -0.369999 + 0.985790I$ $a = -0.21949 + 2.01027I$ $b = -1.206930 + 0.129766I$	$-5.82579 - 1.13990I$	0
$u = -0.369999 - 0.985790I$ $a = -0.21949 - 2.01027I$ $b = -1.206930 - 0.129766I$	$-5.82579 + 1.13990I$	0
$u = 0.432345 + 0.972168I$ $a = -0.35265 - 3.47114I$ $b = -0.953268 + 0.489041I$	$-4.91649 + 3.39278I$	0
$u = 0.432345 - 0.972168I$ $a = -0.35265 + 3.47114I$ $b = -0.953268 - 0.489041I$	$-4.91649 - 3.39278I$	0
$u = -0.495177 + 0.949384I$ $a = -1.70830 + 0.52430I$ $b = 0.434521 - 0.849125I$	$-0.22948 - 3.68428I$	0
$u = -0.495177 - 0.949384I$ $a = -1.70830 - 0.52430I$ $b = 0.434521 + 0.849125I$	$-0.22948 + 3.68428I$	0
$u = 0.819566 + 0.432655I$ $a = 0.85930 - 1.51844I$ $b = -0.679795 + 0.572535I$	$1.37297 - 1.97475I$	$-1.44784 + 0.I$
$u = 0.819566 - 0.432655I$ $a = 0.85930 + 1.51844I$ $b = -0.679795 - 0.572535I$	$1.37297 + 1.97475I$	$-1.44784 + 0.I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.203106 + 1.060070I$ $a = 0.968752 - 0.567684I$ $b = -0.253426$	-4.02522	0
$u = 0.203106 - 1.060070I$ $a = 0.968752 + 0.567684I$ $b = -0.253426$	-4.02522	0
$u = -0.837403 + 0.377136I$ $a = -0.135228 + 0.197181I$ $b = -1.300720 - 0.108633I$	$-0.61125 + 4.04441I$	$-1.85906 - 4.24790I$
$u = -0.837403 - 0.377136I$ $a = -0.135228 - 0.197181I$ $b = -1.300720 + 0.108633I$	$-0.61125 - 4.04441I$	$-1.85906 + 4.24790I$
$u = 0.266721 + 0.837772I$ $a = 3.01041 + 0.57884I$ $b = -0.769146 - 0.335047I$	$-4.08864 - 0.29456I$	$-5.95022 - 1.12683I$
$u = 0.266721 - 0.837772I$ $a = 3.01041 - 0.57884I$ $b = -0.769146 + 0.335047I$	$-4.08864 + 0.29456I$	$-5.95022 + 1.12683I$
$u = -0.515622 + 0.997585I$ $a = 0.84314 - 2.88844I$ $b = 1.122760 + 0.637619I$	$-2.29395 - 9.20929I$	0
$u = -0.515622 - 0.997585I$ $a = 0.84314 + 2.88844I$ $b = 1.122760 - 0.637619I$	$-2.29395 + 9.20929I$	0
$u = -0.447755 + 0.743794I$ $a = -0.17566 - 2.38873I$ $b = 0.538688 + 0.783208I$	$0.486734 - 0.249361I$	$-1.00470 + 2.68648I$
$u = -0.447755 - 0.743794I$ $a = -0.17566 + 2.38873I$ $b = 0.538688 - 0.783208I$	$0.486734 + 0.249361I$	$-1.00470 - 2.68648I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.297469 + 1.100820I$ $a = 1.47876 - 0.64965I$ $b = 0.998340 + 0.492226I$	$-2.23729 - 5.41055I$	0
$u = -0.297469 - 1.100820I$ $a = 1.47876 + 0.64965I$ $b = 0.998340 - 0.492226I$	$-2.23729 + 5.41055I$	0
$u = -0.633476 + 0.972542I$ $a = 1.224690 - 0.692034I$ $b = -0.679795 + 0.572535I$	$1.37297 - 1.97475I$	0
$u = -0.633476 - 0.972542I$ $a = 1.224690 + 0.692034I$ $b = -0.679795 - 0.572535I$	$1.37297 + 1.97475I$	0
$u = 0.731432 + 0.901891I$ $a = -0.737944 - 0.598065I$ $b = 1.025900 + 0.718007I$	$5.63946 - 3.22969I$	0
$u = 0.731432 - 0.901891I$ $a = -0.737944 + 0.598065I$ $b = 1.025900 - 0.718007I$	$5.63946 + 3.22969I$	0
$u = 0.087507 + 1.177660I$ $a = -0.21659 - 1.40236I$ $b = -0.769146 + 0.335047I$	$-4.08864 + 0.29456I$	0
$u = 0.087507 - 1.177660I$ $a = -0.21659 + 1.40236I$ $b = -0.769146 - 0.335047I$	$-4.08864 - 0.29456I$	0
$u = -0.477826 + 1.085810I$ $a = 0.517883 - 0.686632I$ $b = 0.815381 - 0.342489I$	$-1.20519 - 1.94841I$	0
$u = -0.477826 - 1.085810I$ $a = 0.517883 + 0.686632I$ $b = 0.815381 + 0.342489I$	$-1.20519 + 1.94841I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.614881 + 1.018800I$ $a = -0.484419 - 1.098040I$ $b = -1.300720 - 0.108633I$	$-0.61125 + 4.04441I$	0
$u = 0.614881 - 1.018800I$ $a = -0.484419 + 1.098040I$ $b = -1.300720 + 0.108633I$	$-0.61125 - 4.04441I$	0
$u = 0.711619 + 0.958350I$ $a = 0.26945 + 1.55535I$ $b = 0.627750 - 0.866354I$	$6.84827 + 2.62234I$	0
$u = 0.711619 - 0.958350I$ $a = 0.26945 - 1.55535I$ $b = 0.627750 + 0.866354I$	$6.84827 - 2.62234I$	0
$u = 0.187819 + 0.782324I$ $a = -1.79504 - 1.27965I$ $b = -1.110300 + 0.306863I$	$-3.39626 + 1.13373I$	$-6.95849 - 0.14045I$
$u = 0.187819 - 0.782324I$ $a = -1.79504 + 1.27965I$ $b = -1.110300 - 0.306863I$	$-3.39626 - 1.13373I$	$-6.95849 + 0.14045I$
$u = 0.398905 + 1.143860I$ $a = 0.399985 + 1.104750I$ $b = 0.905691 + 0.426992I$	$-5.44128 - 1.70381I$	0
$u = 0.398905 - 1.143860I$ $a = 0.399985 - 1.104750I$ $b = 0.905691 - 0.426992I$	$-5.44128 + 1.70381I$	0
$u = 0.759719 + 0.204246I$ $a = 0.417590 + 0.399149I$ $b = 0.815381 - 0.342489I$	$-1.20519 - 1.94841I$	$-1.31413 - 1.52369I$
$u = 0.759719 - 0.204246I$ $a = 0.417590 - 0.399149I$ $b = 0.815381 + 0.342489I$	$-1.20519 + 1.94841I$	$-1.31413 + 1.52369I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.632994 + 1.047620I$ $a = -0.43262 + 2.44367I$ $b = -0.957399 - 0.572535I$	$0.52341 - 6.57302I$	0
$u = -0.632994 - 1.047620I$ $a = -0.43262 - 2.44367I$ $b = -0.957399 + 0.572535I$	$0.52341 + 6.57302I$	0
$u = -0.194999 + 1.212780I$ $a = -2.16514 + 0.77747I$ $b = -1.206930 - 0.129766I$	$-5.82579 + 1.13990I$	0
$u = -0.194999 - 1.212780I$ $a = -2.16514 - 0.77747I$ $b = -1.206930 + 0.129766I$	$-5.82579 - 1.13990I$	0
$u = -0.458461 + 0.618159I$ $a = -1.75992 + 1.51732I$ $b = 1.059740 - 0.631021I$	$-1.08550 + 5.08722I$	$-3.54287 - 2.85265I$
$u = -0.458461 - 0.618159I$ $a = -1.75992 - 1.51732I$ $b = 1.059740 + 0.631021I$	$-1.08550 - 5.08722I$	$-3.54287 + 2.85265I$
$u = 0.665003 + 1.069840I$ $a = -1.145490 - 0.380431I$ $b = 0.428310 + 0.923778I$	$5.52956 + 7.07830I$	0
$u = 0.665003 - 1.069840I$ $a = -1.145490 + 0.380431I$ $b = 0.428310 - 0.923778I$	$5.52956 - 7.07830I$	0
$u = 0.329786 + 1.218560I$ $a = 1.56598 + 0.65685I$ $b = 0.905691 - 0.426992I$	$-5.44128 + 1.70381I$	0
$u = 0.329786 - 1.218560I$ $a = 1.56598 - 0.65685I$ $b = 0.905691 + 0.426992I$	$-5.44128 - 1.70381I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.007648 + 1.268320I$ $a = 1.173280 - 0.503651I$ $b = 1.059740 + 0.631021I$	$-1.08550 - 5.08722I$	0
$u = 0.007648 - 1.268320I$ $a = 1.173280 + 0.503651I$ $b = 1.059740 - 0.631021I$	$-1.08550 + 5.08722I$	0
$u = 0.191597 + 1.259150I$ $a = -0.654424 + 0.905197I$ $b = -0.953268 - 0.489041I$	$-4.91649 - 3.39278I$	0
$u = 0.191597 - 1.259150I$ $a = -0.654424 - 0.905197I$ $b = -0.953268 + 0.489041I$	$-4.91649 + 3.39278I$	0
$u = -0.053269 + 1.273150I$ $a = 0.189980 - 0.006366I$ $b = 0.538688 - 0.783208I$	$0.486734 + 0.249361I$	0
$u = -0.053269 - 1.273150I$ $a = 0.189980 + 0.006366I$ $b = 0.538688 + 0.783208I$	$0.486734 - 0.249361I$	0
$u = 0.652815 + 1.100720I$ $a = 0.94692 + 2.19782I$ $b = 1.151380 - 0.661742I$	$3.33204 + 12.88680I$	0
$u = 0.652815 - 1.100720I$ $a = 0.94692 - 2.19782I$ $b = 1.151380 + 0.661742I$	$3.33204 - 12.88680I$	0
$u = -0.177345 + 1.304430I$ $a = 0.268918 - 0.085683I$ $b = 0.434521 + 0.849125I$	$-0.22948 + 3.68428I$	0
$u = -0.177345 - 1.304430I$ $a = 0.268918 + 0.085683I$ $b = 0.434521 - 0.849125I$	$-0.22948 - 3.68428I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.542144 + 0.391790I$ $a = 0.860446 + 0.302145I$ $b = -0.004189 - 0.473649I$	$-0.25831 - 1.95518I$	$-1.07609 + 3.73688I$
$u = 0.542144 - 0.391790I$ $a = 0.860446 - 0.302145I$ $b = -0.004189 + 0.473649I$	$-0.25831 + 1.95518I$	$-1.07609 - 3.73688I$
$u = -0.212141 + 1.319690I$ $a = 1.064230 + 0.372067I$ $b = 1.122760 - 0.637619I$	$-2.29395 + 9.20929I$	0
$u = -0.212141 - 1.319690I$ $a = 1.064230 - 0.372067I$ $b = 1.122760 + 0.637619I$	$-2.29395 - 9.20929I$	0
$u = 0.572001 + 0.029826I$ $a = -0.286051 + 0.334344I$ $b = 0.998340 + 0.492226I$	$-2.23729 - 5.41055I$	$-4.42668 + 7.07273I$
$u = 0.572001 - 0.029826I$ $a = -0.286051 - 0.334344I$ $b = 0.998340 - 0.492226I$	$-2.23729 + 5.41055I$	$-4.42668 - 7.07273I$
$u = -0.237613 + 0.375704I$ $a = -1.99381 + 0.34348I$ $b = -1.110300 + 0.306863I$	$-3.39626 + 1.13373I$	$-6.95849 - 0.14045I$
$u = -0.237613 - 0.375704I$ $a = -1.99381 - 0.34348I$ $b = -1.110300 - 0.306863I$	$-3.39626 - 1.13373I$	$-6.95849 + 0.14045I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{11}{4}u^3 - \frac{21}{4}u^2 - \frac{1}{2}u - \frac{31}{4}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_3	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.547424 + 0.585652I$ $a = -0.278726 + 0.483420I$ $b = -1.00000$	$-0.66484 - 1.39709I$	$-6.15099 + 3.96898I$
$u = -0.547424 - 0.585652I$ $a = -0.278726 - 0.483420I$ $b = -1.00000$	$-0.66484 + 1.39709I$	$-6.15099 - 3.96898I$
$u = \quad 0.547424 + 1.120870I$ $a = -0.971274 - 0.813859I$ $b = -1.00000$	$-4.26996 + 7.64338I$	$-8.22401 - 8.10462I$
$u = \quad 0.547424 - 1.120870I$ $a = -0.971274 + 0.813859I$ $b = -1.00000$	$-4.26996 - 7.64338I$	$-8.22401 + 8.10462I$

IV. $\boldsymbol{I^u_4} =$
$\boldsymbol{\langle 11588a^5u{+}5390a^4u{+}\cdots{+}14326a{-}45947,\ -2a^5u{+}6a^4u{+}\cdots{+}12a{-}4,\ u^2{+}1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} a \\ -0.301559a^5u - 0.140266a^4u + \cdots - 0.372811a + 1.19570 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.301559a^5u - 0.140266a^4u + \cdots + 0.627189a + 1.19570 \\ -0.301559a^5u - 0.140266a^4u + \cdots - 0.372811a + 1.19570 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.107919a^5u + 0.290213a^4u + \cdots + 2.24519a - 0.0820777 \\ -0.107919a^5u + 0.290213a^4u + \cdots + 2.24519a - 0.0820777 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.421084a^5u + 0.441460a^4u + \cdots + 1.25461a - 0.959143 \\ 0.299607a^5u + 0.383116a^4u + \cdots + 0.829781a - 1.01689 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.00416374a^5u - 0.0596976a^4u + \cdots - 1.24735a + 1.09257 \\ -0.112083a^5u + 0.230515a^4u + \cdots + 0.997840a + 1.01049 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.107919a^5u + 0.290213a^4u + \cdots + 2.24519a - 0.0820777 \\ -0.107919a^5u + 0.290213a^4u + \cdots + 2.24519a - 0.0820777 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.0605304a^5u - 0.126187a^4u + \cdots - 0.450048a + 0.0164988 \\ -0.0605304a^5u - 0.126187a^4u + \cdots - 0.450048a + 1.01650 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{14908}{38427}a^5u + \frac{9636}{12809}a^5 - \frac{27168}{12809}a^4u + \frac{3940}{38427}a^4 + \frac{76600}{38427}a^3u - \frac{292436}{38427}a^3 - \frac{38968}{38427}a^2u + \frac{498880}{38427}a^2 - \frac{169028}{38427}au - \frac{188864}{12809}a + \frac{248464}{38427}u - \frac{36716}{12809}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.000000I$ $a = 0.642486 + 0.561491I$ $b = 0.428243 - 0.664531I$	$-1.39926 - 0.92430I$	$-6.28328 + 0.79423I$
$u = 1.000000I$ $a = 0.045578 + 0.758053I$ $b = 0.428243 + 0.664531I$	$-1.39926 + 0.92430I$	$-6.28328 - 0.79423I$
$u = 1.000000I$ $a = 0.396494 - 1.200400I$ $b = -1.002190 + 0.295542I$	$-5.18047 + 0.92430I$	$-13.71672 - 0.79423I$
$u = 1.000000I$ $a = 0.596223 - 0.272874I$ $b = 1.073950 + 0.558752I$	$-3.28987 - 5.69302I$	$-10.00000 + 5.51057I$
$u = 1.000000I$ $a = 2.23400 + 0.48963I$ $b = 1.073950 - 0.558752I$	$-3.28987 + 5.69302I$	$-10.00000 - 5.51057I$
$u = 1.000000I$ $a = -2.91479 + 1.66410I$ $b = -1.002190 - 0.295542I$	$-5.18047 - 0.92430I$	$-13.71672 + 0.79423I$
$u = -1.000000I$ $a = 0.642486 - 0.561491I$ $b = 0.428243 + 0.664531I$	$-1.39926 + 0.92430I$	$-6.28328 - 0.79423I$
$u = -1.000000I$ $a = 0.045578 - 0.758053I$ $b = 0.428243 - 0.664531I$	$-1.39926 - 0.92430I$	$-6.28328 + 0.79423I$
$u = -1.000000I$ $a = 0.396494 + 1.200400I$ $b = -1.002190 - 0.295542I$	$-5.18047 - 0.92430I$	$-13.71672 + 0.79423I$
$u = -1.000000I$ $a = 0.596223 + 0.272874I$ $b = 1.073950 - 0.558752I$	$-3.28987 + 5.69302I$	$-10.00000 - 5.51057I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad - 1.000000I$ $a = \quad 2.23400 - 0.48963I$ $b = \quad 1.073950 + 0.558752I$	$-3.28987 - 5.69302I$	$-10.00000 + 5.51057I$
$u = \quad - 1.000000I$ $a = -2.91479 - 1.66410I$ $b = -1.002190 + 0.295542I$	$-5.18047 + 0.92430I$	$-13.71672 - 0.79423I$

V. $\boldsymbol{I_5^u = \langle b+1,\ u^5-u^4+u^3-u^2+a+u,\ u^6-u^5+2u^4-2u^3+2u^2-2u+1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.498832 + 1.001300I$ $a = -0.767394 + 0.943705I$ $b = -1.00000$	$-1.91067 - 2.82812I$	$-6.15260 + 3.54173I$
$u = -0.498832 - 1.001300I$ $a = -0.767394 - 0.943705I$ $b = -1.00000$	$-1.91067 + 2.82812I$	$-6.15260 - 3.54173I$
$u = 0.284920 + 1.115140I$ $a = -1.37744 - 1.47725I$ $b = -1.00000$	-6.04826	$-10.69479 + 0.I$
$u = 0.284920 - 1.115140I$ $a = -1.37744 + 1.47725I$ $b = -1.00000$	-6.04826	$-10.69479 + 0.I$
$u = 0.713912 + 0.305839I$ $a = -0.355167 - 0.198843I$ $b = -1.00000$	$-1.91067 - 2.82812I$	$-6.15260 + 3.54173I$
$u = 0.713912 - 0.305839I$ $a = -0.355167 + 0.198843I$ $b = -1.00000$	$-1.91067 + 2.82812I$	$-6.15260 - 3.54173I$

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^{10}(u^6-3u^5+5u^4-4u^3+2u^2-u+1)^2$ $\cdot((u^{39}+18u^{38}+\cdots+17u+1)^2)(u^{53}+25u^{52}+\cdots+225u+16)$
c_2	$((u-1)^{10})(u^6+u^5+\cdots+u+1)^2(u^{39}-4u^{38}+\cdots+u+1)^2$ $\cdot(u^{53}-5u^{52}+\cdots-31u+4)$
c_3, c_7	$u^{10}(u^{12}+3u^{10}+\cdots+u^2+1)(u^{39}-u^{38}+\cdots+20u-8)^2$ $\cdot(u^{53}+3u^{52}+\cdots+240u+64)$
c_4	$((u+1)^{10})(u^6-u^5+\cdots-u+1)^2(u^{39}-4u^{38}+\cdots+u+1)^2$ $\cdot(u^{53}-5u^{52}+\cdots-31u+4)$
c_5, c_6	$(u^2+1)^6(u^4+u^2+u+1)(u^6-u^5+2u^4-2u^3+2u^2-2u+1)$ $\cdot(u^{53}+11u^{51}+\cdots+2u+1)(u^{78}-2u^{77}+\cdots-6u+9)$
c_8	$((u^3-u^2+1)^2)(u^4+3u^3+\cdots+3u+2)(u^{12}-u^{10}+\cdots-3u^2+1)$ $\cdot(u^{39}+8u^{38}+\cdots-168u-49)^2$ $\cdot(u^{53}-24u^{52}+\cdots+284992u-13252)$
c_9, c_{11}	$(u^2+1)^6(u^4+u^2-u+1)(u^6+u^5+2u^4+2u^3+2u^2+2u+1)$ $\cdot(u^{53}+11u^{51}+\cdots+2u+1)(u^{78}-2u^{77}+\cdots-6u+9)$
c_{10}, c_{12}	$(u+1)^{12}(u^4+2u^3+3u^2+u+1)(u^6+3u^5+4u^4+2u^3+1)$ $\cdot(u^{53}+22u^{52}+\cdots+2u-1)(u^{78}+42u^{77}+\cdots+1296u+81)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^{10}(y^6+y^5+5y^4+6y^2+3y+1)^2$ $\cdot((y^{39}+10y^{38}+\cdots+273y-1)^2)(y^{53}+11y^{52}+\cdots+12609y-256)$
c_2, c_4	$(y-1)^{10}(y^6-3y^5+5y^4-4y^3+2y^2-y+1)^2$ $\cdot((y^{39}-18y^{38}+\cdots+17y-1)^2)(y^{53}-25y^{52}+\cdots+225y-16)$
c_3, c_7	$y^{10}(y^6+3y^5+5y^4+4y^3+2y^2+y+1)^2$ $\cdot(y^{39}+21y^{38}+\cdots-304y-64)^2$ $\cdot(y^{53}+27y^{52}+\cdots-52992y-4096)$
c_5, c_6, c_9 c_{11}	$(y+1)^{12}(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^{53}+22y^{52}+\cdots+2y-1)(y^{78}+42y^{77}+\cdots+1296y+81)$
c_8	$(y^3-y^2+2y-1)^2(y^4-y^3+2y^2+7y+4)$ $\cdot(y^6-y^5+5y^4+6y^2-3y+1)^2$ $\cdot(y^{39}+16y^{38}+\cdots-14896y-2401)^2$ $\cdot(y^{53}+14y^{52}+\cdots+16670504648y-175615504)$
c_{10}, c_{12}	$(y-1)^{12}(y^4+2y^3+7y^2+5y+1)(y^6-y^5+4y^4-2y^3+8y^2+1)$ $\cdot(y^{53}+34y^{52}+\cdots+430y-1)(y^{78}-14y^{77}+\cdots+160056y+6561)$