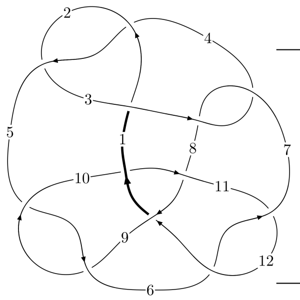
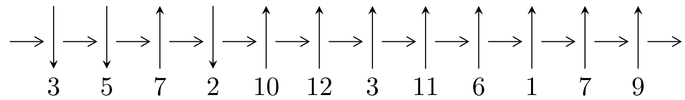
$12n_{0202}$ ($K12n_{0202}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 2.05235 \times 10^{52} u^{33} + 1.15512 \times 10^{53} u^{32} + \cdots + 2.31768 \times 10^{52} b + 6.87378 \times 10^{54}, \\
& -8.21759 \times 10^{53} u^{33} - 4.54814 \times 10^{54} u^{32} + \cdots + 1.85414 \times 10^{53} a - 2.27389 \times 10^{56}, \\
& u^{34} + 6u^{33} + \cdots + 1504u + 128 \rangle \\
I_2^u = \langle & -185u^{10}a^3 + 209u^{10}a^2 + \cdots - 1226a + 794,\ 6u^{10}a^3 + 37u^{10}a^2 + \cdots - 398a - 413, \\
& u^{11} + 2u^{10} - u^9 - 3u^8 + u^7 + 2u^6 + 4u^5 + 11u^4 + 9u^3 + u^2 - 2u - 2 \rangle \\
I_3^u = \langle & 26139164u^{15} + 19494102u^{14} + \cdots + 39284803b + 1531021, \\
& 221512445u^{15} + 269307859u^{14} + \cdots + 39284803a + 24902091, \\
& u^{16} + u^{15} - u^{14} - 2u^{13} - 3u^{12} - 4u^{11} + 10u^{10} + 19u^9 + 3u^8 - 20u^7 - 20u^6 + 7u^5 + 11u^4 + 7u^3 + 7u^2 + 1 \rangle \\
I_4^u = \langle & 5698393a^{11} + 735353365b + \cdots + 1014170313a - 203703816, \\
& a^{12} - 4a^{11} + 6a^{10} - 11a^9 + 32a^8 - 45a^7 + 28a^6 - 51a^5 + 143a^4 - 191a^3 + 132a^2 - 40a + 7,\ u - 1 \rangle
\end{aligned}$$

$$\begin{aligned}
I_1^v &= \langle a,\ -8v^2 + b + 26v - 7,\ 4v^3 - 14v^2 + 7v - 1 \rangle \\
I_2^v &= \langle a,\ b^4 - b^3 + 2b^2 - 2b + 1,\ v + 1 \rangle
\end{aligned}$$

* 6 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 113 representations.

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[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. $I_1^u = \langle 2.05 \times 10^{52}u^{33} + 1.16 \times 10^{53}u^{32} + \cdots + 2.32 \times 10^{52}b + 6.87 \times 10^{54},\ -8.22 \times 10^{53}u^{33} - 4.55 \times 10^{54}u^{32} + \cdots + 1.85 \times 10^{53}a - 2.27 \times 10^{56},\ u^{34} + 6u^{33} + \cdots + 1504u + 128\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 4.43202u^{33} + 24.5296u^{32} + \cdots + 11740.1u + 1226.38 \\ -0.885519u^{33} - 4.98395u^{32} + \cdots - 2726.35u - 296.581 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 3.82928u^{33} + 21.1964u^{32} + \cdots + 10122.3u + 1055.68 \\ 1.77988u^{33} + 9.85723u^{32} + \cdots + 4665.13u + 481.509 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 3.54650u^{33} + 19.5456u^{32} + \cdots + 9013.77u + 929.804 \\ -0.885519u^{33} - 4.98395u^{32} + \cdots - 2726.35u - 296.581 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1.06307u^{33} + 5.93274u^{32} + \cdots + 3043.91u + 325.793 \\ -2.44641u^{33} - 13.4720u^{32} + \cdots - 6083.54u - 619.031 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.691837u^{33} - 3.82621u^{32} + \cdots - 1770.73u - 179.020 \\ -2.07724u^{33} - 11.4986u^{32} + \cdots - 5450.40u - 563.433 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 4.16237u^{33} + 23.1776u^{32} + \cdots + 11626.0u + 1231.40 \\ 1.99898u^{33} + 11.2399u^{32} + \cdots + 6044.47u + 650.417 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 3.32446u^{33} + 18.3671u^{32} + \cdots + 8593.18u + 887.775 \\ 2.26139u^{33} + 12.4344u^{32} + \cdots + 5549.28u + 561.982 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1.06307u^{33} + 5.93274u^{32} + \cdots + 3043.91u + 325.793 \\ -2.26139u^{33} - 12.4344u^{32} + \cdots - 5549.28u - 561.982 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u \\ -u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -14.4745u^{33} - 80.2243u^{32} + \cdots - 38793.6u - 4044.27$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{34}+19u^{33}+\cdots+32880u+256$
c_2, c_4	$u^{34}-5u^{33}+\cdots+204u-16$
c_3, c_7	$u^{34}-6u^{33}+\cdots-1504u+128$
c_5, c_6, c_9 c_{11}	$u^{34}+12u^{32}+\cdots-u-1$
c_8, c_{10}	$u^{34}-8u^{32}+\cdots+11u+1$
c_{12}	$u^{34}-29u^{33}+\cdots-229376u+16384$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{34} - 3y^{33} + \cdots - 959098624y + 65536$
c_2, c_4	$y^{34} - 19y^{33} + \cdots - 32880y + 256$
c_3, c_7	$y^{34} - 12y^{33} + \cdots - 388096y + 16384$
c_5, c_6, c_9 c_{11}	$y^{34} + 24y^{33} + \cdots - y + 1$
c_8, c_{10}	$y^{34} - 16y^{33} + \cdots - 37y + 1$
c_{12}	$y^{34} + 15y^{33} + \cdots - 536870912y + 268435456$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.090643 + 0.777275I$ $a = 0.932410 + 0.812112I$ $b = -0.511224 + 0.237290I$	$0.71635 + 1.25840I$	$9.52850 + 1.65312I$
$u = -0.090643 - 0.777275I$ $a = 0.932410 - 0.812112I$ $b = -0.511224 - 0.237290I$	$0.71635 - 1.25840I$	$9.52850 - 1.65312I$
$u = 0.306658 + 0.718173I$ $a = 0.662294 - 0.462387I$ $b = 0.195615 - 0.391603I$	$-1.69600 - 0.85978I$	$-1.64649 + 1.83237I$
$u = 0.306658 - 0.718173I$ $a = 0.662294 + 0.462387I$ $b = 0.195615 + 0.391603I$	$-1.69600 + 0.85978I$	$-1.64649 - 1.83237I$
$u = 1.292730 + 0.093074I$ $a = -1.291070 + 0.061590I$ $b = 0.761362 - 0.484380I$	$5.59278 + 0.13916I$	$9.58742 + 2.45732I$
$u = 1.292730 - 0.093074I$ $a = -1.291070 - 0.061590I$ $b = 0.761362 + 0.484380I$	$5.59278 - 0.13916I$	$9.58742 - 2.45732I$
$u = -0.871052 + 0.990780I$ $a = -0.406604 - 0.666697I$ $b = -0.072976 - 0.925253I$	$-1.67974 + 1.56924I$	$0. - 1.70901I$
$u = -0.871052 - 0.990780I$ $a = -0.406604 + 0.666697I$ $b = -0.072976 + 0.925253I$	$-1.67974 - 1.56924I$	$0. + 1.70901I$
$u = -1.288240 + 0.420045I$ $a = -1.135880 - 0.354651I$ $b = 0.894899 + 0.322623I$	$4.57328 - 5.79683I$	$6.00000 + 4.29308I$
$u = -1.288240 - 0.420045I$ $a = -1.135880 + 0.354651I$ $b = 0.894899 - 0.322623I$	$4.57328 + 5.79683I$	$6.00000 - 4.29308I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.304100 + 0.388118I$ $a = 1.251970 - 0.492836I$ $b = -0.510913 + 1.267090I$	$-6.83462 - 7.06965I$	$0. + 6.15439I$
$u = -1.304100 - 0.388118I$ $a = 1.251970 + 0.492836I$ $b = -0.510913 - 1.267090I$	$-6.83462 + 7.06965I$	$0. - 6.15439I$
$u = -1.359360 + 0.205447I$ $a = 0.692011 + 0.175208I$ $b = -0.778312 - 0.579500I$	$3.00226 - 0.76687I$	$6.00000 + 0.I$
$u = -1.359360 - 0.205447I$ $a = 0.692011 - 0.175208I$ $b = -0.778312 + 0.579500I$	$3.00226 + 0.76687I$	$6.00000 + 0.I$
$u = 1.154680 + 0.767394I$ $a = -0.894645 + 0.517297I$ $b = 0.262146 + 0.969895I$	$2.68203 + 3.10270I$	$6.00000 + 0.I$
$u = 1.154680 - 0.767394I$ $a = -0.894645 - 0.517297I$ $b = 0.262146 - 0.969895I$	$2.68203 - 3.10270I$	$6.00000 + 0.I$
$u = -0.510540 + 1.313970I$ $a = -0.051694 + 0.350554I$ $b = 0.55842 + 1.32975I$	$-5.67028 + 10.25340I$	$0. - 7.14529I$
$u = -0.510540 - 1.313970I$ $a = -0.051694 - 0.350554I$ $b = 0.55842 - 1.32975I$	$-5.67028 - 10.25340I$	$0. + 7.14529I$
$u = 0.286604 + 1.384360I$ $a = -0.024163 - 0.361453I$ $b = 0.503949 - 1.158680I$	$-4.18172 - 4.31448I$	0
$u = 0.286604 - 1.384360I$ $a = -0.024163 + 0.361453I$ $b = 0.503949 + 1.158680I$	$-4.18172 + 4.31448I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.20850+0.89083I$ $a=-0.923171-0.397480I$ $b=\ \ 0.237804-1.150510I$	$-0.57232-8.89823I$	0
$u=-1.20850-0.89083I$ $a=-0.923171+0.397480I$ $b=\ \ 0.237804+1.150510I$	$-0.57232+8.89823I$	0
$u=\ \ 1.52570+0.09137I$ $a=\ \ 0.736791+0.196904I$ $b=-0.716836-0.876660I$	$3.16512+5.42087I$	0
$u=\ \ 1.52570-0.09137I$ $a=\ \ 0.736791-0.196904I$ $b=-0.716836+0.876660I$	$3.16512-5.42087I$	0
$u=-0.463998$ $a=-5.35214$ $b=\ \ 0.401353$	-0.541158	31.3900
$u=-1.32019+0.79594I$ $a=\ \ 1.40106+0.21908I$ $b=-0.61404+1.47259I$	$-2.9964-17.7107I$	0
$u=-1.32019-0.79594I$ $a=\ \ 1.40106-0.21908I$ $b=-0.61404-1.47259I$	$-2.9964+17.7107I$	0
$u=-0.448045+0.057573I$ $a=-0.050536+0.333276I$ $b=\ \ 0.22589+1.49925I$	$-10.84120+5.04921I$	$15.4774+2.0506I$
$u=-0.448045-0.057573I$ $a=-0.050536-0.333276I$ $b=\ \ 0.22589-1.49925I$	$-10.84120-5.04921I$	$15.4774-2.0506I$
$u=\ \ 1.40945+0.64929I$ $a=\ \ 1.283140-0.005753I$ $b=-0.63967-1.38569I$	$-0.33266+11.43620I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.40945 - 0.64929I$ $a = 1.283140 + 0.005753I$ $b = -0.63967 + 1.38569I$	$-0.33266 - 11.43620I$	0
$u = -0.19301 + 1.65922I$ $a = 0.049963 + 0.259298I$ $b = 0.220997 + 0.996367I$	$-12.14010 + 0.90472I$	0
$u = -0.19301 - 1.65922I$ $a = 0.049963 - 0.259298I$ $b = 0.220997 - 0.996367I$	$-12.14010 - 0.90472I$	0
$u = -0.300279$ $a = 1.01338$ $b = -0.435581$	0.684542	14.6620

II. $\boldsymbol{I_2^u = \langle -185u^{10}a^3 + 209u^{10}a^2 + \cdots - 1226a + 794,\ 6u^{10}a^3 + 37u^{10}a^2 + \cdots - 398a - 413,\ u^{11} + 2u^{10} + \cdots - 2u - 2\rangle}$

(i) Arc colorings

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

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} a \\ 0.690299a^3u^{10} - 0.779851a^2u^{10} + \cdots + 4.57463a - 2.96269 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.470149a^3u^{10} + 0.279851a^2u^{10} + \cdots - 3.03731a + 0.462687 \\ 0.0298507a^2u^{10} + 0.485075u^{10} + \cdots + 0.0746269a^2 + 0.462687 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.690299a^3u^{10} - 0.779851a^2u^{10} + \cdots + 5.57463a - 2.96269 \\ 0.690299a^3u^{10} - 0.779851a^2u^{10} + \cdots + 4.57463a - 2.96269 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{1}{2}u^{10} + \frac{3}{4}u^9 + \cdots + \frac{11}{4}u^2 - \frac{3}{2} \\ \frac{1}{2}u^{10} + \frac{1}{2}u^9 + \cdots + \frac{7}{4}u^2 - \frac{1}{2} \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.100746a^3u^{10} - 0.380597a^2u^{10} + \cdots + 0.313433a + 0.850746 \\ -0.570896a^3u^{10} - 0.100746a^2u^{10} + \cdots - 2.72388a - 0.686567 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.0597015a^3u^{10} - 0.220149a^2u^{10} + \cdots + 1.42537a - 3.03731 \\ 0.559701a^3u^{10} - 0.970149a^2u^{10} + \cdots + 5.42537a - 4.03731 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -\frac{1}{4}u^{10} + \frac{3}{4}u^8 + \cdots - \frac{1}{2}u - \frac{1}{2} \\ -\frac{3}{4}u^{10} - \frac{3}{4}u^9 + \cdots - \frac{1}{2}u + 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{1}{2}u^{10} + \frac{3}{4}u^9 + \cdots + \frac{11}{4}u^2 - \frac{3}{2} \\ \frac{3}{4}u^{10} + \frac{3}{4}u^9 + \cdots + \frac{1}{2}u - 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u \\ -u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{83}{67}u^{10}a^3 - \frac{126}{67}u^{10}a^2 + \cdots + \frac{784}{67}a - \frac{144}{67}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{11}+4u^{10}+\cdots+11u+1)^4$
c_2, c_4	$(u^{11}-2u^{10}+4u^8-2u^7-4u^6+5u^5+2u^4-5u^3+u^2+3u-1)^4$
c_3, c_7	$(u^{11}-2u^{10}-u^9+3u^8+u^7-2u^6+4u^5-11u^4+9u^3-u^2-2u+2)^4$
c_5, c_6, c_9 c_{11}	$u^{44}-2u^{43}+\cdots+2932u+661$
c_8, c_{10}	$u^{44}+10u^{43}+\cdots+1758u+421$
c_{12}	$(u^2+u+1)^{22}$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{11} + 8y^{10} + \cdots + 67y - 1)^4$
c_2, c_4	$(y^{11} - 4y^{10} + \cdots + 11y - 1)^4$
c_3, c_7	$(y^{11} - 6y^{10} + \cdots + 8y - 4)^4$
c_5, c_6, c_9 c_{11}	$y^{44} + 30y^{43} + \cdots + 6318180y + 436921$
c_8, c_{10}	$y^{44} - 2y^{43} + \cdots - 1105128y + 177241$
c_{12}	$(y^2 + y + 1)^{22}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.217339 + 1.116860I$ $a = -0.009955 + 0.594446I$ $b = 1.080720 + 0.060619I$	$-1.72919 - 4.44881I$	$2.92816 + 6.35357I$
$u = 0.217339 + 1.116860I$ $a = 0.443379 + 0.335985I$ $b = -0.301589 + 1.082120I$	$-1.72919 - 4.44881I$	$2.92816 + 6.35357I$
$u = 0.217339 + 1.116860I$ $a = 0.183122 - 0.512572I$ $b = 0.700289 - 0.364504I$	$-1.72919 - 0.38904I$	$2.92816 - 0.57463I$
$u = 0.217339 + 1.116860I$ $a = 0.405942 - 0.327999I$ $b = -0.100215 - 0.881617I$	$-1.72919 - 0.38904I$	$2.92816 - 0.57463I$
$u = 0.217339 - 1.116860I$ $a = -0.009955 - 0.594446I$ $b = 1.080720 - 0.060619I$	$-1.72919 + 4.44881I$	$2.92816 - 6.35357I$
$u = 0.217339 - 1.116860I$ $a = 0.443379 - 0.335985I$ $b = -0.301589 - 1.082120I$	$-1.72919 + 4.44881I$	$2.92816 - 6.35357I$
$u = 0.217339 - 1.116860I$ $a = 0.183122 + 0.512572I$ $b = 0.700289 + 0.364504I$	$-1.72919 + 0.38904I$	$2.92816 + 0.57463I$
$u = 0.217339 - 1.116860I$ $a = 0.405942 + 0.327999I$ $b = -0.100215 + 0.881617I$	$-1.72919 + 0.38904I$	$2.92816 + 0.57463I$
$u = -1.116820 + 0.404951I$ $a = 0.367564 + 1.052860I$ $b = -0.088366 + 1.407570I$	$-4.26357 - 6.72730I$	$0.91876 + 9.34733I$
$u = -1.116820 + 0.404951I$ $a = -1.61003 + 0.21622I$ $b = 0.97212 - 1.45656I$	$-4.26357 - 6.72730I$	$0.91876 + 9.34733I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.116820 + 0.404951I$ $a = -0.153427 + 0.275989I$ $b = -0.38639 - 1.80698I$	$-4.26357 - 2.66753I$	$0.91876 + 2.41912I$
$u = -1.116820 + 0.404951I$ $a = 1.87372 + 0.16548I$ $b = -0.097911 + 1.066130I$	$-4.26357 - 2.66753I$	$0.91876 + 2.41912I$
$u = -1.116820 - 0.404951I$ $a = 0.367564 - 1.052860I$ $b = -0.088366 - 1.407570I$	$-4.26357 + 6.72730I$	$0.91876 - 9.34733I$
$u = -1.116820 - 0.404951I$ $a = -1.61003 - 0.21622I$ $b = 0.97212 + 1.45656I$	$-4.26357 + 6.72730I$	$0.91876 - 9.34733I$
$u = -1.116820 - 0.404951I$ $a = -0.153427 - 0.275989I$ $b = -0.38639 + 1.80698I$	$-4.26357 + 2.66753I$	$0.91876 - 2.41912I$
$u = -1.116820 - 0.404951I$ $a = 1.87372 - 0.16548I$ $b = -0.097911 - 1.066130I$	$-4.26357 + 2.66753I$	$0.91876 - 2.41912I$
$u = -0.323694 + 0.583510I$ $a = -2.18729 + 0.34333I$ $b = -0.58191 - 1.32255I$	$-6.66575 + 2.77184I$	$-5.53927 - 4.58319I$
$u = -0.323694 + 0.583510I$ $a = -0.81002 + 2.90630I$ $b = -0.184279 + 1.140270I$	$-6.66575 - 1.28793I$	$-5.53927 + 2.34501I$
$u = -0.323694 + 0.583510I$ $a = -4.27663 - 3.61387I$ $b = 0.41189 - 1.47115I$	$-6.66575 - 1.28793I$	$-5.53927 + 2.34501I$
$u = -0.323694 + 0.583510I$ $a = 4.11785 + 4.41562I$ $b = 0.181553 + 1.290880I$	$-6.66575 + 2.77184I$	$-5.53927 - 4.58319I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.323694 - 0.583510I$ $a = -2.18729 - 0.34333I$ $b = -0.58191 + 1.32255I$	$-6.66575 - 2.77184I$	$-5.53927 + 4.58319I$
$u = -0.323694 - 0.583510I$ $a = -0.81002 - 2.90630I$ $b = -0.184279 - 1.140270I$	$-6.66575 + 1.28793I$	$-5.53927 - 2.34501I$
$u = -0.323694 - 0.583510I$ $a = -4.27663 + 3.61387I$ $b = 0.41189 + 1.47115I$	$-6.66575 + 1.28793I$	$-5.53927 - 2.34501I$
$u = -0.323694 - 0.583510I$ $a = 4.11785 - 4.41562I$ $b = 0.181553 - 1.290880I$	$-6.66575 - 2.77184I$	$-5.53927 + 4.58319I$
$u = -1.38823 + 0.36743I$ $a = 1.002740 + 0.157516I$ $b = -0.899581 + 0.768683I$	$3.68097 - 0.55463I$	$6.19194 - 2.44750I$
$u = -1.38823 + 0.36743I$ $a = 1.150210 + 0.262394I$ $b = -1.349990 - 0.139533I$	$3.68097 - 4.61439I$	$6.19194 + 4.48070I$
$u = -1.38823 + 0.36743I$ $a = -1.318500 + 0.350190I$ $b = 0.442958 - 1.080190I$	$3.68097 - 4.61439I$	$6.19194 + 4.48070I$
$u = -1.38823 + 0.36743I$ $a = -0.388078 - 0.318066I$ $b = 0.296789 + 0.626688I$	$3.68097 - 0.55463I$	$6.19194 - 2.44750I$
$u = -1.38823 - 0.36743I$ $a = 1.002740 - 0.157516I$ $b = -0.899581 - 0.768683I$	$3.68097 + 0.55463I$	$6.19194 + 2.44750I$
$u = -1.38823 - 0.36743I$ $a = 1.150210 - 0.262394I$ $b = -1.349990 + 0.139533I$	$3.68097 + 4.61439I$	$6.19194 - 4.48070I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.38823 - 0.36743I$ $a = -1.318500 - 0.350190I$ $b = 0.442958 + 1.080190I$	$3.68097 + 4.61439I$	$6.19194 - 4.48070I$
$u = -1.38823 - 0.36743I$ $a = -0.388078 + 0.318066I$ $b = 0.296789 - 0.626688I$	$3.68097 + 0.55463I$	$6.19194 + 2.44750I$
$u = 0.552641$ $a = 0.753677 + 0.114672I$ $b = -0.156468 + 1.382340I$	$-3.80862 - 2.02988I$	$7.42944 + 3.46410I$
$u = 0.552641$ $a = 0.753677 - 0.114672I$ $b = -0.156468 - 1.382340I$	$-3.80862 + 2.02988I$	$7.42944 - 3.46410I$
$u = 0.552641$ $a = 0.24741 + 1.61926I$ $b = 0.546490 - 0.706801I$	$-3.80862 - 2.02988I$	$7.42944 + 3.46410I$
$u = 0.552641$ $a = 0.24741 - 1.61926I$ $b = 0.546490 + 0.706801I$	$-3.80862 + 2.02988I$	$7.42944 - 3.46410I$
$u = 1.33508 + 0.61220I$ $a = 1.056630 - 0.199046I$ $b = -0.774609 - 1.057170I$	$1.83471 + 6.62127I$	$3.78570 - 2.11482I$
$u = 1.33508 + 0.61220I$ $a = 1.069070 - 0.482704I$ $b = -1.45883 - 0.04222I$	$1.83471 + 10.68100I$	$3.78570 - 9.04302I$
$u = 1.33508 + 0.61220I$ $a = -1.53253 - 0.02543I$ $b = 0.460172 + 1.181660I$	$1.83471 + 10.68100I$	$3.78570 - 9.04302I$
$u = 1.33508 + 0.61220I$ $a = -0.384837 + 0.051738I$ $b = 0.287156 - 0.377419I$	$1.83471 + 6.62127I$	$3.78570 - 2.11482I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.33508 - 0.61220I$ $a = 1.056630 + 0.199046I$ $b = -0.774609 + 1.057170I$	$1.83471 - 6.62127I$	$3.78570 + 2.11482I$
$u = 1.33508 - 0.61220I$ $a = 1.069070 + 0.482704I$ $b = -1.45883 + 0.04222I$	$1.83471 - 10.68100I$	$3.78570 + 9.04302I$
$u = 1.33508 - 0.61220I$ $a = -1.53253 + 0.02543I$ $b = 0.460172 - 1.181660I$	$1.83471 - 10.68100I$	$3.78570 + 9.04302I$
$u = 1.33508 - 0.61220I$ $a = -0.384837 - 0.051738I$ $b = 0.287156 + 0.377419I$	$1.83471 - 6.62127I$	$3.78570 + 2.11482I$

III.

$\boldsymbol{I^u_3 = \langle 2.61 \times 10^7 u^{15} + 1.95 \times 10^7 u^{14} + \cdots + 3.93 \times 10^7 b + 1.53 \times 10^6,\ 2.22 \times 10^8 u^{15} + 2.69 \times 10^8 u^{14} + \cdots + 3.93 \times 10^7 a + 2.49 \times 10^7,\ u^{16} + u^{15} + \cdots + 7u^2 + 1\rangle}$

(i) Arc colorings

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

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -5.63863u^{15} - 6.85527u^{14} + \cdots - 37.3060u - 0.633886 \\ -0.665376u^{15} - 0.496225u^{14} + \cdots - 3.75673u - 0.0389723 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 4.79895u^{15} + 4.13796u^{14} + \cdots + 13.0962u - 10.2774 \\ 0.824960u^{15} + 0.614372u^{14} + \cdots + 2.39162u - 0.704160 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -6.30401u^{15} - 7.35149u^{14} + \cdots - 41.0628u - 0.672858 \\ -0.665376u^{15} - 0.496225u^{14} + \cdots - 3.75673u - 0.0389723 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.839243u^{15} - 0.933409u^{14} + \cdots - 5.49869u - 0.251285 \\ -0.0768567u^{15} - 0.0612071u^{14} + \cdots - 0.173867u - 0.263317 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.471243u^{15} - 2.73305u^{14} + \cdots - 23.9979u - 20.9855 \\ -0.0384779u^{15} - 0.360948u^{14} + \cdots - 1.88190u - 2.17767 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -6.46359u^{15} - 7.46964u^{14} + \cdots - 39.6977u + 1.07027 \\ -0.665376u^{15} - 0.496225u^{14} + \cdots - 3.75673u - 0.0389723 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.698532u^{15} + 0.903889u^{14} + \cdots + 6.16407u + 0.0821341 \\ -0.140712u^{15} - 0.0295202u^{14} + \cdots + 0.665376u - 0.169151 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.839243u^{15} - 0.933409u^{14} + \cdots - 5.49869u - 0.251285 \\ -0.140712u^{15} - 0.0295202u^{14} + \cdots + 0.665376u - 0.169151 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u \\ u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{48637972}{39284803}u^{15} - \frac{69376959}{39284803}u^{14} + \cdots - \frac{938513428}{39284803}u - \frac{748031538}{39284803}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{16} - 11u^{15} + \cdots - 14u + 1$
c_2	$u^{16} + 5u^{15} + \cdots - 2u + 1$
c_3	$u^{16} - u^{15} + \cdots + 7u^2 + 1$
c_4	$u^{16} - 5u^{15} + \cdots + 2u + 1$
c_5, c_{11}	$u^{16} + 8u^{14} + \cdots + u + 1$
c_6, c_9	$u^{16} + 8u^{14} + \cdots - u + 1$
c_7	$u^{16} + u^{15} + \cdots + 7u^2 + 1$
c_8, c_{10}	$u^{16} + 5u^{13} + \cdots + u + 1$
c_{12}	$u^{16} - u^{15} + \cdots - 5u^3 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{16} - 7y^{15} + \cdots + 10y + 1$
c_2, c_4	$y^{16} - 11y^{15} + \cdots - 14y + 1$
c_3, c_7	$y^{16} - 3y^{15} + \cdots + 14y + 1$
c_5, c_6, c_9 c_{11}	$y^{16} + 16y^{15} + \cdots + 13y + 1$
c_8, c_{10}	$y^{16} + 10y^{14} + \cdots + 13y + 1$
c_{12}	$y^{16} + 13y^{15} + \cdots + 10y^2 + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.052370 + 0.093173I$ $a = 1.075460 + 0.282531I$ $b = -0.46470 - 1.41010I$	$-3.49545 + 0.50348I$	$2.71128 + 2.00573I$
$u = -1.052370 - 0.093173I$ $a = 1.075460 - 0.282531I$ $b = -0.46470 + 1.41010I$	$-3.49545 - 0.50348I$	$2.71128 - 2.00573I$
$u = -0.622840 + 0.925423I$ $a = 0.018270 - 0.618863I$ $b = -0.151940 - 0.386230I$	$-0.58808 + 1.31504I$	$8.80198 - 1.38883I$
$u = -0.622840 - 0.925423I$ $a = 0.018270 + 0.618863I$ $b = -0.151940 + 0.386230I$	$-0.58808 - 1.31504I$	$8.80198 + 1.38883I$
$u = 1.076510 + 0.354751I$ $a = 1.149490 - 0.358418I$ $b = -0.33038 - 1.49665I$	$-4.10605 + 5.12330I$	$1.79464 - 4.59761I$
$u = 1.076510 - 0.354751I$ $a = 1.149490 + 0.358418I$ $b = -0.33038 + 1.49665I$	$-4.10605 - 5.12330I$	$1.79464 + 4.59761I$
$u = 1.297280 + 0.478050I$ $a = -0.928035 + 0.220896I$ $b = 0.519486 + 0.406969I$	$4.10119 + 2.04067I$	$8.23547 - 2.43425I$
$u = 1.297280 - 0.478050I$ $a = -0.928035 - 0.220896I$ $b = 0.519486 - 0.406969I$	$4.10119 - 2.04067I$	$8.23547 + 2.43425I$
$u = -0.087688 + 0.579530I$ $a = -2.31031 - 0.56135I$ $b = -0.327826 - 1.216860I$	$-5.36775 + 1.79338I$	$0.34629 - 1.89080I$
$u = -0.087688 - 0.579530I$ $a = -2.31031 + 0.56135I$ $b = -0.327826 + 1.216860I$	$-5.36775 - 1.79338I$	$0.34629 + 1.89080I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.34186 + 0.69442I$ $a = -0.913689 - 0.152365I$ $b = 0.598222 - 0.683791I$	$1.85151 - 8.07513I$	$3.94739 + 7.62669I$
$u = -1.34186 - 0.69442I$ $a = -0.913689 + 0.152365I$ $b = 0.598222 + 0.683791I$	$1.85151 + 8.07513I$	$3.94739 - 7.62669I$
$u = 0.12375 + 1.58034I$ $a = -0.122869 + 0.244108I$ $b = -0.182452 + 1.029730I$	$-12.26790 - 0.74180I$	$-11.4456 - 12.3713I$
$u = 0.12375 - 1.58034I$ $a = -0.122869 - 0.244108I$ $b = -0.182452 - 1.029730I$	$-12.26790 + 0.74180I$	$-11.4456 + 12.3713I$
$u = 0.107210 + 0.370526I$ $a = 6.5317 - 13.1777I$ $b = 0.339598 - 1.296230I$	$-6.44646 - 2.13169I$	$-16.3914 - 13.4331I$
$u = 0.107210 - 0.370526I$ $a = 6.5317 + 13.1777I$ $b = 0.339598 + 1.296230I$	$-6.44646 + 2.13169I$	$-16.3914 + 13.4331I$

IV. $I_4^u = \langle 7.35 \times 10^7 b + 5.70 \times 10^6 a^{11} + \cdots + 1.01 \times 10^9 a - 2.04 \times 10^8,\ a^{12} - 4a^{11} + \cdots - 40a + 7,\ u - 1 \rangle$

(i) Arc colorings

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

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} a \\ -0.0774919a^{11} + 0.375771a^{10} + \cdots - 13.7916a + 2.77015 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.0658035a^{11} + 0.170020a^{10} + \cdots + 0.329527a + 0.457557 \\ 0.0326852a^{11} - 0.0584284a^{10} + \cdots - 0.529330a + 1.48093 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.0774919a^{11} + 0.375771a^{10} + \cdots - 12.7916a + 2.77015 \\ -0.0774919a^{11} + 0.375771a^{10} + \cdots - 13.7916a + 2.77015 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.115004a^{11} + 0.357585a^{10} + \cdots - 7.24169a + 1.58880 \\ 0.0276033a^{11} + 0.00213387a^{10} + \cdots - 3.14469a + 1.32247 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.0326852a^{11} + 0.0584284a^{10} + \cdots + 0.529330a - 1.48093 \\ -0.0984887a^{11} + 0.228448a^{10} + \cdots + 0.858857a - 3.02337 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.0192689a^{11} + 0.122254a^{10} + \cdots - 6.49712a + 1.88818 \\ -0.0977752a^{11} + 0.448397a^{10} + \cdots - 18.3971a + 4.85808 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.0276033a^{11} - 0.00213387a^{10} + \cdots + 3.14469a - 1.32247 \\ 0.0874004a^{11} - 0.359719a^{10} + \cdots + 10.3864a - 2.91127 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.115004a^{11} + 0.357585a^{10} + \cdots - 7.24169a + 1.58880 \\ -0.0874004a^{11} + 0.359719a^{10} + \cdots - 10.3864a + 2.91127 \end{pmatrix}$$

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{25416}{329755}a^{11} + \frac{161256}{329755}a^{10} + \cdots - \frac{8569836}{329755}a + \frac{3150062}{329755}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^3-2y^2-3y-1)^4$
c_2, c_4	$(y^3-2y^2+y-1)^4$
c_3, c_7	$(y-1)^{12}$
c_5, c_6, c_9 c_{11}	$y^{12}+12y^{11}+\cdots+180y+49$
c_8, c_{10}	$y^{12}+8y^{11}+\cdots+318y^2+1$
c_{12}	$(y^2+y+1)^6$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = 0.645260 + 0.761399I$ $b = -0.18361 + 1.40431I$	$-3.28987 - 2.02988I$	$4.00000 + 3.46410I$
$u = 1.00000$ $a = 0.645260 - 0.761399I$ $b = -0.18361 - 1.40431I$	$-3.28987 + 2.02988I$	$4.00000 - 3.46410I$
$u = 1.00000$ $a = -1.16974 + 0.94446I$ $b = 1.00173 - 1.11183I$	$-3.28987 - 2.02988I$	$4.00000 + 3.46410I$
$u = 1.00000$ $a = -1.16974 - 0.94446I$ $b = 1.00173 + 1.11183I$	$-3.28987 + 2.02988I$	$4.00000 - 3.46410I$
$u = 1.00000$ $a = 1.58114 + 0.42523I$ $b = -0.842500 + 0.098298I$	$-3.28987 + 2.02988I$	$4.00000 - 3.46410I$
$u = 1.00000$ $a = 1.58114 - 0.42523I$ $b = -0.842500 - 0.098298I$	$-3.28987 - 2.02988I$	$4.00000 + 3.46410I$
$u = 1.00000$ $a = 0.192943 + 0.264572I$ $b = -0.15305 - 1.67625I$	$-3.28987 + 2.02988I$	$4.00000 - 3.46410I$
$u = 1.00000$ $a = 0.192943 - 0.264572I$ $b = -0.15305 + 1.67625I$	$-3.28987 - 2.02988I$	$4.00000 + 3.46410I$
$u = 1.00000$ $a = 1.54661 + 0.66329I$ $b = -0.002722 - 0.821490I$	$-3.28987 - 2.02988I$	$4.00000 + 3.46410I$
$u = 1.00000$ $a = 1.54661 - 0.66329I$ $b = -0.002722 + 0.821490I$	$-3.28987 + 2.02988I$	$4.00000 - 3.46410I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -0.79622 + 1.78475I$ $b = 0.180141 - 1.048940I$	$-3.28987 - 2.02988I$	$4.00000 + 3.46410I$
$u = 1.00000$ $a = -0.79622 - 1.78475I$ $b = 0.180141 + 1.048940I$	$-3.28987 + 2.02988I$	$4.00000 - 3.46410I$

V. $I_1^v = \langle a,\ -8v^2 + b + 26v - 7,\ 4v^3 - 14v^2 + 7v - 1\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ 8v^2 - 26v + 7 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -4v^2 + 12v - 1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 8v^2 - 26v + 7 \\ 8v^2 - 26v + 7 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1 \\ -4v^2 + 14v - 7 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 4v^2 - 12v + 2 \\ 4v^2 - 12v + 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -8v^2 + 26v - 7 \\ -20v^2 + 64v - 16 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 4v^2 - 14v + 7 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} v - 1 \\ -4v^2 + 14v - 7 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -45v^2 + 150v - 53$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^3$
c_3, c_7	y^3
c_5, c_6, c_8 c_9, c_{10}, c_{11}	$y^3 + 4y^2 + 4y - 1$
c_{12}	$y^3 + y^2 + 13y - 4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 0.283866 + 0.068399I$ $a = 0$ $b = 0.22670 - 1.46771I$	$-11.08570 - 5.13794I$	$-13.8357 + 8.5124I$
$v = 0.283866 - 0.068399I$ $a = 0$ $b = 0.22670 + 1.46771I$	$-11.08570 + 5.13794I$	$-13.8357 - 8.5124I$
$v = 2.93227$ $a = 0$ $b = -0.453398$	-0.857735	-0.0786320

VI. $\boldsymbol{I_2^v = \langle a,\ b^4 - b^3 + 2b^2 - 2b + 1,\ v + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4b^3 - 4b$

(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, c_8 c_{10}	$u^4 - u^3 + 2u^2 - 2u + 1$
c_9, c_{11}	$u^4 + u^3 + 2u^2 + 2u + 1$
c_{12}	$(u^2 + u + 1)^2$

(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_8 c_9, c_{10}, c_{11}	$y^4+3y^3+2y^2+1$
c_{12}	$(y^2+y+1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = -1.00000$ $a = 0$ $b = 0.621744 + 0.440597I$	$-4.93480 + 2.02988I$	$-2.00000 - 3.46410I$
$v = -1.00000$ $a = 0$ $b = 0.621744 - 0.440597I$	$-4.93480 - 2.02988I$	$-2.00000 + 3.46410I$
$v = -1.00000$ $a = 0$ $b = -0.121744 + 1.306620I$	$-4.93480 - 2.02988I$	$-2.00000 + 3.46410I$
$v = -1.00000$ $a = 0$ $b = -0.121744 - 1.306620I$	$-4.93480 + 2.02988I$	$-2.00000 - 3.46410I$

VII. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^7)(u^3+2u^2+u+1)^4(u^{11}+4u^{10}+\cdots+11u+1)^4$ $\cdot(u^{16}-11u^{15}+\cdots-14u+1)(u^{34}+19u^{33}+\cdots+32880u+256)$
c_2	$(u-1)^7(u^3-u+1)^4$ $\cdot(u^{11}-2u^{10}+4u^8-2u^7-4u^6+5u^5+2u^4-5u^3+u^2+3u-1)^4$ $\cdot(u^{16}+5u^{15}+\cdots-2u+1)(u^{34}-5u^{33}+\cdots+204u-16)$
c_3	$u^7(u+1)^{12}$ $\cdot(u^{11}-2u^{10}-u^9+3u^8+u^7-2u^6+4u^5-11u^4+9u^3-u^2-2u+2)^4$ $\cdot(u^{16}-u^{15}+\cdots+7u^2+1)(u^{34}-6u^{33}+\cdots-1504u+128)$
c_4	$(u+1)^7(u^3-u+1)^4$ $\cdot(u^{11}-2u^{10}+4u^8-2u^7-4u^6+5u^5+2u^4-5u^3+u^2+3u-1)^4$ $\cdot(u^{16}-5u^{15}+\cdots+2u+1)(u^{34}-5u^{33}+\cdots+204u-16)$
c_5	$(u^3+2u+1)(u^4-u^3+2u^2-2u+1)(u^{12}+6u^{10}+\cdots-10u+7)$ $\cdot(u^{16}+8u^{14}+\cdots+u+1)(u^{34}+12u^{32}+\cdots-u-1)$ $\cdot(u^{44}-2u^{43}+\cdots+2932u+661)$
c_6	$(u^3+2u+1)(u^4-u^3+2u^2-2u+1)(u^{12}+6u^{10}+\cdots-10u+7)$ $\cdot(u^{16}+8u^{14}+\cdots-u+1)(u^{34}+12u^{32}+\cdots-u-1)$ $\cdot(u^{44}-2u^{43}+\cdots+2932u+661)$
c_7	$u^7(u+1)^{12}$ $\cdot(u^{11}-2u^{10}-u^9+3u^8+u^7-2u^6+4u^5-11u^4+9u^3-u^2-2u+2)^4$ $\cdot(u^{16}+u^{15}+\cdots+7u^2+1)(u^{34}-6u^{33}+\cdots-1504u+128)$
c_8, c_{10}	$(u^3+2u+1)(u^4-u^3+2u^2-2u+1)(u^{12}+4u^{11}+\cdots-4u+1)$ $\cdot(u^{16}+5u^{13}+\cdots+u+1)(u^{34}-8u^{32}+\cdots+11u+1)$ $\cdot(u^{44}+10u^{43}+\cdots+1758u+421)$
c_9	$(u^3+2u-1)(u^4+u^3+2u^2+2u+1)(u^{12}+6u^{10}+\cdots-10u+7)$ $\cdot(u^{16}+8u^{14}+\cdots-u+1)(u^{34}+12u^{32}+\cdots-u-1)$ $\cdot(u^{44}-2u^{43}+\cdots+2932u+661)$
c_{11}	$(u^3+2u-1)(u^4+u^3+2u^2+2u+1)(u^{12}+6u^{10}+\cdots-10u+7)$ $\cdot(u^{16}+8u^{14}+\cdots+u+1)(u^{34}+12u^{32}+\cdots-u-1)$ $\cdot(u^{44}-2u^{43}+\cdots+2932u+661)$
c_{12}	$((u^2+u+1)^{30})(u^3-3u^2+5u-2)(u^{16}-u^{15}+\cdots-5u^3+1)$ $\cdot(u^{34}-29u^{33}+\cdots-229376u+16384)$

VIII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^7)(y^3-2y^2-3y-1)^4(y^{11}+8y^{10}+\cdots+67y-1)^4$ $\cdot(y^{16}-7y^{15}+\cdots+10y+1)(y^{34}-3y^{33}+\cdots-9.59099\times10^8y+65536)$
c_2, c_4	$((y-1)^7)(y^3-2y^2+y-1)^4(y^{11}-4y^{10}+\cdots+11y-1)^4$ $\cdot(y^{16}-11y^{15}+\cdots-14y+1)(y^{34}-19y^{33}+\cdots-32880y+256)$
c_3, c_7	$y^7(y-1)^{12}(y^{11}-6y^{10}+\cdots+8y-4)^4(y^{16}-3y^{15}+\cdots+14y+1)$ $\cdot(y^{34}-12y^{33}+\cdots-388096y+16384)$
c_5, c_6, c_9 c_{11}	$(y^3+4y^2+4y-1)(y^4+3y^3+2y^2+1)(y^{12}+12y^{11}+\cdots+180y+49)$ $\cdot(y^{16}+16y^{15}+\cdots+13y+1)(y^{34}+24y^{33}+\cdots-y+1)$ $\cdot(y^{44}+30y^{43}+\cdots+6318180y+436921)$
c_8, c_{10}	$(y^3+4y^2+4y-1)(y^4+3y^3+2y^2+1)(y^{12}+8y^{11}+\cdots+318y^2+1)$ $\cdot(y^{16}+10y^{14}+\cdots+13y+1)(y^{34}-16y^{33}+\cdots-37y+1)$ $\cdot(y^{44}-2y^{43}+\cdots-1105128y+177241)$
c_{12}	$((y^2+y+1)^{30})(y^3+y^2+13y-4)(y^{16}+13y^{15}+\cdots+10y^2+1)$ $\cdot(y^{34}+15y^{33}+\cdots-536870912y+268435456)$