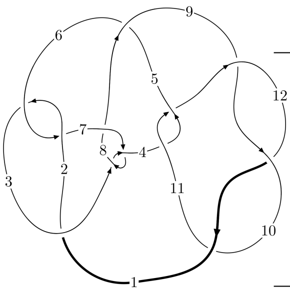
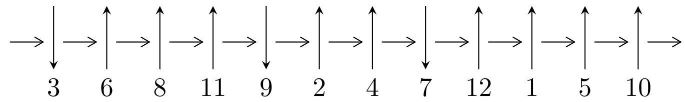
$12a_{0331}$ ($K12a_{0331}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -1.20578\times 10^{55}u^{43} + 2.72261\times 10^{53}u^{42} + \cdots + 2.20839\times 10^{56}b + 3.82813\times 10^{56},\\
& -2.53459\times 10^{56}u^{43} + 3.60015\times 10^{56}u^{42} + \cdots + 1.76671\times 10^{57}a - 8.03449\times 10^{57},\\
& u^{44} - 3u^{43} + \cdots + 48u - 64\rangle\\
I_2^u = \langle & -2.99662\times 10^{27}au^{31} + 3.45285\times 10^{27}u^{31} + \cdots - 2.16166\times 10^{28}a + 2.56649\times 10^{28},\\
& 1.55146\times 10^{23}au^{31} - 3.42612\times 10^{25}u^{31} + \cdots - 8.65692\times 10^{25}a + 2.42878\times 10^{26},\ u^{32} + u^{31} + \cdots - 4u + 8\\
I_3^u = \langle & u^9 - 2u^7 + u^5 + 2u^3 + b - u,\ u^9 + u^8 - 2u^7 - 3u^6 + 4u^4 + 4u^3 - u^2 + a - 3u - 1,\ u^{10} - 3u^8 + 4u^6 - u^4 -
\end{aligned}$$

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

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 128 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. $I_1^u = \langle -1.21 \times 10^{55} u^{43} + 2.72 \times 10^{53} u^{42} + \cdots + 2.21 \times 10^{56} b + 3.83 \times 10^{56},\ -2.53 \times 10^{56} u^{43} + 3.60 \times 10^{56} u^{42} + \cdots + 1.77 \times 10^{57} a - 8.03 \times 10^{57},\ u^{44} - 3u^{43} + \cdots + 48u - 64 \rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.143464u^{43} - 0.203777u^{42} + \cdots - 2.64743u + 4.54771 \\ 0.0546002u^{43} - 0.00123285u^{42} + \cdots - 3.22478u - 1.73345 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.175427u^{43} - 0.255448u^{42} + \cdots - 3.94058u + 6.06949 \\ -0.309915u^{43} + 0.609208u^{42} + \cdots - 5.06054u - 19.6604 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.0888638u^{43} - 0.202544u^{42} + \cdots + 0.577349u + 6.28116 \\ 0.0546002u^{43} - 0.00123285u^{42} + \cdots - 3.22478u - 1.73345 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.655567u^{43} + 1.17863u^{42} + \cdots - 3.12523u - 34.9827 \\ 0.525900u^{43} - 0.919790u^{42} + \cdots + 0.385297u + 25.9781 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.329361u^{43} + 0.580992u^{42} + \cdots - 2.08842u - 17.7466 \\ 0.412425u^{43} - 0.700514u^{42} + \cdots - 1.16828u + 18.8318 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.218186u^{43} - 0.385243u^{42} + \cdots - 0.618559u + 10.5245 \\ -0.437381u^{43} + 0.793391u^{42} + \cdots - 3.74379u - 24.4582 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.571987u^{43} - 1.16565u^{42} + \cdots + 8.28123u + 36.6401 \\ 0.409286u^{43} - 0.759210u^{42} + \cdots + 1.85925u + 22.1877 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.649605u^{43} - 1.17009u^{42} + \cdots + 4.76265u + 36.5187 \\ -0.587692u^{43} + 0.983287u^{42} + \cdots + 4.35683u - 26.2754 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 1.19362u^{43} - 2.33566u^{42} + \cdots + 21.5478u + 85.7392$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^{44} + 18u^{43} + \cdots + 11u + 1$
c_2, c_3, c_6 c_7	$u^{44} + 9u^{42} + \cdots - 3u + 1$
c_4, c_{11}	$u^{44} + 3u^{43} + \cdots - 48u - 64$
c_5	$u^{44} - 18u^{43} + \cdots - 28060u + 2284$
c_9, c_{10}, c_{12}	$u^{44} + 5u^{43} + \cdots - 11u - 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^{44} + 30y^{43} + \cdots - 117y + 1$
c_2, c_3, c_6 c_7	$y^{44} + 18y^{43} + \cdots + 11y + 1$
c_4, c_{11}	$y^{44} - 27y^{43} + \cdots - 8448y + 4096$
c_5	$y^{44} + 20y^{43} + \cdots - 118969272y + 5216656$
c_9, c_{10}, c_{12}	$y^{44} - 43y^{43} + \cdots - 337y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.877125 + 0.508540I$ $a = -0.830235 + 0.263996I$ $b = -0.552748 + 0.993827I$	$0.33144 - 5.53133I$	$8.20557 + 5.60912I$
$u = 0.877125 - 0.508540I$ $a = -0.830235 - 0.263996I$ $b = -0.552748 - 0.993827I$	$0.33144 + 5.53133I$	$8.20557 - 5.60912I$
$u = 0.551521 + 0.892173I$ $a = -0.37219 + 2.31116I$ $b = 0.518404 + 0.942737I$	$0.87743 + 2.97747I$	$7.43344 - 5.22549I$
$u = 0.551521 - 0.892173I$ $a = -0.37219 - 2.31116I$ $b = 0.518404 - 0.942737I$	$0.87743 - 2.97747I$	$7.43344 + 5.22549I$
$u = 0.918562 + 0.190781I$ $a = -0.06947 + 2.14622I$ $b = 0.493005 + 1.143320I$	$0.04036 + 8.34489I$	$9.07426 - 8.42771I$
$u = 0.918562 - 0.190781I$ $a = -0.06947 - 2.14622I$ $b = 0.493005 - 1.143320I$	$0.04036 - 8.34489I$	$9.07426 + 8.42771I$
$u = 0.777804 + 0.489896I$ $a = 0.447932 - 1.235890I$ $b = -0.107092 - 0.599664I$	$-1.23908 + 2.01870I$	$5.50350 - 5.95724I$
$u = 0.777804 - 0.489896I$ $a = 0.447932 + 1.235890I$ $b = -0.107092 + 0.599664I$	$-1.23908 - 2.01870I$	$5.50350 + 5.95724I$
$u = -0.553221 + 0.710651I$ $a = -0.18276 - 2.17276I$ $b = 0.513691 - 1.049330I$	$-3.34564 - 6.15513I$	$1.18529 + 7.20651I$
$u = -0.553221 - 0.710651I$ $a = -0.18276 + 2.17276I$ $b = 0.513691 + 1.049330I$	$-3.34564 + 6.15513I$	$1.18529 - 7.20651I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.939623 + 0.583661I$ $a = -0.850904 - 1.023730I$ $b = -0.456389 - 0.953909I$	$-2.18540 + 1.24012I$	$4.01532 - 2.37646I$
$u = -0.939623 - 0.583661I$ $a = -0.850904 + 1.023730I$ $b = -0.456389 + 0.953909I$	$-2.18540 - 1.24012I$	$4.01532 + 2.37646I$
$u = -1.121990 + 0.460726I$ $a = 0.18892 + 1.42239I$ $b = -0.139239 + 0.731129I$	$3.74404 - 4.98999I$	$12.7872 + 7.5818I$
$u = -1.121990 - 0.460726I$ $a = 0.18892 - 1.42239I$ $b = -0.139239 - 0.731129I$	$3.74404 + 4.98999I$	$12.7872 - 7.5818I$
$u = 1.210230 + 0.107374I$ $a = 1.233610 - 0.619919I$ $b = -0.644818 - 1.118720I$	$2.28709 + 7.54168I$	$8.78911 - 4.76693I$
$u = 1.210230 - 0.107374I$ $a = 1.233610 + 0.619919I$ $b = -0.644818 + 1.118720I$	$2.28709 - 7.54168I$	$8.78911 + 4.76693I$
$u = 1.220140 + 0.130546I$ $a = -0.879775 + 0.046540I$ $b = 0.791200 + 0.653166I$	$5.30527 + 3.52676I$	$12.39571 - 5.60505I$
$u = 1.220140 - 0.130546I$ $a = -0.879775 - 0.046540I$ $b = 0.791200 - 0.653166I$	$5.30527 - 3.52676I$	$12.39571 + 5.60505I$
$u = 1.22786$ $a = -0.226705$ $b = -0.764455$	6.46619	15.1390
$u = -1.221210 + 0.277116I$ $a = -0.290071 - 0.491123I$ $b = 0.815287 + 0.556119I$	$4.99655 - 1.77857I$	$12.03283 + 0.90771I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.221210-0.277116I$ $a=-0.290071+0.491123I$ $b=\ \ 0.815287-0.556119I$	$4.99655+1.77857I$	$12.03283-0.90771I$
$u=-0.187852+0.707638I$ $a=-0.10739+2.04695I$ $b=\ \ 0.584108+1.123780I$	$-2.10344+8.47320I$	$0.86513-7.32488I$
$u=-0.187852-0.707638I$ $a=-0.10739-2.04695I$ $b=\ \ 0.584108-1.123780I$	$-2.10344-8.47320I$	$0.86513+7.32488I$
$u=\ \ 0.077200+1.270820I$ $a=-0.344452-0.637993I$ $b=-0.813481-0.606549I$	$7.29308+0.83298I$	$12.93302-2.35138I$
$u=\ \ 0.077200-1.270820I$ $a=-0.344452+0.637993I$ $b=-0.813481+0.606549I$	$7.29308-0.83298I$	$12.93302+2.35138I$
$u=\ \ 1.147950+0.576653I$ $a=-0.63200+1.38012I$ $b=-0.366262+0.944615I$	$2.90580+2.45908I$	$8.37655+2.48976I$
$u=\ \ 1.147950-0.576653I$ $a=-0.63200-1.38012I$ $b=-0.366262-0.944615I$	$2.90580-2.45908I$	$8.37655-2.48976I$
$u=-0.373154+0.590810I$ $a=\ \ 1.32152+1.14412I$ $b=\ \ 0.140186+0.443282I$	$1.43845+0.81939I$	$7.07317-0.59629I$
$u=-0.373154-0.590810I$ $a=\ \ 1.32152-1.14412I$ $b=\ \ 0.140186-0.443282I$	$1.43845-0.81939I$	$7.07317+0.59629I$
$u=\ \ 0.286301+1.271350I$ $a=-0.06998-1.96322I$ $b=\ \ 0.646714-1.143430I$	$3.83652-10.39040I$	$6.00000+6.99388I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.286301 - 1.271350I$ $a = -0.06998 + 1.96322I$ $b = 0.646714 + 1.143430I$	$3.83652 + 10.39040I$	$6.00000 - 6.99388I$
$u = -1.232470 + 0.449409I$ $a = 1.48422 + 1.42635I$ $b = -0.636544 + 1.161000I$	$1.13812 - 12.94230I$	$6.00000 + 9.65030I$
$u = -1.232470 - 0.449409I$ $a = 1.48422 - 1.42635I$ $b = -0.636544 - 1.161000I$	$1.13812 + 12.94230I$	$6.00000 - 9.65030I$
$u = -0.572137$ $a = 0.404331$ $b = -0.317872$	0.742706	14.0290
$u = -0.041980 + 0.544402I$ $a = -0.201901 + 0.667917I$ $b = -0.626567 + 0.580076I$	$1.43276 - 1.29168I$	$5.31163 + 3.20971I$
$u = -0.041980 - 0.544402I$ $a = -0.201901 - 0.667917I$ $b = -0.626567 - 0.580076I$	$1.43276 + 1.29168I$	$5.31163 - 3.20971I$
$u = 1.37733 + 0.68948I$ $a = 1.13789 - 1.81742I$ $b = -0.643082 - 1.192500I$	$7.3537 + 17.3599I$	0
$u = 1.37733 - 0.68948I$ $a = 1.13789 + 1.81742I$ $b = -0.643082 + 1.192500I$	$7.3537 - 17.3599I$	0
$u = 1.44068 + 0.58329I$ $a = 0.168597 + 0.266784I$ $b = 0.891958 - 0.507832I$	$11.72660 + 5.76056I$	0
$u = 1.44068 - 0.58329I$ $a = 0.168597 - 0.266784I$ $b = 0.891958 + 0.507832I$	$11.72660 - 5.76056I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.53910 + 0.28678I$ $a = 0.364929 - 0.791054I$ $b = -0.714050 - 1.079210I$	$10.37340 + 4.75111I$	0
$u = -1.53910 - 0.28678I$ $a = 0.364929 + 0.791054I$ $b = -0.714050 + 1.079210I$	$10.37340 - 4.75111I$	0
$u = -1.50213 + 0.47642I$ $a = -0.542791 - 0.639449I$ $b = 0.846882 - 0.739073I$	$12.5656 - 7.1187I$	0
$u = -1.50213 - 0.47642I$ $a = -0.542791 + 0.639449I$ $b = 0.846882 + 0.739073I$	$12.5656 + 7.1187I$	0

II.

$\boldsymbol{I_2^u = \langle -3.00\times 10^{27}au^{31}+3.45\times 10^{27}u^{31}+\cdots-2.16\times 10^{28}a+2.57\times 10^{28},\ 1.55\times 10^{23}au^{31}-3.43\times 10^{25}u^{31}+\cdots-8.66\times 10^{25}a+2.43\times 10^{26},\ u^{32}+u^{31}+\cdots-4u+8\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} a \\ 2.08262au^{31} - 2.39969u^{31} + \cdots + 15.0233a - 17.8368 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -3.47308au^{31} - 0.402645u^{31} + \cdots - 21.9512a + 5.83712 \\ 4.59499au^{31} - 0.207407u^{31} + \cdots + 30.2057a - 1.17201 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -2.08262au^{31} + 2.39969u^{31} + \cdots - 14.0233a + 17.8368 \\ 2.08262au^{31} - 2.39969u^{31} + \cdots + 15.0233a - 17.8368 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 7.54748u^{31} - 1.20115u^{30} + \cdots - 67.8623u + 47.3131 \\ -5.97373u^{31} + 1.04734u^{30} + \cdots + 53.1575u - 38.4575 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 3.55221u^{31} - 0.611351u^{30} + \cdots - 33.0310u + 22.4678 \\ -4.23845u^{31} + 0.712986u^{30} + \cdots + 37.6864u - 26.6223 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -2.80108u^{31} + 0.304585u^{30} + \cdots + 25.6455u - 15.7816 \\ 4.74639u^{31} - 0.896566u^{30} + \cdots - 42.2168u + 31.5315 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -2.39969au^{31} - 3.10645u^{31} + \cdots - 17.8368a - 27.5448 \\ 1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 5.78721u^{31} - 1.13313u^{30} + \cdots - 51.3179u + 39.9500 \\ -5.87276u^{31} + 1.39777u^{30} + \cdots + 51.5961u - 39.7880 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{1102578123913480039729 2311}{600781964460913315981901 2}u^{31} - \frac{454738794945705104775118 7}{600781964460913315981901 2}u^{30} + \cdots - \frac{277128977151673417421927 75}{300390982230456657990950 6}u + \frac{379082389384665713101987 51}{150195491115228328995475 3}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^{64} + 34u^{63} + \cdots + 2888u + 289$
c_2, c_3, c_6 c_7	$u^{64} - 2u^{63} + \cdots + 6u + 17$
c_4, c_{11}	$(u^{32} - u^{31} + \cdots + 4u + 8)^2$
c_5	$(u^{32} + 6u^{31} + \cdots - 29u + 19)^2$
c_9, c_{10}, c_{12}	$(u^{32} + 4u^{31} + \cdots - 2u - 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^{64} - 10y^{63} + \cdots + 2113164y + 83521$
c_2, c_3, c_6 c_7	$y^{64} + 34y^{63} + \cdots + 2888y + 289$
c_4, c_{11}	$(y^{32} - 21y^{31} + \cdots - 400y + 64)^2$
c_5	$(y^{32} + 18y^{31} + \cdots - 14597y + 361)^2$
c_9, c_{10}, c_{12}	$(y^{32} - 32y^{31} + \cdots + 10y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.994786 + 0.117498I$ $a = 0.605972 - 0.777809I$ $b = -0.086371 - 1.233020I$	$-1.56769 + 0.51232I$	$8.14141 + 0.14369I$
$u = 0.994786 + 0.117498I$ $a = 1.64444 - 1.08920I$ $b = -0.371286 + 0.809217I$	$-1.56769 + 0.51232I$	$8.14141 + 0.14369I$
$u = 0.994786 - 0.117498I$ $a = 0.605972 + 0.777809I$ $b = -0.086371 + 1.233020I$	$-1.56769 - 0.51232I$	$8.14141 - 0.14369I$
$u = 0.994786 - 0.117498I$ $a = 1.64444 + 1.08920I$ $b = -0.371286 - 0.809217I$	$-1.56769 - 0.51232I$	$8.14141 - 0.14369I$
$u = 1.06664$ $a = -0.57970 + 2.22749I$ $b = 0.386184 + 1.203090I$	-0.726839	7.36180
$u = 1.06664$ $a = -0.57970 - 2.22749I$ $b = 0.386184 - 1.203090I$	-0.726839	7.36180
$u = -1.080820 + 0.181795I$ $a = 0.410379 + 0.315421I$ $b = 0.704804 + 0.067726I$	$2.97866 - 3.96490I$	$11.15642 + 4.13069I$
$u = -1.080820 + 0.181795I$ $a = 0.31340 + 1.97047I$ $b = -0.382987 + 1.136630I$	$2.97866 - 3.96490I$	$11.15642 + 4.13069I$
$u = -1.080820 - 0.181795I$ $a = 0.410379 - 0.315421I$ $b = 0.704804 - 0.067726I$	$2.97866 + 3.96490I$	$11.15642 - 4.13069I$
$u = -1.080820 - 0.181795I$ $a = 0.31340 - 1.97047I$ $b = -0.382987 - 1.136630I$	$2.97866 + 3.96490I$	$11.15642 - 4.13069I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.134937 + 1.098550I$ $a = -1.05581 - 1.06392I$ $b = 0.438430 - 0.887152I$	$0.19293 - 1.78898I$	$7.34736 + 3.66370I$
$u = 0.134937 + 1.098550I$ $a = -0.09148 + 2.94336I$ $b = 0.134755 + 1.267700I$	$0.19293 - 1.78898I$	$7.34736 + 3.66370I$
$u = 0.134937 - 1.098550I$ $a = -1.05581 + 1.06392I$ $b = 0.438430 + 0.887152I$	$0.19293 + 1.78898I$	$7.34736 - 3.66370I$
$u = 0.134937 - 1.098550I$ $a = -0.09148 - 2.94336I$ $b = 0.134755 - 1.267700I$	$0.19293 + 1.78898I$	$7.34736 - 3.66370I$
$u = -0.636893 + 0.594211I$ $a = 1.273170 + 0.270032I$ $b = 0.455758 + 0.730375I$	$1.60801 + 1.11555I$	$10.11098 + 0.26189I$
$u = -0.636893 + 0.594211I$ $a = 0.73961 + 1.69841I$ $b = -0.501791 + 0.546256I$	$1.60801 + 1.11555I$	$10.11098 + 0.26189I$
$u = -0.636893 - 0.594211I$ $a = 1.273170 - 0.270032I$ $b = 0.455758 - 0.730375I$	$1.60801 - 1.11555I$	$10.11098 - 0.26189I$
$u = -0.636893 - 0.594211I$ $a = 0.73961 - 1.69841I$ $b = -0.501791 - 0.546256I$	$1.60801 - 1.11555I$	$10.11098 - 0.26189I$
$u = -1.100670 + 0.347474I$ $a = -0.692111 - 1.106880I$ $b = -0.174423 - 1.282110I$	$-2.17989 - 4.05552I$	$5.42840 + 6.80075I$
$u = -1.100670 + 0.347474I$ $a = 2.31612 + 0.53329I$ $b = -0.463156 + 0.945799I$	$-2.17989 - 4.05552I$	$5.42840 + 6.80075I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.100670 - 0.347474I$ $a = -0.692111 + 1.106880I$ $b = -0.174423 + 1.282110I$	$-2.17989 + 4.05552I$	$5.42840 - 6.80075I$
$u = -1.100670 - 0.347474I$ $a = 2.31612 - 0.53329I$ $b = -0.463156 - 0.945799I$	$-2.17989 + 4.05552I$	$5.42840 - 6.80075I$
$u = 0.646992 + 0.531527I$ $a = 0.519557 - 0.623716I$ $b = 0.433001 - 0.304309I$	$-1.44328 + 2.03195I$	$4.06352 - 4.09496I$
$u = 0.646992 + 0.531527I$ $a = 0.56058 - 1.76408I$ $b = -0.311585 - 0.887175I$	$-1.44328 + 2.03195I$	$4.06352 - 4.09496I$
$u = 0.646992 - 0.531527I$ $a = 0.519557 + 0.623716I$ $b = 0.433001 + 0.304309I$	$-1.44328 - 2.03195I$	$4.06352 + 4.09496I$
$u = 0.646992 - 0.531527I$ $a = 0.56058 + 1.76408I$ $b = -0.311585 + 0.887175I$	$-1.44328 - 2.03195I$	$4.06352 + 4.09496I$
$u = -1.202960 + 0.001367I$ $a = -1.087730 - 0.207618I$ $b = 0.670268 - 0.984132I$	$4.30187 - 1.96238I$	$11.59391 + 0.38403I$
$u = -1.202960 + 0.001367I$ $a = 0.589667 + 0.223844I$ $b = -0.860542 - 0.449534I$	$4.30187 - 1.96238I$	$11.59391 + 0.38403I$
$u = -1.202960 - 0.001367I$ $a = -1.087730 + 0.207618I$ $b = 0.670268 + 0.984132I$	$4.30187 + 1.96238I$	$11.59391 - 0.38403I$
$u = -1.202960 - 0.001367I$ $a = 0.589667 - 0.223844I$ $b = -0.860542 + 0.449534I$	$4.30187 + 1.96238I$	$11.59391 - 0.38403I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.198859 + 1.266490I$ $a = 0.609392 - 0.394183I$ $b = 0.892109 - 0.416609I$	$6.03039 + 4.72345I$	$11.29654 - 3.13438I$
$u = -0.198859 + 1.266490I$ $a = 0.11900 - 1.60692I$ $b = -0.672303 - 1.023730I$	$6.03039 + 4.72345I$	$11.29654 - 3.13438I$
$u = -0.198859 - 1.266490I$ $a = 0.609392 + 0.394183I$ $b = 0.892109 + 0.416609I$	$6.03039 - 4.72345I$	$11.29654 + 3.13438I$
$u = -0.198859 - 1.266490I$ $a = 0.11900 + 1.60692I$ $b = -0.672303 + 1.023730I$	$6.03039 - 4.72345I$	$11.29654 + 3.13438I$
$u = 1.227290 + 0.381073I$ $a = 0.026410 - 0.616452I$ $b = -0.902498 + 0.379655I$	$3.49706 + 7.28997I$	$9.63030 - 6.08966I$
$u = 1.227290 + 0.381073I$ $a = -1.48730 + 1.05175I$ $b = 0.657960 + 1.053360I$	$3.49706 + 7.28997I$	$9.63030 - 6.08966I$
$u = 1.227290 - 0.381073I$ $a = 0.026410 + 0.616452I$ $b = -0.902498 - 0.379655I$	$3.49706 - 7.28997I$	$9.63030 + 6.08966I$
$u = 1.227290 - 0.381073I$ $a = -1.48730 - 1.05175I$ $b = 0.657960 - 1.053360I$	$3.49706 - 7.28997I$	$9.63030 + 6.08966I$
$u = 0.151614 + 0.623104I$ $a = 0.575026 + 0.389652I$ $b = 0.772697 + 0.348527I$	$0.16780 - 3.36417I$	$3.62130 + 3.50479I$
$u = 0.151614 + 0.623104I$ $a = 0.25504 + 1.68992I$ $b = -0.557905 + 1.003080I$	$0.16780 - 3.36417I$	$3.62130 + 3.50479I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.151614 - 0.623104I$ $a = 0.575026 - 0.389652I$ $b = 0.772697 - 0.348527I$	$0.16780 + 3.36417I$	$3.62130 - 3.50479I$
$u = 0.151614 - 0.623104I$ $a = 0.25504 - 1.68992I$ $b = -0.557905 - 1.003080I$	$0.16780 + 3.36417I$	$3.62130 - 3.50479I$
$u = -0.313036 + 0.506372I$ $a = -1.29037 + 2.02439I$ $b = 0.333105 + 1.047930I$	$-4.53431 + 0.51964I$	$-2.41959 - 1.56914I$
$u = -0.313036 + 0.506372I$ $a = -0.77520 - 2.85106I$ $b = 0.236452 - 1.173590I$	$-4.53431 + 0.51964I$	$-2.41959 - 1.56914I$
$u = -0.313036 - 0.506372I$ $a = -1.29037 - 2.02439I$ $b = 0.333105 - 1.047930I$	$-4.53431 - 0.51964I$	$-2.41959 + 1.56914I$
$u = -0.313036 - 0.506372I$ $a = -0.77520 + 2.85106I$ $b = 0.236452 + 1.173590I$	$-4.53431 - 0.51964I$	$-2.41959 + 1.56914I$
$u = -1.36499 + 0.44637I$ $a = 0.602581 + 0.409536I$ $b = -0.524339 - 0.670875I$	$5.04731 - 3.47045I$	$10.19300 + 0.53804I$
$u = -1.36499 + 0.44637I$ $a = 0.49345 + 1.70348I$ $b = -0.009584 + 1.306260I$	$5.04731 - 3.47045I$	$10.19300 + 0.53804I$
$u = -1.36499 - 0.44637I$ $a = 0.602581 - 0.409536I$ $b = -0.524339 + 0.670875I$	$5.04731 + 3.47045I$	$10.19300 - 0.53804I$
$u = -1.36499 - 0.44637I$ $a = 0.49345 - 1.70348I$ $b = -0.009584 - 1.306260I$	$5.04731 + 3.47045I$	$10.19300 - 0.53804I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.35714 + 0.57417I$ $a = -0.60974 + 1.69144I$ $b = -0.195124 + 1.338750I$	$4.07948 + 7.82848I$	$8.18330 - 6.10894I$
$u = 1.35714 + 0.57417I$ $a = 1.62920 - 1.07081I$ $b = -0.542275 - 0.975573I$	$4.07948 + 7.82848I$	$8.18330 - 6.10894I$
$u = 1.35714 - 0.57417I$ $a = -0.60974 - 1.69144I$ $b = -0.195124 - 1.338750I$	$4.07948 - 7.82848I$	$8.18330 + 6.10894I$
$u = 1.35714 - 0.57417I$ $a = 1.62920 + 1.07081I$ $b = -0.542275 + 0.975573I$	$4.07948 - 7.82848I$	$8.18330 + 6.10894I$
$u = 0.476060$ $a = 4.34064 + 4.91932I$ $b = -0.135427 - 1.027140I$	-2.06962	14.0180
$u = 0.476060$ $a = 4.34064 - 4.91932I$ $b = -0.135427 + 1.027140I$	-2.06962	14.0180
$u = -1.40531 + 0.64765I$ $a = -0.341520 + 0.430658I$ $b = -0.957793 - 0.351336I$	$9.9177 - 11.5375I$	$11.79347 + 6.25344I$
$u = -1.40531 + 0.64765I$ $a = -1.11355 - 1.52043I$ $b = 0.676309 - 1.102780I$	$9.9177 - 11.5375I$	$11.79347 + 6.25344I$
$u = -1.40531 - 0.64765I$ $a = -0.341520 - 0.430658I$ $b = -0.957793 + 0.351336I$	$9.9177 + 11.5375I$	$11.79347 - 6.25344I$
$u = -1.40531 - 0.64765I$ $a = -1.11355 + 1.52043I$ $b = 0.676309 + 1.102780I$	$9.9177 + 11.5375I$	$11.79347 - 6.25344I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.51942 + 0.37951I$ $a = -0.285426 - 0.453571I$ $b = 0.761601 - 0.938114I$	$11.95810 + 1.18611I$	$13.66994 + 0.I$
$u = 1.51942 + 0.37951I$ $a = 0.286276 - 0.384305I$ $b = -0.904045 - 0.555037I$	$11.95810 + 1.18611I$	$13.66994 + 0.I$
$u = 1.51942 - 0.37951I$ $a = -0.285426 + 0.453571I$ $b = 0.761601 + 0.938114I$	$11.95810 - 1.18611I$	$13.66994 + 0.I$
$u = 1.51942 - 0.37951I$ $a = 0.286276 + 0.384305I$ $b = -0.904045 + 0.555037I$	$11.95810 - 1.18611I$	$13.66994 + 0.I$

III.

$$\boldsymbol{I_3^u = \langle u^9 - 2u^7 + u^5 + 2u^3 + b - u,\ u^9 + u^8 + \cdots + a - 1,\ u^{10} - 3u^8 + 4u^6 - u^4 - u^2 + 1\rangle}$$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^8 + 8u^6 - 8u^4 - 4u^2 + 4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.822375 + 0.339110I$ $a = 0.005676 - 0.212799I$ $b = -1.000000I$	$-2.96077 - 1.53058I$	$0.51511 + 4.43065I$
$u = -0.822375 - 0.339110I$ $a = 0.005676 + 0.212799I$ $b = 1.000000I$	$-2.96077 + 1.53058I$	$0.51511 - 4.43065I$
$u = 0.822375 + 0.339110I$ $a = 1.78720 - 1.99432I$ $b = -1.000000I$	$-2.96077 + 1.53058I$	$0.51511 - 4.43065I$
$u = 0.822375 - 0.339110I$ $a = 1.78720 + 1.99432I$ $b = 1.000000I$	$-2.96077 - 1.53058I$	$0.51511 + 4.43065I$
$u = 0.766826I$ $a = -1.70062 + 3.70062I$ $b = 1.000000I$	-0.888787	1.48110
$u = -0.766826I$ $a = -1.70062 - 3.70062I$ $b = -1.000000I$	-0.888787	1.48110
$u = -1.200150 + 0.455697I$ $a = 0.85660 + 1.94886I$ $b = 1.000000I$	$2.58269 - 4.40083I$	$4.74431 + 3.49859I$
$u = -1.200150 - 0.455697I$ $a = 0.85660 - 1.94886I$ $b = -1.000000I$	$2.58269 + 4.40083I$	$4.74431 - 3.49859I$
$u = 1.200150 + 0.455697I$ $a = 0.051139 + 1.143400I$ $b = 1.000000I$	$2.58269 + 4.40083I$	$4.74431 - 3.49859I$
$u = 1.200150 - 0.455697I$ $a = 0.051139 - 1.143400I$ $b = -1.000000I$	$2.58269 - 4.40083I$	$4.74431 + 3.49859I$

IV. $\boldsymbol{I_1^v = \langle a,\ 2v^3 + v^2 + b + 3v + 1,\ 2v^4 + 3v^3 + 4v^2 + 3v + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 10v^3 + 7v + 9$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$v = -0.173850 + 1.069070I$ $a = 0$ $b = -0.547424 - 0.585652I$	$2.62503 + 1.39709I$	$13.6914 - 3.7657I$
$v = -0.173850 - 1.069070I$ $a = 0$ $b = -0.547424 + 0.585652I$	$2.62503 - 1.39709I$	$13.6914 + 3.7657I$
$v = -0.576150 + 0.307015I$ $a = 0$ $b = 0.547424 - 1.120870I$	$-0.98010 - 7.64338I$	$4.68363 + 4.91712I$
$v = -0.576150 - 0.307015I$ $a = 0$ $b = 0.547424 + 1.120870I$	$-0.98010 + 7.64338I$	$4.68363 - 4.91712I$

V. $I_2^v = \langle a,\ v^2b + b^2 + bv - b - v,\ v^3 - v + 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4v^2 + v + 9$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^v	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 0.662359 + 0.562280I$ $a = 0$ $b = -0.498832 - 1.001300I$	$1.37919 + 2.82812I$	$9.17211 - 2.41717I$
$v = 0.662359 + 0.562280I$ $a = 0$ $b = 0.713912 - 0.305839I$	$1.37919 + 2.82812I$	$9.17211 - 2.41717I$
$v = 0.662359 - 0.562280I$ $a = 0$ $b = -0.498832 + 1.001300I$	$1.37919 - 2.82812I$	$9.17211 + 2.41717I$
$v = 0.662359 - 0.562280I$ $a = 0$ $b = 0.713912 + 0.305839I$	$1.37919 - 2.82812I$	$9.17211 + 2.41717I$
$v = -1.32472$ $a = 0$ $b = 0.284920 + 1.115140I$	-2.75839	0.655770
$v = -1.32472$ $a = 0$ $b = 0.284920 - 1.115140I$	-2.75839	0.655770

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^{10}(u^4-2u^3+3u^2-u+1)(u^6-3u^5+4u^4-2u^3+1)$ $\cdot(u^{44}+18u^{43}+\cdots+11u+1)(u^{64}+34u^{63}+\cdots+2888u+289)$
c_2, c_3	$(u^2+1)^5(u^4+u^2+u+1)(u^6-u^5+2u^4-2u^3+2u^2-2u+1)$ $\cdot(u^{44}+9u^{42}+\cdots-3u+1)(u^{64}-2u^{63}+\cdots+6u+17)$
c_4, c_{11}	$u^{10}(u^{10}-3u^8+\cdots-u^2+1)(u^{32}-u^{31}+\cdots+4u+8)^2$ $\cdot(u^{44}+3u^{43}+\cdots-48u-64)$
c_5	$((u^3-u^2+1)^2)(u^4+3u^3+\cdots+3u+2)(u^{10}+u^8+\cdots+3u^2+1)$ $\cdot((u^{32}+6u^{31}+\cdots-29u+19)^2)(u^{44}-18u^{43}+\cdots-28060u+2284)$
c_6, c_7	$(u^2+1)^5(u^4+u^2-u+1)(u^6+u^5+2u^4+2u^3+2u^2+2u+1)$ $\cdot(u^{44}+9u^{42}+\cdots-3u+1)(u^{64}-2u^{63}+\cdots+6u+17)$
c_8	$(u+1)^{10}(u^4+2u^3+3u^2+u+1)(u^6+3u^5+4u^4+2u^3+1)$ $\cdot(u^{44}+18u^{43}+\cdots+11u+1)(u^{64}+34u^{63}+\cdots+2888u+289)$
c_9, c_{10}	$((u+1)^{10})(u^5-u^4+\cdots+u+1)^2(u^{32}+4u^{31}+\cdots-2u-1)^2$ $\cdot(u^{44}+5u^{43}+\cdots-11u-4)$
c_{12}	$((u-1)^{10})(u^5+u^4+\cdots+u-1)^2(u^{32}+4u^{31}+\cdots-2u-1)^2$ $\cdot(u^{44}+5u^{43}+\cdots-11u-4)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_8	$(y-1)^{10}(y^4+2y^3+7y^2+5y+1)(y^6-y^5+4y^4-2y^3+8y^2+1)$ $\cdot\,(y^{44}+30y^{43}+\cdots-117y+1)$ $\cdot\,(y^{64}-10y^{63}+\cdots+2113164y+83521)$
c_2, c_3, c_6 c_7	$(y+1)^{10}(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot\,(y^{44}+18y^{43}+\cdots+11y+1)(y^{64}+34y^{63}+\cdots+2888y+289)$
c_4, c_{11}	$y^{10}(y^5-3y^4+\cdots-y+1)^2(y^{32}-21y^{31}+\cdots-400y+64)^2$ $\cdot\,(y^{44}-27y^{43}+\cdots-8448y+4096)$
c_5	$(y^3-y^2+2y-1)^2(y^4-y^3+2y^2+7y+4)$ $\cdot\,(y^5+y^4+8y^3+3y^2+3y+1)^2$ $\cdot\,(y^{32}+18y^{31}+\cdots-14597y+361)^2$ $\cdot\,(y^{44}+20y^{43}+\cdots-118969272y+5216656)$
c_9, c_{10}, c_{12}	$(y-1)^{10}(y^5-5y^4+8y^3-3y^2-y-1)^2$ $\cdot\,((y^{32}-32y^{31}+\cdots+10y+1)^2)(y^{44}-43y^{43}+\cdots-337y+16)$