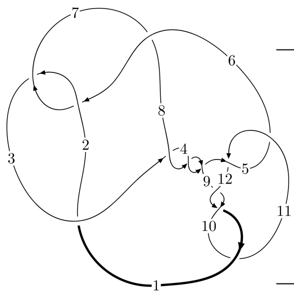
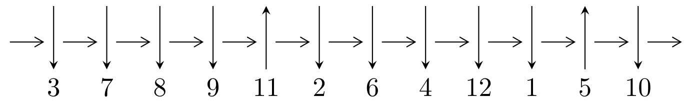
$12a_{0507}$ ($K12a_{0507}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{63} + u^{62} + \cdots + b + 1,\ u^{64} + 2u^{63} + \cdots + a + 2,\ u^{65} + 2u^{64} + \cdots + u + 1\rangle$$
$$I_2^u = \langle u^7 - u^5 + u^4 + u^3 + b + 1,\ u^7 - u^5 + u^4 + u^3 + a + 1,\ u^8 - u^7 - u^6 + 2u^5 + u^4 - 2u^3 + 2u - 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 73 representations.

[1]The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

[2]All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I.

$$\boldsymbol{I_1^u = \langle u^{63} + u^{62} + \cdots + b + 1,\ u^{64} + 2u^{63} + \cdots + a + 2,\ u^{65} + 2u^{64} + \cdots + u + 1\rangle}$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^3 \\ -u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^8 + u^6 - u^4 + 1 \\ -u^8 + 2u^6 - 2u^4 + 2u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^{13} - 2u^{11} + 3u^9 - 2u^7 - u \\ u^{13} - 3u^{11} + 5u^9 - 6u^7 + 4u^5 - 3u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^{64} - 2u^{63} + \cdots + 6u - 2 \\ -u^{63} - u^{62} + \cdots + 2u - 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^{18} - 3u^{16} + 6u^{14} - 7u^{12} + 5u^{10} - 3u^8 - u^2 + 1 \\ u^{18} - 4u^{16} + 9u^{14} - 14u^{12} + 15u^{10} - 14u^8 + 10u^6 - 6u^4 + 3u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^{64} - u^{63} + \cdots + 7u - 2 \\ -u^{64} - u^{63} + \cdots + u - 1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^{64} + 11u^{62} + \cdots + 7u - 1 \\ -2u^{64} - u^{63} + \cdots + u - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 3u^{64} + 6u^{63} + \cdots - 13u - 3$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{65} + 24u^{64} + \cdots + 17u + 1$
c_2, c_6	$u^{65} - 2u^{64} + \cdots + u - 1$
c_3, c_4, c_8	$u^{65} + 2u^{64} + \cdots + 72u - 36$
c_5, c_{11}	$u^{65} + u^{64} + \cdots + 896u + 256$
c_9, c_{10}, c_{12}	$u^{65} - 9u^{64} + \cdots - 9u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^{65} + 36y^{64} + \cdots + 41y - 1$
c_2, c_6	$y^{65} - 24y^{64} + \cdots + 17y - 1$
c_3, c_4, c_8	$y^{65} - 72y^{64} + \cdots + 29736y - 1296$
c_5, c_{11}	$y^{65} + 51y^{64} + \cdots + 507904y - 65536$
c_9, c_{10}, c_{12}	$y^{65} - 69y^{64} + \cdots + 49y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.713224 + 0.687444I$ $a = -1.24609 - 1.61970I$ $b = -0.365613 - 1.272500I$	$1.29911 + 1.50054I$	$-6.43332 - 4.09954I$
$u = 0.713224 - 0.687444I$ $a = -1.24609 + 1.61970I$ $b = -0.365613 + 1.272500I$	$1.29911 - 1.50054I$	$-6.43332 + 4.09954I$
$u = -0.548659 + 0.822542I$ $a = 1.67765 - 1.87113I$ $b = 0.03464 - 1.54590I$	$-12.9972 - 8.8431I$	$-12.85103 + 3.48991I$
$u = -0.548659 - 0.822542I$ $a = 1.67765 + 1.87113I$ $b = 0.03464 + 1.54590I$	$-12.9972 + 8.8431I$	$-12.85103 - 3.48991I$
$u = 0.791470 + 0.591517I$ $a = 1.45052 + 0.22949I$ $b = 0.791445 - 0.191921I$	$-0.45144 - 1.99183I$	$-13.03479 + 1.78533I$
$u = 0.791470 - 0.591517I$ $a = 1.45052 - 0.22949I$ $b = 0.791445 + 0.191921I$	$-0.45144 + 1.99183I$	$-13.03479 - 1.78533I$
$u = -1.015680 + 0.168873I$ $a = 1.072100 + 0.272547I$ $b = 1.00409 - 1.15227I$	$-10.47320 + 4.58721I$	$-18.5571 - 4.5138I$
$u = -1.015680 - 0.168873I$ $a = 1.072100 - 0.272547I$ $b = 1.00409 + 1.15227I$	$-10.47320 - 4.58721I$	$-18.5571 + 4.5138I$
$u = 0.700275 + 0.763983I$ $a = 0.48960 + 2.63017I$ $b = -0.64142 + 2.04420I$	$-4.38452 + 4.13952I$	$-11.02353 - 2.97070I$
$u = 0.700275 - 0.763983I$ $a = 0.48960 - 2.63017I$ $b = -0.64142 - 2.04420I$	$-4.38452 - 4.13952I$	$-11.02353 + 2.97070I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.533819 + 0.798870I$ $a = -1.46665 + 1.17530I$ $b = -0.159563 + 0.626147I$	$-5.93028 - 4.47135I$	$-11.14289 + 3.00215I$
$u = -0.533819 - 0.798870I$ $a = -1.46665 - 1.17530I$ $b = -0.159563 - 0.626147I$	$-5.93028 + 4.47135I$	$-11.14289 - 3.00215I$
$u = 0.518412 + 0.795387I$ $a = -1.70961 - 0.08232I$ $b = -0.94816 - 1.34212I$	$-8.23637 + 1.60432I$	$-12.14095 - 0.18134I$
$u = 0.518412 - 0.795387I$ $a = -1.70961 + 0.08232I$ $b = -0.94816 + 1.34212I$	$-8.23637 - 1.60432I$	$-12.14095 + 0.18134I$
$u = -0.812099 + 0.670235I$ $a = 1.52706 + 0.04285I$ $b = 1.43769 - 0.56681I$	$2.51447 + 2.05945I$	$0. - 3.62781I$
$u = -0.812099 - 0.670235I$ $a = 1.52706 - 0.04285I$ $b = 1.43769 + 0.56681I$	$2.51447 - 2.05945I$	$0. + 3.62781I$
$u = -0.705301 + 0.621394I$ $a = -1.92385 + 0.84589I$ $b = -1.55110 + 1.65367I$	$-1.222500 + 0.017209I$	$-9.24300 - 1.12644I$
$u = -0.705301 - 0.621394I$ $a = -1.92385 - 0.84589I$ $b = -1.55110 - 1.65367I$	$-1.222500 - 0.017209I$	$-9.24300 + 1.12644I$
$u = 0.937657$ $a = -1.59986$ $b = -0.575570$	-5.51198	-17.1080
$u = -0.505383 + 0.783995I$ $a = 0.778262 - 0.689429I$ $b = -0.327984 + 0.239802I$	$-6.10999 + 1.30884I$	$-11.57224 - 2.61156I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.505383 - 0.783995I$ $a = 0.778262 + 0.689429I$ $b = -0.327984 - 0.239802I$	$-6.10999 - 1.30884I$	$-11.57224 + 2.61156I$
$u = 0.552421 + 0.745317I$ $a = 0.802012 - 0.057028I$ $b = 0.441507 + 0.474951I$	$-1.66866 + 1.26457I$	$-4.48163 - 0.64966I$
$u = 0.552421 - 0.745317I$ $a = 0.802012 + 0.057028I$ $b = 0.441507 - 0.474951I$	$-1.66866 - 1.26457I$	$-4.48163 + 0.64966I$
$u = -0.921663 + 0.079540I$ $a = -0.505185 + 0.420325I$ $b = -0.43418 + 1.48058I$	$-3.61711 + 2.05218I$	$-17.0578 - 5.0395I$
$u = -0.921663 - 0.079540I$ $a = -0.505185 - 0.420325I$ $b = -0.43418 - 1.48058I$	$-3.61711 - 2.05218I$	$-17.0578 + 5.0395I$
$u = -0.467653 + 0.791706I$ $a = 0.021320 + 0.804749I$ $b = 1.170190 - 0.600782I$	$-13.4836 + 5.4777I$	$-13.28643 - 3.27596I$
$u = -0.467653 - 0.791706I$ $a = 0.021320 - 0.804749I$ $b = 1.170190 + 0.600782I$	$-13.4836 - 5.4777I$	$-13.28643 + 3.27596I$
$u = 0.984595 + 0.489919I$ $a = 0.486559 - 0.702071I$ $b = 1.188930 + 0.454218I$	$-8.70414 - 1.49648I$	0
$u = 0.984595 - 0.489919I$ $a = 0.486559 + 0.702071I$ $b = 1.188930 - 0.454218I$	$-8.70414 + 1.49648I$	0
$u = 0.923412 + 0.605274I$ $a = -0.457168 - 0.927717I$ $b = -0.76064 - 1.67724I$	$-0.89013 - 2.73765I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.923412 - 0.605274I$ $a = -0.457168 + 0.927717I$ $b = -0.76064 + 1.67724I$	$-0.89013 + 2.73765I$	0
$u = -0.888492 + 0.663349I$ $a = -0.41584 + 1.37057I$ $b = 0.137087 + 1.392720I$	$2.27977 + 3.10358I$	0
$u = -0.888492 - 0.663349I$ $a = -0.41584 - 1.37057I$ $b = 0.137087 - 1.392720I$	$2.27977 - 3.10358I$	0
$u = -1.11106$ $a = 0.266855$ $b = -0.278254$	-7.21985	-10.5080
$u = -0.858807 + 0.738316I$ $a = -1.78012 - 2.04437I$ $b = -2.43706 - 1.24263I$	$-1.89391 + 2.79805I$	0
$u = -0.858807 - 0.738316I$ $a = -1.78012 + 2.04437I$ $b = -2.43706 + 1.24263I$	$-1.89391 - 2.79805I$	0
$u = 1.146070 + 0.010400I$ $a = -0.399146 - 0.884665I$ $b = -0.22151 - 2.08621I$	$-11.82220 - 2.96438I$	0
$u = 1.146070 - 0.010400I$ $a = -0.399146 + 0.884665I$ $b = -0.22151 + 2.08621I$	$-11.82220 + 2.96438I$	0
$u = -0.955422 + 0.633656I$ $a = 1.50663 - 1.77636I$ $b = 0.69599 - 1.98085I$	$-1.98303 + 4.94470I$	0
$u = -0.955422 - 0.633656I$ $a = 1.50663 + 1.77636I$ $b = 0.69599 + 1.98085I$	$-1.98303 - 4.94470I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.14899$ $a=-0.795555$ $b=\ \ 0.455262$	-14.0593	-18.0700
$u=\ \ 1.156610+0.029881I$ $a=\ \ 0.959308+0.424441I$ $b=\ \ 0.45584+1.79793I$	$-19.1194-7.3744I$	0
$u=\ \ 1.156610-0.029881I$ $a=\ \ 0.959308-0.424441I$ $b=\ \ 0.45584-1.79793I$	$-19.1194+7.3744I$	0
$u=\ \ 0.956552+0.664807I$ $a=\ \ 1.79937+0.87406I$ $b=\ \ 1.97712+1.72485I$	$0.56939-6.73062I$	0
$u=\ \ 0.956552-0.664807I$ $a=\ \ 1.79937-0.87406I$ $b=\ \ 1.97712-1.72485I$	$0.56939+6.73062I$	0
$u=\ \ 0.981422+0.702007I$ $a=-2.70793-0.03543I$ $b=-3.06189-1.09293I$	$-5.22876-9.69725I$	0
$u=\ \ 0.981422-0.702007I$ $a=-2.70793+0.03543I$ $b=-3.06189+1.09293I$	$-5.22876+9.69725I$	0
$u=\ \ 1.040310+0.653623I$ $a=-0.290402-0.811750I$ $b=\ \ 0.140732-1.060590I$	$-3.08664-6.59798I$	0
$u=\ \ 1.040310-0.653623I$ $a=-0.290402+0.811750I$ $b=\ \ 0.140732+1.060590I$	$-3.08664+6.59798I$	0
$u=-1.064460+0.646027I$ $a=-0.450969+0.418508I$ $b=-1.12284+1.29370I$	$-7.74953+4.07259I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.064460 - 0.646027I$ $a = -0.450969 - 0.418508I$ $b = -1.12284 - 1.29370I$	$-7.74953 - 4.07259I$	0
$u = -1.074890 + 0.630986I$ $a = 0.307606 + 0.701773I$ $b = 1.351880 - 0.171332I$	$-15.2686 - 0.1519I$	0
$u = -1.074890 - 0.630986I$ $a = 0.307606 - 0.701773I$ $b = 1.351880 + 0.171332I$	$-15.2686 + 0.1519I$	0
$u = 1.066140 + 0.653704I$ $a = 0.82798 + 1.79881I$ $b = -0.17076 + 2.34794I$	$-9.85329 - 7.04987I$	0
$u = 1.066140 - 0.653704I$ $a = 0.82798 - 1.79881I$ $b = -0.17076 - 2.34794I$	$-9.85329 + 7.04987I$	0
$u = -1.063690 + 0.660571I$ $a = 1.27520 - 1.15879I$ $b = 1.66073 - 2.19821I$	$-7.49945 + 9.95718I$	0
$u = -1.063690 - 0.660571I$ $a = 1.27520 + 1.15879I$ $b = 1.66073 + 2.19821I$	$-7.49945 - 9.95718I$	0
$u = -1.068690 + 0.673015I$ $a = -2.21159 + 1.26271I$ $b = -2.42067 + 2.56720I$	$-14.5530 + 14.4409I$	0
$u = -1.068690 - 0.673015I$ $a = -2.21159 - 1.26271I$ $b = -2.42067 - 2.56720I$	$-14.5530 - 14.4409I$	0
$u = 0.683701$ $a = 0.602547$ $b = 0.0385752$	-1.02307	-9.31980

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.211468 + 0.588502I$ $a = -0.736413 - 0.786410I$ $b = 1.212590 + 0.233332I$	$-6.70249 - 2.38114I$	$-11.80434 + 2.89982I$
$u = 0.211468 - 0.588502I$ $a = -0.736413 + 0.786410I$ $b = 1.212590 - 0.233332I$	$-6.70249 + 2.38114I$	$-11.80434 - 2.89982I$
$u = 0.212478 + 0.317081I$ $a = 0.920282 + 1.026800I$ $b = -0.309776 - 0.311699I$	$-0.431525 - 0.957888I$	$-7.32117 + 6.97948I$
$u = 0.212478 - 0.317081I$ $a = 0.920282 - 1.026800I$ $b = -0.309776 + 0.311699I$	$-0.431525 + 0.957888I$	$-7.32117 - 6.97948I$
$u = -0.301622$ $a = -2.67493$ $b = -1.17462$	-2.05866	-0.865930

II. $\boldsymbol{I^u_2 = \langle u^7 - u^5 + u^4 + u^3 + b + 1,\ u^7 - u^5 + u^4 + u^3 + a + 1,\ u^8 - u^7 - u^6 + 2u^5 + u^4 - 2u^3 + 2u - 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -6u^7 + u^6 + 11u^5 - 8u^4 - 11u^3 + 7u^2 + 4u - 23$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1$
c_2, c_6	$y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1$
c_3, c_4, c_8	$y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1$
c_5, c_{11}	y^8
c_9, c_{10}, c_{12}	$(y-1)^8$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.570868 + 0.730671I$ $a = -0.325934 - 0.693334I$ $b = -0.325934 - 0.693334I$	$-2.68559 + 1.13123I$	$-13.35119 - 0.17229I$
$u = 0.570868 - 0.730671I$ $a = -0.325934 + 0.693334I$ $b = -0.325934 + 0.693334I$	$-2.68559 - 1.13123I$	$-13.35119 + 0.17229I$
$u = -0.855237 + 0.665892I$ $a = 1.03462 + 0.99451I$ $b = 1.03462 + 0.99451I$	$0.51448 + 2.57849I$	$-6.04880 - 3.90294I$
$u = -0.855237 - 0.665892I$ $a = 1.03462 - 0.99451I$ $b = 1.03462 - 0.99451I$	$0.51448 - 2.57849I$	$-6.04880 + 3.90294I$
$u = -1.09818$ $a = -0.801005$ $b = -0.801005$	-8.14766	-20.2760
$u = 1.031810 + 0.655470I$ $a = 0.842429 + 0.289836I$ $b = 0.842429 + 0.289836I$	$-4.02461 - 6.44354I$	$-15.5815 + 4.6831I$
$u = 1.031810 - 0.655470I$ $a = 0.842429 - 0.289836I$ $b = 0.842429 - 0.289836I$	$-4.02461 + 6.44354I$	$-15.5815 - 4.6831I$
$u = 0.603304$ $a = -1.30123$ $b = -1.30123$	-2.48997	-20.7610

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^8 - 3u^7 + 7u^6 - 10u^5 + 11u^4 - 10u^3 + 6u^2 - 4u + 1)$ $\cdot (u^{65} + 24u^{64} + \cdots + 17u + 1)$
c_2	$(u^8 - u^7 + \cdots + 2u - 1)(u^{65} - 2u^{64} + \cdots + u - 1)$
c_3, c_4	$(u^8 + u^7 - 3u^6 - 2u^5 + 3u^4 + 2u - 1)(u^{65} + 2u^{64} + \cdots + 72u - 36)$
c_5, c_{11}	$u^8(u^{65} + u^{64} + \cdots + 896u + 256)$
c_6	$(u^8 + u^7 + \cdots - 2u - 1)(u^{65} - 2u^{64} + \cdots + u - 1)$
c_7	$(u^8 + 3u^7 + 7u^6 + 10u^5 + 11u^4 + 10u^3 + 6u^2 + 4u + 1)$ $\cdot (u^{65} + 24u^{64} + \cdots + 17u + 1)$
c_8	$(u^8 - u^7 - 3u^6 + 2u^5 + 3u^4 - 2u - 1)(u^{65} + 2u^{64} + \cdots + 72u - 36)$
c_9, c_{10}	$((u - 1)^8)(u^{65} - 9u^{64} + \cdots - 9u + 1)$
c_{12}	$((u + 1)^8)(u^{65} - 9u^{64} + \cdots - 9u + 1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_7	$(y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1)$ $\cdot (y^{65} + 36y^{64} + \cdots + 41y - 1)$
c_2, c_6	$(y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1)$ $\cdot (y^{65} - 24y^{64} + \cdots + 17y - 1)$
c_3, c_4, c_8	$(y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1)$ $\cdot (y^{65} - 72y^{64} + \cdots + 29736y - 1296)$
c_5, c_{11}	$y^8(y^{65} + 51y^{64} + \cdots + 507904y - 65536)$
c_9, c_{10}, c_{12}	$((y-1)^8)(y^{65} - 69y^{64} + \cdots + 49y - 1)$