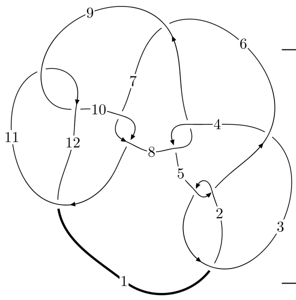
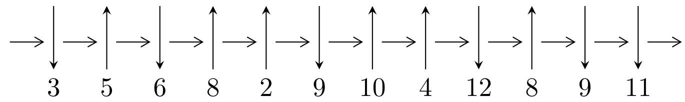
$12n_{0004}$ ($K12n_{0004}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 2.68313 \times 10^{45} u^{49} + 5.65169 \times 10^{45} u^{48} + \cdots + 2.22303 \times 10^{45} b + 2.08265 \times 10^{45},$$
$$5.37170 \times 10^{43} u^{49} + 1.30102 \times 10^{44} u^{48} + \cdots + 2.22303 \times 10^{45} a - 4.96236 \times 10^{44},\ u^{50} + 2u^{49} + \cdots + u + 1\rangle$$
$$I_2^u = \langle u^3 + b + u + 1,\ a,\ u^4 + u^2 + u + 1\rangle$$
$$I_3^u = \langle u^5 - u^4 + 2u^3 - 2u^2 + b + 2u - 2,\ a,\ u^6 - u^5 + 2u^4 - 2u^3 + 2u^2 - 2u + 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 60 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.
$\boldsymbol{I_1^u = \langle 2.68\times10^{45}u^{49} + 5.65\times10^{45}u^{48} + \cdots + 2.22\times10^{45}b + 2.08\times10^{45},\ 5.37\times10^{43}u^{49} + 1.30\times10^{44}u^{48} + \cdots + 2.22\times10^{45}a - 4.96\times10^{44},\ u^{50} + 2u^{49} + \cdots + u + 1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.0241638u^{49} - 0.0585243u^{48} + \cdots + 2.46234u + 0.223225 \\ -1.20697u^{49} - 2.54233u^{48} + \cdots - 1.10388u - 0.936850 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ -1.23912u^{49} - 2.70146u^{48} + \cdots - 2.60058u - 1.17027 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.0241638u^{49} - 0.0585243u^{48} + \cdots + 2.46234u + 0.223225 \\ -1.15066u^{49} - 2.32468u^{48} + \cdots - 1.06952u - 0.926653 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.172888u^{49} - 0.633762u^{48} + \cdots - 0.157137u - 0.0708064 \\ -0.00568877u^{49} - 0.0730463u^{48} + \cdots - 0.998737u + 0.163739 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.296253u^{49} - 0.972434u^{48} + \cdots - 0.415283u - 0.214269 \\ -0.0837652u^{49} - 0.360352u^{48} + \cdots - 1.04157u + 0.112220 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -0.0373866u^{49} + 0.100580u^{48} + \cdots - 0.326440u + 1.04404 \\ 0.373816u^{49} + 0.661193u^{48} + \cdots - 0.0581820u - 0.269424 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.411203u^{49} - 0.560613u^{48} + \cdots - 0.268258u + 1.31346 \\ 0.373816u^{49} + 0.661193u^{48} + \cdots - 0.0581820u - 0.269424 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.114683u^{49} - 0.372829u^{48} + \cdots + 1.30247u + 0.0534395 \\ 0.181570u^{49} + 0.599605u^{48} + \cdots + 1.71776u + 0.267709 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4.70229u^{49} + 5.71053u^{48} + \cdots - 8.33362u - 6.55580$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{50} + 22u^{49} + \cdots + 5u + 1$
c_2, c_5	$u^{50} + 2u^{49} + \cdots + 5u + 1$
c_3	$u^{50} - 2u^{49} + \cdots - 48u + 36$
c_4, c_8	$u^{50} - 2u^{49} + \cdots - u + 1$
c_6	$u^{50} - 10u^{49} + \cdots - 6028015u + 3579401$
c_7, c_{10}	$u^{50} + 5u^{49} + \cdots + 5120u + 1024$
c_9, c_{11}	$u^{50} - 11u^{49} + \cdots - 10u + 1$
c_{12}	$u^{50} + 9u^{49} + \cdots - 10u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{50} + 14y^{49} + \cdots + 105y + 1$
c_2, c_5	$y^{50} + 22y^{49} + \cdots + 5y + 1$
c_3	$y^{50} + 6y^{49} + \cdots + 28872y + 1296$
c_4, c_8	$y^{50} + 10y^{49} + \cdots + 5y + 1$
c_6	$y^{50} + 74y^{49} + \cdots + 905556314476485y + 12812111518801$
c_7, c_{10}	$y^{50} - 63y^{49} + \cdots - 14155776y + 1048576$
c_9, c_{11}	$y^{50} - 9y^{49} + \cdots + 10y + 1$
c_{12}	$y^{50} + 75y^{49} + \cdots + 10y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.585003 + 0.735265I$ $a = 1.57008 + 0.40175I$ $b = 0.294139 + 0.670355I$	$0.18981 + 6.85618I$	$-0.26689 - 9.43060I$
$u = 0.585003 - 0.735265I$ $a = 1.57008 - 0.40175I$ $b = 0.294139 - 0.670355I$	$0.18981 - 6.85618I$	$-0.26689 + 9.43060I$
$u = 0.892429 + 0.266725I$ $a = 0.668641 - 0.033988I$ $b = 0.763934 + 0.111453I$	$-0.49506 - 3.19030I$	$2.46244 + 4.05593I$
$u = 0.892429 - 0.266725I$ $a = 0.668641 + 0.033988I$ $b = 0.763934 - 0.111453I$	$-0.49506 + 3.19030I$	$2.46244 - 4.05593I$
$u = -0.627517 + 0.673413I$ $a = -1.357940 + 0.261790I$ $b = -0.510233 + 0.568117I$	$1.65860 - 2.16501I$	$3.61128 + 3.98050I$
$u = -0.627517 - 0.673413I$ $a = -1.357940 - 0.261790I$ $b = -0.510233 - 0.568117I$	$1.65860 + 2.16501I$	$3.61128 - 3.98050I$
$u = -0.412013 + 0.747742I$ $a = -0.058407 + 0.811246I$ $b = 0.131377 + 0.894939I$	$1.19055 - 1.89480I$	$3.58493 + 4.65187I$
$u = -0.412013 - 0.747742I$ $a = -0.058407 - 0.811246I$ $b = 0.131377 - 0.894939I$	$1.19055 + 1.89480I$	$3.58493 - 4.65187I$
$u = -0.713195 + 0.463752I$ $a = -0.882675 + 0.101195I$ $b = -0.711974 + 0.297517I$	$1.34929 - 0.89664I$	$5.51965 + 2.35436I$
$u = -0.713195 - 0.463752I$ $a = -0.882675 - 0.101195I$ $b = -0.711974 - 0.297517I$	$1.34929 + 0.89664I$	$5.51965 - 2.35436I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.442833 + 1.118810I$ $a = 0.228660 + 0.614406I$ $b = 0.496365 + 0.310678I$	$-0.96543 - 3.58766I$	$2.90819 + 4.89226I$
$u = -0.442833 - 1.118810I$ $a = 0.228660 - 0.614406I$ $b = 0.496365 - 0.310678I$	$-0.96543 + 3.58766I$	$2.90819 - 4.89226I$
$u = 0.415615 + 0.648154I$ $a = 1.13644 + 0.88310I$ $b = 0.232356 + 0.006577I$	$-2.15443 + 1.20962I$	$-5.26784 - 4.21990I$
$u = 0.415615 - 0.648154I$ $a = 1.13644 - 0.88310I$ $b = 0.232356 - 0.006577I$	$-2.15443 - 1.20962I$	$-5.26784 + 4.21990I$
$u = -0.239224 + 0.729553I$ $a = -0.92587 + 1.52769I$ $b = 0.184105 - 0.655650I$	$-3.56813 - 4.51753I$	$-7.12654 + 7.85182I$
$u = -0.239224 - 0.729553I$ $a = -0.92587 - 1.52769I$ $b = 0.184105 + 0.655650I$	$-3.56813 + 4.51753I$	$-7.12654 - 7.85182I$
$u = 0.474690 + 0.586628I$ $a = 0.317436 + 0.867818I$ $b = 0.336934 + 1.108570I$	$0.36504 - 2.86959I$	$1.52034 + 1.42682I$
$u = 0.474690 - 0.586628I$ $a = 0.317436 - 0.867818I$ $b = 0.336934 - 1.108570I$	$0.36504 + 2.86959I$	$1.52034 - 1.42682I$
$u = 0.276652 + 1.215690I$ $a = -0.130051 + 0.523865I$ $b = -0.256894 + 0.216714I$	$-5.21381 + 0.38052I$	0
$u = 0.276652 - 1.215690I$ $a = -0.130051 - 0.523865I$ $b = -0.256894 - 0.216714I$	$-5.21381 - 0.38052I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.932827+0.874426I$ $a=-1.22918-1.02414I$ $b=-1.88245+0.61714I$	$8.53540-6.83590I$	0
$u=-0.932827-0.874426I$ $a=-1.22918+1.02414I$ $b=-1.88245-0.61714I$	$8.53540+6.83590I$	0
$u=-0.084592+0.713079I$ $a=-0.33510+1.70480I$ $b=\ \ 0.060912-1.093010I$	$-4.25283+1.34403I$	$-9.08170-1.74638I$
$u=-0.084592-0.713079I$ $a=-0.33510-1.70480I$ $b=\ \ 0.060912+1.093010I$	$-4.25283-1.34403I$	$-9.08170+1.74638I$
$u=-0.986608+0.831816I$ $a=-0.974415-0.890813I$ $b=-1.69006+0.29018I$	$4.09805+0.13420I$	0
$u=-0.986608-0.831816I$ $a=-0.974415+0.890813I$ $b=-1.69006-0.29018I$	$4.09805-0.13420I$	0
$u=\ \ 0.953965+0.875078I$ $a=\ \ 1.13306-1.04945I$ $b=\ \ 1.91375+0.48552I$	$10.16820+1.33885I$	0
$u=\ \ 0.953965-0.875078I$ $a=\ \ 1.13306+1.04945I$ $b=\ \ 1.91375-0.48552I$	$10.16820-1.33885I$	0
$u=\ \ 0.503491+1.215080I$ $a=-0.292017+0.535955I$ $b=-0.543268+0.125989I$	$-3.59441+8.42989I$	0
$u=\ \ 0.503491-1.215080I$ $a=-0.292017-0.535955I$ $b=-0.543268-0.125989I$	$-3.59441-8.42989I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.864809 + 0.998500I$ $a = 1.021580 + 0.934002I$ $b = 2.26238 + 0.01234I$	$8.12452 + 0.19479I$	0
$u = -0.864809 - 0.998500I$ $a = 1.021580 - 0.934002I$ $b = 2.26238 - 0.01234I$	$8.12452 - 0.19479I$	0
$u = 1.004750 + 0.876459I$ $a = 0.905947 - 1.070140I$ $b = 1.91696 + 0.17358I$	$9.78917 - 2.20715I$	0
$u = 1.004750 - 0.876459I$ $a = 0.905947 + 1.070140I$ $b = 1.91696 - 0.17358I$	$9.78917 + 2.20715I$	0
$u = 0.879539 + 1.011550I$ $a = -1.081270 + 0.875542I$ $b = -2.29261 - 0.17584I$	$9.71806 + 5.41424I$	0
$u = 0.879539 - 1.011550I$ $a = -1.081270 - 0.875542I$ $b = -2.29261 + 0.17584I$	$9.71806 - 5.41424I$	0
$u = -1.024250 + 0.878258I$ $a = -0.822290 - 1.069240I$ $b = -1.90015 + 0.05959I$	$7.85339 + 7.67379I$	0
$u = -1.024250 - 0.878258I$ $a = -0.822290 + 1.069240I$ $b = -1.90015 - 0.05959I$	$7.85339 - 7.67379I$	0
$u = -0.877514 + 1.052570I$ $a = 1.041610 + 0.710120I$ $b = 1.99699 - 0.41591I$	$3.38860 - 6.97331I$	0
$u = -0.877514 - 1.052570I$ $a = 1.041610 - 0.710120I$ $b = 1.99699 + 0.41591I$	$3.38860 + 6.97331I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.241768 + 0.574851I$ $a = 0.656765 + 1.098310I$ $b = 0.388520 - 0.721943I$	$-1.91283 + 0.92101I$	$-3.25247 - 0.86020I$
$u = 0.241768 - 0.574851I$ $a = 0.656765 - 1.098310I$ $b = 0.388520 + 0.721943I$	$-1.91283 - 0.92101I$	$-3.25247 + 0.86020I$
$u = 0.907639 + 1.041190I$ $a = -1.179790 + 0.720010I$ $b = -2.25110 - 0.59042I$	$9.24238 + 9.20482I$	0
$u = 0.907639 - 1.041190I$ $a = -1.179790 - 0.720010I$ $b = -2.25110 + 0.59042I$	$9.24238 - 9.20482I$	0
$u = -0.916608 + 1.051050I$ $a = 1.204760 + 0.661896I$ $b = 2.21127 - 0.72670I$	$7.2749 - 14.7585I$	0
$u = -0.916608 - 1.051050I$ $a = 1.204760 - 0.661896I$ $b = 2.21127 + 0.72670I$	$7.2749 + 14.7585I$	0
$u = 0.418143 + 0.325356I$ $a = 0.746640 + 0.640935I$ $b = 2.00114 + 0.03022I$	$-1.36557 + 1.46875I$	$-6.84223 - 10.34978I$
$u = 0.418143 - 0.325356I$ $a = 0.746640 - 0.640935I$ $b = 2.00114 - 0.03022I$	$-1.36557 - 1.46875I$	$-6.84223 + 10.34978I$
$u = -0.431697 + 0.145919I$ $a = -0.862616 + 0.330550I$ $b = -3.15240 - 0.05844I$	$-1.85076 + 2.37111I$	$9.8016 + 19.1551I$
$u = -0.431697 - 0.145919I$ $a = -0.862616 - 0.330550I$ $b = -3.15240 + 0.05844I$	$-1.85076 - 2.37111I$	$9.8016 - 19.1551I$

II. $I_2^u = \langle u^3 + b + u + 1,\ a,\ u^4 + u^2 + u + 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 5u^3 - 3u^2 + u + 1$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.547424 + 0.585652I$ $a = 0$ $b = -0.851808 - 0.911292I$	$-0.66484 - 1.39709I$	$2.57868 + 4.13745I$
$u = -0.547424 - 0.585652I$ $a = 0$ $b = -0.851808 + 0.911292I$	$-0.66484 + 1.39709I$	$2.57868 - 4.13745I$
$u = 0.547424 + 1.120870I$ $a = 0$ $b = 0.351808 - 0.720342I$	$-4.26996 + 7.64338I$	$-5.07868 - 4.56334I$
$u = 0.547424 - 1.120870I$ $a = 0$ $b = 0.351808 + 0.720342I$	$-4.26996 - 7.64338I$	$-5.07868 + 4.56334I$

III.

$$\boldsymbol{I^u_3 = \langle u^5 - u^4 + 2u^3 - 2u^2 + b + 2u - 2,\ a,\ u^6 - u^5 + 2u^4 - 2u^3 + 2u^2 - 2u + 1\rangle}$$

(i) Arc colorings

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

$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} 0 \\ -u^5 + u^4 - 2u^3 + 2u^2 - 2u + 2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -u \\ -u^5 + u^4 - 3u^3 + 2u^2 - 3u + 2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0 \\ -u^5 + u^4 - 2u^3 + 2u^2 - 2u + 2 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^5 + u^4 - 2u^3 + 2u^2 - 2u + 2 \\ -u^5 - 2u^3 + u^2 - u + 1 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -u \\ -u^3 - u \end{pmatrix}$$

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.498832 + 1.001300I$ $a = 0$ $b = -0.398606 - 0.800120I$	$-1.91067 - 2.82812I$	$-1.88527 + 2.08748I$
$u = -0.498832 - 1.001300I$ $a = 0$ $b = -0.398606 + 0.800120I$	$-1.91067 + 2.82812I$	$-1.88527 - 2.08748I$
$u = 0.284920 + 1.115140I$ $a = 0$ $b = 0.215080 - 0.841795I$	-6.04826	$-10.27439 + 0.99756I$
$u = 0.284920 - 1.115140I$ $a = 0$ $b = 0.215080 + 0.841795I$	-6.04826	$-10.27439 - 0.99756I$
$u = 0.713912 + 0.305839I$ $a = 0$ $b = 1.183530 - 0.507021I$	$-1.91067 - 2.82812I$	$-2.34034 + 5.36114I$
$u = 0.713912 - 0.305839I$ $a = 0$ $b = 1.183530 + 0.507021I$	$-1.91067 + 2.82812I$	$-2.34034 - 5.36114I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^4-2u^3+3u^2-u+1)(u^6-3u^5+4u^4-2u^3+1)$ $\cdot(u^{50}+22u^{49}+\cdots+5u+1)$
c_2	$(u^4+u^2+u+1)(u^6-u^5+2u^4-2u^3+2u^2-2u+1)$ $\cdot(u^{50}+2u^{49}+\cdots+5u+1)$
c_3	$((u^3-u^2+1)^2)(u^4+3u^3+\cdots+3u+2)(u^{50}-2u^{49}+\cdots-48u+36)$
c_4	$(u^4+u^2+u+1)(u^6-u^5+2u^4-2u^3+2u^2-2u+1)$ $\cdot(u^{50}-2u^{49}+\cdots-u+1)$
c_5	$(u^4+u^2-u+1)(u^6+u^5+2u^4+2u^3+2u^2+2u+1)$ $\cdot(u^{50}+2u^{49}+\cdots+5u+1)$
c_6	$(u^4-2u^3+3u^2-u+1)(u^6-3u^5+4u^4-2u^3+1)$ $\cdot(u^{50}-10u^{49}+\cdots-6028015u+3579401)$
c_7, c_{10}	$u^{10}(u^{50}+5u^{49}+\cdots+5120u+1024)$
c_8	$(u^4+u^2-u+1)(u^6+u^5+2u^4+2u^3+2u^2+2u+1)$ $\cdot(u^{50}-2u^{49}+\cdots-u+1)$
c_9	$((u-1)^{10})(u^{50}-11u^{49}+\cdots-10u+1)$
c_{11}	$((u+1)^{10})(u^{50}-11u^{49}+\cdots-10u+1)$
c_{12}	$((u+1)^{10})(u^{50}+9u^{49}+\cdots-10u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^4+2y^3+7y^2+5y+1)(y^6-y^5+4y^4-2y^3+8y^2+1)$ $\cdot(y^{50}+14y^{49}+\cdots+105y+1)$
c_2, c_5	$(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^{50}+22y^{49}+\cdots+5y+1)$
c_3	$(y^3-y^2+2y-1)^2(y^4-y^3+2y^2+7y+4)$ $\cdot(y^{50}+6y^{49}+\cdots+28872y+1296)$
c_4, c_8	$(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^{50}+10y^{49}+\cdots+5y+1)$
c_6	$(y^4+2y^3+7y^2+5y+1)(y^6-y^5+4y^4-2y^3+8y^2+1)$ $\cdot(y^{50}+74y^{49}+\cdots+905556314476485y+12812111518801)$
c_7, c_{10}	$y^{10}(y^{50}-63y^{49}+\cdots-1.41558\times10^7y+1048576)$
c_9, c_{11}	$((y-1)^{10})(y^{50}-9y^{49}+\cdots+10y+1)$
c_{12}	$((y-1)^{10})(y^{50}+75y^{49}+\cdots+10y+1)$