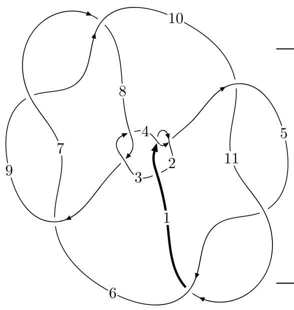
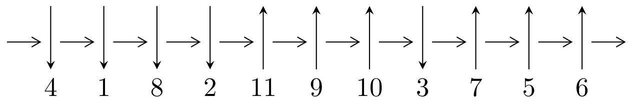
$11a_{57}$ ($K11a_{57}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

[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`).

$$I_1^u = \langle -68209745u^{16} + 103218620u^{15} + \cdots + 6895752724d + 558230980,$$
$$- 117728333u^{16} + 37441650u^{15} + \cdots + 13791505448c - 2779791176,$$
$$- 70376587u^{16} + 38764471u^{15} + \cdots + 6895752724b + 3895994728,$$
$$- 327083412u^{16} + 276473252u^{15} + \cdots + 6895752724a - 7902639380,\ u^{17} - 2u^{16} + \cdots - 4u^2 + 8\rangle$$
$$I_2^u = \langle u^6c + 2u^5c + 3u^4c + 2u^3c - u^3 - cu - u^2 + d - u,$$
$$- u^6c - u^5c - 2u^4c - u^3c - u^2c + 2c^2 - cu - 2u^2 - 2u - 2,\ -u^4 - u^3 - u^2 + b + 1,$$
$$- u^6 - 3u^5 - 4u^4 - 3u^3 - u^2 + 2a + u,\ u^7 + 3u^6 + 6u^5 + 7u^4 + 5u^3 + u^2 - 2u - 2\rangle$$
$$I_3^u = \langle -u^4 + d,\ -u^2 + c - 1,\ -u^4a - 2u^2a + u^3 - au + b - a + u + 1,$$
$$u^3a - 2u^2a - u^3 + a^2 + 2au + u^2 - 2a - u + 1,\ u^5 - u^4 + 2u^3 - u^2 + u - 1\rangle$$
$$I_4^u = \langle 2u^4a - 2u^4 + 4u^2a + 2u^3 + au - 6u^2 + d + 4a + 2u - 4,\ -u^4a + u^4 - 2u^2a - u^3 + 3u^2 + c - 2a - u + 2,$$
$$- u^4a - 2u^2a + u^3 - au + b - a + u + 1,\ u^3a - 2u^2a - u^3 + a^2 + 2au + u^2 - 2a - u + 1,$$
$$u^5 - u^4 + 2u^3 - u^2 + u - 1\rangle$$
$$I_5^u = \langle -u^4 + d,\ -u^2 + c - 1,\ u^4 - u^3 + u^2 + b + 1,\ 2u^4 - u^3 + 4u^2 + a + 2,\ u^5 - u^4 + 2u^3 - u^2 + u - 1\rangle$$

$$I_1^v = \langle c,\ d - 1,\ b,\ a - 1,\ v + 1\rangle$$
$$I_2^v = \langle a,\ d,\ c - 1,\ b + 1,\ v - 1\rangle$$
$$I_3^v = \langle a,\ d + 1,\ c - a,\ b + 1,\ v - 1\rangle$$
$$I_4^v = \langle a,\ da + c - 1,\ dv + 1,\ cv - a - v,\ b + 1\rangle$$

* 8 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 59 representations.
* 1 irreducible components of $\dim_{\mathbb{C}} = 1$

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

I. $\boldsymbol{I^u_1 = \langle -6.82\times10^{7}u^{16} + 1.03\times10^{8}u^{15} + \cdots + 6.90\times10^{9}d + 5.58\times10^{8},\ -1.18\times10^{8}u^{16} + 3.74\times10^{7}u^{15} + \cdots + 1.38\times10^{10}c - 2.78\times10^{9},\ -7.04\times10^{7}u^{16} + 3.88\times10^{7}u^{15} + \cdots + 6.90\times10^{9}b + 3.90\times10^{9},\ -3.27\times10^{8}u^{16} + 2.76\times10^{8}u^{15} + \cdots + 6.90\times10^{9}a - 7.90\times10^{9},\ u^{17} - 2u^{16} + \cdots - 4u^2 + 8\rangle}$

(i) Arc colorings

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

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

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

$$a_1 = \begin{pmatrix}0.0474326u^{16} - 0.0400933u^{15} + \cdots + 0.133884u + 1.14602\\0.0102058u^{16} - 0.00562150u^{15} + \cdots + 0.589483u - 0.564985\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-u\\u\end{pmatrix}$$

$$a_2 = \begin{pmatrix}-0.0115535u^{16} - 0.0103886u^{15} + \cdots - 0.835060u + 1.27282\\-0.0135318u^{16} + 0.0739510u^{15} + \cdots + 1.06137u + 0.141156\end{pmatrix}$$

$$a_5 = \begin{pmatrix}0.0576384u^{16} - 0.0457148u^{15} + \cdots + 0.723367u + 0.581031\\-0.0339841u^{16} + 0.0141997u^{15} + \cdots - 1.05059u + 0.00848878\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}0.00853629u^{16} - 0.00271483u^{15} + \cdots - 0.843158u + 0.201558\\0.00989156u^{16} - 0.0149684u^{15} + \cdots + 0.971920u - 0.0809529\end{pmatrix}$$

$$a_7 = \begin{pmatrix}-0.0184279u^{16} + 0.0176833u^{15} + \cdots - 0.128762u - 0.120605\\0.00989156u^{16} - 0.0149684u^{15} + \cdots + 0.971920u - 0.0809529\end{pmatrix}$$

$$a_6 = \begin{pmatrix}-0.0196690u^{16} + 0.00798947u^{15} + \cdots - 0.197053u - 0.235467\\0.0111327u^{16} - 0.00527464u^{15} + \cdots + 1.04021u + 0.0339091\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}0.0321906u^{16} - 0.0342299u^{15} + \cdots - 0.170381u + 0.791078\\0.00701992u^{16} + 0.00619838u^{15} + \cdots + 0.764986u - 0.330652\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}0.0321906u^{16} - 0.0342299u^{15} + \cdots - 0.170381u + 0.791078\\0.00701992u^{16} + 0.00619838u^{15} + \cdots + 0.764986u - 0.330652\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{975451789}{3447876362}u^{16} - \frac{210120269}{3447876362}u^{15} + \cdots + \frac{8037027246}{1723938181}u - \frac{2146878348}{1723938181}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{17} - 2u^{16} + \cdots - 8u + 4$
c_2	$u^{17} + 6u^{16} + \cdots + 88u + 16$
c_3, c_8	$u^{17} - 2u^{16} + \cdots - 4u^2 + 8$
c_5, c_6, c_7 c_9, c_{10}, c_{11}	$u^{17} + 2u^{16} + \cdots + 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{17} - 6y^{16} + \cdots + 88y - 16$
c_2	$y^{17} + 10y^{16} + \cdots + 288y - 256$
c_3, c_8	$y^{17} + 6y^{16} + \cdots + 64y - 64$
c_5, c_6, c_7 c_9, c_{10}, c_{11}	$y^{17} - 20y^{16} + \cdots + 27y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.679716 + 0.561358I$ $a = 0.469715 + 0.071775I$ $b = -1.066150 + 0.686891I$ $c = -0.482279 - 0.453082I$ $d = 0.255516 + 0.765465I$	$-3.14388 + 1.09865I$	$-5.52136 - 1.09882I$
$u = 0.679716 - 0.561358I$ $a = 0.469715 - 0.071775I$ $b = -1.066150 - 0.686891I$ $c = -0.482279 + 0.453082I$ $d = 0.255516 - 0.765465I$	$-3.14388 - 1.09865I$	$-5.52136 + 1.09882I$
$u = 0.555749 + 1.023030I$ $a = -0.24717 + 1.86349I$ $b = -0.86669 - 1.12847I$ $c = -0.493632 - 0.522885I$ $d = -0.051009 + 0.779355I$	$-1.71782 - 5.90288I$	$-0.75718 + 7.23695I$
$u = 0.555749 - 1.023030I$ $a = -0.24717 - 1.86349I$ $b = -0.86669 + 1.12847I$ $c = -0.493632 + 0.522885I$ $d = -0.051009 - 0.779355I$	$-1.71782 + 5.90288I$	$-0.75718 - 7.23695I$
$u = -1.247530 + 0.318357I$ $a = 0.505620 + 0.282992I$ $b = 0.454441 + 0.853023I$ $c = -1.114330 - 0.162230I$ $d = -0.517027 + 0.098116I$	$8.60033 - 1.91429I$	$8.38805 + 0.33236I$
$u = -1.247530 - 0.318357I$ $a = 0.505620 - 0.282992I$ $b = 0.454441 - 0.853023I$ $c = -1.114330 + 0.162230I$ $d = -0.517027 - 0.098116I$	$8.60033 + 1.91429I$	$8.38805 - 0.33236I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.022849 + 0.695780I$ $a = 1.92972 - 1.22120I$ $b = -0.342039 + 0.295037I$ $c = 0.324109 - 0.810541I$ $d = 0.054070 + 0.438524I$	$0.88275 + 1.29794I$	$5.86581 - 6.22804I$
$u = -0.022849 - 0.695780I$ $a = 1.92972 + 1.22120I$ $b = -0.342039 - 0.295037I$ $c = 0.324109 + 0.810541I$ $d = 0.054070 - 0.438524I$	$0.88275 - 1.29794I$	$5.86581 + 6.22804I$
$u = 1.235140 + 0.560024I$ $a = 0.436143 + 0.137389I$ $b = -0.74733 + 1.42693I$ $c = 1.046940 - 0.255771I$ $d = 0.525994 + 0.171484I$	$6.85439 + 7.49245I$	$6.04980 - 5.00652I$
$u = 1.235140 - 0.560024I$ $a = 0.436143 - 0.137389I$ $b = -0.74733 - 1.42693I$ $c = 1.046940 + 0.255771I$ $d = 0.525994 - 0.171484I$	$6.85439 - 7.49245I$	$6.04980 + 5.00652I$
$u = -0.66454 + 1.33308I$ $a = 0.446199 + 0.683104I$ $b = 0.944156 - 0.676727I$ $c = 0.252205 + 0.988893I$ $d = -0.30957 - 2.53920I$	$11.9481 + 8.6770I$	$9.06927 - 4.38269I$
$u = -0.66454 - 1.33308I$ $a = 0.446199 - 0.683104I$ $b = 0.944156 + 0.676727I$ $c = 0.252205 - 0.988893I$ $d = -0.30957 + 2.53920I$	$11.9481 - 8.6770I$	$9.06927 + 4.38269I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.79652 + 1.26851I$ $a = -0.46664 + 1.36075I$ $b = -1.06945 - 1.61168I$ $c = -0.297727 + 0.961003I$ $d = 0.35861 - 2.47585I$	$9.1924 - 14.7354I$	$6.16899 + 8.15927I$
$u = 0.79652 - 1.26851I$ $a = -0.46664 - 1.36075I$ $b = -1.06945 + 1.61168I$ $c = -0.297727 - 0.961003I$ $d = 0.35861 + 2.47585I$	$9.1924 + 14.7354I$	$6.16899 - 8.15927I$
$u = -0.11728 + 1.54547I$ $a = 0.161885 - 1.071490I$ $b = 0.08928 + 1.57333I$ $c = 0.041573 + 1.021680I$ $d = -0.05064 - 2.64219I$	$15.7365 + 3.2760I$	$10.07807 - 2.58290I$
$u = -0.11728 - 1.54547I$ $a = 0.161885 + 1.071490I$ $b = 0.08928 - 1.57333I$ $c = 0.041573 - 1.021680I$ $d = -0.05064 + 2.64219I$	$15.7365 - 3.2760I$	$10.07807 + 2.58290I$
$u = -0.429856$ $a = 0.529049$ $b = -0.792429$ $c = 0.446280$ $d = -0.531893$	-1.29941	-8.68290

II. $I_2^u = \langle u^6c + 2u^5c + \cdots + d - u,\ -u^6c - u^5c + \cdots + 2c^2 - 2,\ -u^4 - u^3 - u^2 + b + 1,\ -u^6 - 3u^5 + \cdots + 2a + u,\ u^7 + 3u^6 + \cdots - 2u - 2\rangle$

(i) Arc colorings

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

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

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

$$a_1 = \begin{pmatrix} \frac{1}{2}u^6 + \frac{3}{2}u^5 + \cdots + \frac{1}{2}u^2 - \frac{1}{2}u \\ u^4 + u^3 + u^2 - 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -\frac{1}{2}u^6 - \frac{1}{2}u^5 + \cdots + \frac{1}{2}u + 1 \\ -u^5 - u^4 - 2u^3 - u^2 + 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} \frac{1}{2}u^6 + \frac{3}{2}u^5 + \cdots - \frac{1}{2}u - 1 \\ -u^5 - 2u^4 - 2u^3 - u^2 + u + 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} c \\ -u^6c - 2u^5c - 3u^4c - 2u^3c + u^3 + cu + u^2 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^6c + 2u^5c + 3u^4c + 2u^3c - u^3 - cu - u^2 - c - u \\ -u^6c - 2u^5c - 3u^4c - 2u^3c + u^3 + cu + u^2 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^6c + 2u^5c + 3u^4c + 2u^3c + u^2c - u^3 - cu - u^2 - c - u \\ -u^6c - 2u^5c - 3u^4c - 2u^3c - u^2c + u^3 + cu + u^2 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} \frac{1}{2}u^6 + \frac{1}{2}u^5 + \cdots + \frac{1}{2}u^2 - \frac{1}{2}u \\ -u^4c + u^5 - u^3c + 2u^4 - u^2c + 3u^3 + 2u^2 + u - 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} \frac{1}{2}u^6 + \frac{1}{2}u^5 + \cdots + \frac{1}{2}u^2 - \frac{1}{2}u \\ -u^4c + u^5 - u^3c + 2u^4 - u^2c + 3u^3 + 2u^2 + u - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 2u^6 + 8u^5 + 10u^4 + 10u^3 - 4u$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$(u^7 - u^6 - u^5 + 2u^4 + u^3 - 2u^2 + u + 1)^2$
c_2	$(u^7 + 3u^6 + 7u^5 + 8u^4 + 9u^3 + 6u^2 + 5u + 1)^2$
c_3, c_8	$(u^7 + 3u^6 + 6u^5 + 7u^4 + 5u^3 + u^2 - 2u - 2)^2$
c_5, c_6, c_7 c_9, c_{10}, c_{11}	$u^{14} + u^{13} + \cdots - 4u - 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y^7 - 3y^6 + 7y^5 - 8y^4 + 9y^3 - 6y^2 + 5y - 1)^2$
c_2	$(y^7 + 5y^6 + 19y^5 + 36y^4 + 49y^3 + 38y^2 + 13y - 1)^2$
c_3, c_8	$(y^7 + 3y^6 + 4y^5 + y^4 - y^3 + 7y^2 + 8y - 4)^2$
c_5, c_6, c_7 c_9, c_{10}, c_{11}	$y^{14} - 11y^{13} + \cdots - 40y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.984140+0.426152I$ $a=\ \ 0.472917-0.120643I$ $b=-0.714380-0.998080I$ $c=-1.198550-0.312556I$ $d=-0.438334+0.145757I$	$1.19445-3.93070I$	$1.74059+4.87230I$
$u=-0.984140+0.426152I$ $a=\ \ 0.472917-0.120643I$ $b=-0.714380-0.998080I$ $c=\ \ 0.543084-0.485903I$ $d=-0.376079+1.030380I$	$1.19445-3.93070I$	$1.74059+4.87230I$
$u=-0.984140-0.426152I$ $a=\ \ 0.472917+0.120643I$ $b=-0.714380+0.998080I$ $c=-1.198550+0.312556I$ $d=-0.438334-0.145757I$	$1.19445+3.93070I$	$1.74059-4.87230I$
$u=-0.984140-0.426152I$ $a=\ \ 0.472917+0.120643I$ $b=-0.714380+0.998080I$ $c=\ \ 0.543084+0.485903I$ $d=-0.376079-1.030380I$	$1.19445+3.93070I$	$1.74059-4.87230I$
$u=-0.167785+1.218780I$ $a=\ \ 0.529166+1.016880I$ $b=\ \ 0.242061-0.924444I$ $c=-0.650809-0.592102I$ $d=-0.300734+0.551723I$	$7.14223-0.95540I$	$8.68929+2.37083I$
$u=-0.167785+1.218780I$ $a=\ \ 0.529166+1.016880I$ $b=\ \ 0.242061-0.924444I$ $c=\ \ 0.093897+1.158860I$ $d=-0.13529-2.82138I$	$7.14223-0.95540I$	$8.68929+2.37083I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.167785 - 1.218780I$ $a = 0.529166 - 1.016880I$ $b = 0.242061 + 0.924444I$ $c = -0.650809 + 0.592102I$ $d = -0.300734 - 0.551723I$	$7.14223 + 0.95540I$	$8.68929 - 2.37083I$
$u = -0.167785 - 1.218780I$ $a = 0.529166 - 1.016880I$ $b = 0.242061 + 0.924444I$ $c = 0.093897 - 1.158860I$ $d = -0.13529 + 2.82138I$	$7.14223 + 0.95540I$	$8.68929 - 2.37083I$
$u = -0.654547 + 1.202470I$ $a = -0.33478 - 1.51279I$ $b = -0.90125 + 1.43610I$ $c = 0.292391 + 1.022450I$ $d = -0.38305 - 2.56809I$	$3.65356 + 9.93065I$	$3.53972 - 7.33664I$
$u = -0.654547 + 1.202470I$ $a = -0.33478 - 1.51279I$ $b = -0.90125 + 1.43610I$ $c = 0.509792 - 0.511513I$ $d = 0.118485 + 0.850766I$	$3.65356 + 9.93065I$	$3.53972 - 7.33664I$
$u = -0.654547 - 1.202470I$ $a = -0.33478 + 1.51279I$ $b = -0.90125 - 1.43610I$ $c = 0.292391 - 1.022450I$ $d = -0.38305 + 2.56809I$	$3.65356 - 9.93065I$	$3.53972 + 7.33664I$
$u = -0.654547 - 1.202470I$ $a = -0.33478 + 1.51279I$ $b = -0.90125 - 1.43610I$ $c = 0.509792 + 0.511513I$ $d = 0.118485 - 0.850766I$	$3.65356 - 9.93065I$	$3.53972 + 7.33664I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.612945$ $a = 0.665400$ $b = -0.252863$ $c = -1.05845$ $d = 1.74513$	2.33847	2.06080
$u = 0.612945$ $a = 0.665400$ $b = -0.252863$ $c = 1.87884$ $d = 0.284876$	2.33847	2.06080

III. $\boldsymbol{I_3^u = \langle -u^4 + d,\ -u^2 + c - 1,\ -u^4 a + u^3 + \cdots - a + 1,\ u^3 a - u^3 + \cdots - 2a + 1,\ u^5 - u^4 + 2u^3 - u^2 + u - 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^3 + 4u^2 - 4u + 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_{10}, c_{11}	$y^{10} - 5y^9 + \cdots - 4y + 1$
c_2	$y^{10} - y^9 - 6y^7 + 22y^6 + 6y^5 + 45y^4 + 15y^3 + 22y^2 + 4y + 1$
c_3, c_8	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)^2$
c_6, c_7, c_9	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.339110 + 0.822375I$ $a = 0.445032 - 0.031192I$ $b = -1.50324 - 0.38743I$ $c = 0.438694 - 0.557752I$ $d = 0.003977 + 0.626138I$	$0.32910 + 1.53058I$	$2.51511 - 4.43065I$
$u = -0.339110 + 0.822375I$ $a = 0.46155 - 2.45660I$ $b = -0.703115 + 0.728284I$ $c = 0.438694 - 0.557752I$ $d = 0.003977 + 0.626138I$	$0.32910 + 1.53058I$	$2.51511 - 4.43065I$
$u = -0.339110 - 0.822375I$ $a = 0.445032 + 0.031192I$ $b = -1.50324 + 0.38743I$ $c = 0.438694 + 0.557752I$ $d = 0.003977 - 0.626138I$	$0.32910 - 1.53058I$	$2.51511 + 4.43065I$
$u = -0.339110 - 0.822375I$ $a = 0.46155 + 2.45660I$ $b = -0.703115 - 0.728284I$ $c = 0.438694 + 0.557752I$ $d = 0.003977 - 0.626138I$	$0.32910 - 1.53058I$	$2.51511 + 4.43065I$
$u = 0.766826$ $a = 0.595741 + 0.124010I$ $b = -0.258559 + 0.407825I$ $c = 1.58802$ $d = 0.345770$	2.40108	3.48110
$u = 0.766826$ $a = 0.595741 - 0.124010I$ $b = -0.258559 - 0.407825I$ $c = 1.58802$ $d = 0.345770$	2.40108	3.48110

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.455697 + 1.200150I$ $a = 0.542114 - 0.781069I$ $b = 0.586363 + 0.691742I$ $c = -0.232705 + 1.093810I$ $d = 0.32314 - 2.69669I$	$5.87256 - 4.40083I$	$6.74431 + 3.49859I$
$u = 0.455697 + 1.200150I$ $a = -0.04444 + 1.54938I$ $b = -0.62145 - 1.31364I$ $c = -0.232705 + 1.093810I$ $d = 0.32314 - 2.69669I$	$5.87256 - 4.40083I$	$6.74431 + 3.49859I$
$u = 0.455697 - 1.200150I$ $a = 0.542114 + 0.781069I$ $b = 0.586363 - 0.691742I$ $c = -0.232705 - 1.093810I$ $d = 0.32314 + 2.69669I$	$5.87256 + 4.40083I$	$6.74431 - 3.49859I$
$u = 0.455697 - 1.200150I$ $a = -0.04444 - 1.54938I$ $b = -0.62145 + 1.31364I$ $c = -0.232705 - 1.093810I$ $d = 0.32314 + 2.69669I$	$5.87256 + 4.40083I$	$6.74431 - 3.49859I$

IV. $\boldsymbol{I^u_4 = \langle 2u^4a - 2u^4 + \cdots + 4a - 4,\ -u^4a + u^4 + \cdots - 2a + 2,\ -u^4a + u^3 + \cdots - a + 1,\ u^3a - u^3 + \cdots - 2a + 1,\ u^5 - u^4 + 2u^3 - u^2 + u - 1\rangle}$

(i) Arc colorings

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

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

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

$$a_1 = \begin{pmatrix} a \\ u^4a + 2u^2a - u^3 + au + a - u - 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} u^4a + 2u^2a - u^3 + au + 2a - u - 1 \\ -u^4 + 2u^3 - au - 2u^2 + 2u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^4a - u^4 + 2u^2a + u^3 - 3u^2 + 2a + u - 2 \\ -2u^4a + 2u^4 - 4u^2a - 2u^3 - au + 6u^2 - 4a - 2u + 4 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^4a - u^4 + 2u^2a + u^3 + au - 3u^2 + 2a + u - 2 \\ -2u^4a + 2u^4 - 4u^2a - 2u^3 - au + 6u^2 - 4a - 2u + 4 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 2u^4a - u^3a - 2u^4 + 4u^2a + u^3 + au - 4u^2 + 3a - 2 \\ -3u^4a + u^3a + 3u^4 - 6u^2a - 2u^3 - au + 7u^2 - 5a - u + 4 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 3u^4a - 2u^4 + 5u^2a + u^3 + au - 4u^2 + 4a - 3 \\ -3u^4a + 3u^4 - 5u^2a - 2u^3 - au + 6u^2 - 4a - u + 4 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 3u^4a - 2u^4 + 5u^2a + u^3 + au - 4u^2 + 4a - 3 \\ -3u^4a + 3u^4 - 5u^2a - 2u^3 - au + 6u^2 - 4a - u + 4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^3 + 4u^2 - 4u + 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_6 c_7, c_9	$y^{10} - 5y^9 + \cdots - 4y + 1$
c_2	$y^{10} - y^9 - 6y^7 + 22y^6 + 6y^5 + 45y^4 + 15y^3 + 22y^2 + 4y + 1$
c_3, c_8	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)^2$
c_5, c_{10}, c_{11}	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.339110 + 0.822375I$ $a = \quad 0.445032 - 0.031192I$ $b = -1.50324 - 0.38743I$ $c = \quad 0.366828 + 1.351750I$ $d = -0.60839 - 3.08007I$	$0.32910 + 1.53058I$	$2.51511 - 4.43065I$
$u = -0.339110 + 0.822375I$ $a = \quad 0.46155 - 2.45660I$ $b = -0.703115 + 0.728284I$ $c = -0.805522 - 0.794001I$ $d = -0.252685 + 0.375376I$	$0.32910 + 1.53058I$	$2.51511 - 4.43065I$
$u = -0.339110 - 0.822375I$ $a = \quad 0.445032 + 0.031192I$ $b = -1.50324 + 0.38743I$ $c = \quad 0.366828 - 1.351750I$ $d = -0.60839 + 3.08007I$	$0.32910 - 1.53058I$	$2.51511 + 4.43065I$
$u = -0.339110 - 0.822375I$ $a = \quad 0.46155 + 2.45660I$ $b = -0.703115 - 0.728284I$ $c = -0.805522 + 0.794001I$ $d = -0.252685 - 0.375376I$	$0.32910 - 1.53058I$	$2.51511 + 4.43065I$
$u = \quad 0.766826$ $a = \quad 0.595741 + 0.124010I$ $b = -0.258559 + 0.407825I$ $c = -0.794011 + 0.436741I$ $d = \quad 1.13119 - 0.96858I$	2.40108	3.48110
$u = \quad 0.766826$ $a = \quad 0.595741 - 0.124010I$ $b = -0.258559 - 0.407825I$ $c = -0.794011 - 0.436741I$ $d = \quad 1.13119 + 0.96858I$	2.40108	3.48110

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.455697 + 1.200150I$ $a = 0.542114 - 0.781069I$ $b = 0.586363 + 0.691742I$ $c = -0.518554 - 0.530425I$ $d = -0.147334 + 0.766162I$	$5.87256 - 4.40083I$	$6.74431 + 3.49859I$
$u = 0.455697 + 1.200150I$ $a = -0.04444 + 1.54938I$ $b = -0.62145 - 1.31364I$ $c = 0.751259 - 0.563387I$ $d = 0.377218 + 0.474060I$	$5.87256 - 4.40083I$	$6.74431 + 3.49859I$
$u = 0.455697 - 1.200150I$ $a = 0.542114 + 0.781069I$ $b = 0.586363 - 0.691742I$ $c = -0.518554 + 0.530425I$ $d = -0.147334 - 0.766162I$	$5.87256 + 4.40083I$	$6.74431 - 3.49859I$
$u = 0.455697 - 1.200150I$ $a = -0.04444 - 1.54938I$ $b = -0.62145 + 1.31364I$ $c = 0.751259 + 0.563387I$ $d = 0.377218 - 0.474060I$	$5.87256 + 4.40083I$	$6.74431 - 3.49859I$

V. $\boldsymbol{I^u_5 = \langle -u^4+d,\ -u^2+c-1,\ u^4-u^3+u^2+b+1,\ 2u^4-u^3+4u^2+a+2,\ u^5-u^4+2u^3-u^2+u-1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^3+4u^2-4u+6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_6, c_7, c_9 c_{10}, c_{11}	$y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1$
c_2	$y^5 - 9y^4 + 32y^3 - 35y^2 - 5y - 1$
c_3, c_8	$y^5 + 3y^4 + 4y^3 + y^2 - y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.339110 + 0.822375I$ $a = 0.886294 + 0.706265I$ $b = 0.206354 - 0.340852I$ $c = 0.438694 - 0.557752I$ $d = 0.003977 + 0.626138I$	$0.32910 + 1.53058I$	$2.51511 - 4.43065I$
$u = -0.339110 - 0.822375I$ $a = 0.886294 - 0.706265I$ $b = 0.206354 + 0.340852I$ $c = 0.438694 + 0.557752I$ $d = 0.003977 - 0.626138I$	$0.32910 - 1.53058I$	$2.51511 + 4.43065I$
$u = 0.766826$ $a = -4.59272$ $b = -1.48288$ $c = 1.58802$ $d = 0.345770$	2.40108	3.48110
$u = 0.455697 + 1.200150I$ $a = 0.410064 + 0.037156I$ $b = -1.96491 + 0.62190I$ $c = -0.232705 + 1.093810I$ $d = 0.32314 - 2.69669I$	$5.87256 - 4.40083I$	$6.74431 + 3.49859I$
$u = 0.455697 - 1.200150I$ $a = 0.410064 - 0.037156I$ $b = -1.96491 - 0.62190I$ $c = -0.232705 - 1.093810I$ $d = 0.32314 + 2.69669I$	$5.87256 + 4.40083I$	$6.74431 - 3.49859I$

VI. $I_1^v = \langle c,\ d-1,\ b,\ a-1,\ v+1 \rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -1 \\ -1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 12$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_3 c_4, c_8	u
c_5, c_9	$u - 1$
c_6, c_7, c_{10} c_{11}	$u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_4, c_8	y
c_5, c_6, c_7 c_9, c_{10}, c_{11}	$y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$v = -1.00000$		
$a = \ \ 1.00000$		
$b = \qquad\quad 0$	3.28987	12.0000
$c = \qquad\quad 0$		
$d = \ \ 1.00000$		

VII. $\boldsymbol{I_2^v = \langle a,\ d,\ c-1,\ b+1,\ v-1\rangle}$

(i) Arc colorings

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

$$a_8 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_4 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_1 = \begin{pmatrix}0\\-1\end{pmatrix}$$

$$a_9 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_2 = \begin{pmatrix}1\\-1\end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix}1\\0\end{pmatrix}$$

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

$$a_6 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}1\\-1\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}1\\-1\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{10}, c_{11}	$u - 1$
c_2, c_4, c_5	$u + 1$
c_3, c_6, c_7 c_8, c_9	u

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5, c_{10}, c_{11}	$y-1$
c_3, c_6, c_7 c_8, c_9	y

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 1.00000$		
$a = 0$		
$b = -1.00000$	0	0
$c = 1.00000$		
$d = 0$		

VIII. $I_3^v = \langle a,\ d+1,\ c-a,\ b+1,\ v-1 \rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_8 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_1 = \begin{pmatrix}0\\-1\end{pmatrix}$$
$$a_9 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1\\-1\end{pmatrix}$$
$$a_5 = \begin{pmatrix}0\\1\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}0\\-1\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1\\1\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0\\1\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\-1\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\-1\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_9	$u-1$
c_2, c_4, c_6 c_7	$u+1$
c_3, c_5, c_8 c_{10}, c_{11}	u

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_6, c_7, c_9	$y-1$
c_3, c_5, c_8 c_{10}, c_{11}	y

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 1.00000$		
$a = 0$		
$b = -1.00000$	0	0
$c = 0$		
$d = -1.00000$		

IX. $I_4^v = \langle a,\ da + c - 1,\ dv + 1,\ cv - a - v,\ b + 1 \rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ d \end{pmatrix}$$
$$a_7 = \begin{pmatrix} v - 1 \\ -d \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -1 \\ -d \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ d - 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ d - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

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

(iv) u-Polynomials at the component : It cannot be defined for a positive dimension component.

(v) Riley Polynomials at the component : It cannot be defined for a positive dimension component.

(iv) Complex Volumes and Cusp Shapes

Solution to I_4^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = \cdots$ $a = \cdots$ $b = \cdots$ $c = \cdots$ $d = \cdots$	1.64493	$2.23718 - 0.09992I$

X. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u(u-1)^2(u^5+u^4-2u^3-u^2+u-1)$ $\cdot(u^7-u^6-u^5+2u^4+u^3-2u^2+u+1)^2$ $\cdot(u^{10}-u^9-2u^8+4u^7-4u^5+3u^4+u^3-2u^2+1)^2$ $\cdot(u^{17}-2u^{16}+\cdots-8u+4)$
c_2	$u(u+1)^2(u^5+5u^4+8u^3+3u^2-u+1)$ $\cdot(u^7+3u^6+7u^5+8u^4+9u^3+6u^2+5u+1)^2$ $\cdot((u^{10}+5u^9+\cdots+4u+1)^2)(u^{17}+6u^{16}+\cdots+88u+16)$
c_3, c_8	$u^3(u^5-u^4+2u^3-u^2+u-1)^5$ $\cdot((u^7+3u^6+\cdots-2u-2)^2)(u^{17}-2u^{16}+\cdots-4u^2+8)$
c_4	$u(u+1)^2(u^5+u^4-2u^3-u^2+u-1)$ $\cdot(u^7-u^6-u^5+2u^4+u^3-2u^2+u+1)^2$ $\cdot(u^{10}-u^9-2u^8+4u^7-4u^5+3u^4+u^3-2u^2+1)^2$ $\cdot(u^{17}-2u^{16}+\cdots-8u+4)$
c_5, c_{10}, c_{11}	$u(u-1)(u+1)(u^5+u^4-2u^3-u^2+u-1)^3$ $\cdot(u^{10}-u^9-2u^8+4u^7-4u^5+3u^4+u^3-2u^2+1)$ $\cdot(u^{14}+u^{13}+\cdots-4u-4)(u^{17}+2u^{16}+\cdots+3u+1)$
c_6, c_7	$u(u+1)^2(u^5+u^4-2u^3-u^2+u-1)^3$ $\cdot(u^{10}-u^9-2u^8+4u^7-4u^5+3u^4+u^3-2u^2+1)$ $\cdot(u^{14}+u^{13}+\cdots-4u-4)(u^{17}+2u^{16}+\cdots+3u+1)$
c_9	$u(u-1)^2(u^5+u^4-2u^3-u^2+u-1)^3$ $\cdot(u^{10}-u^9-2u^8+4u^7-4u^5+3u^4+u^3-2u^2+1)$ $\cdot(u^{14}+u^{13}+\cdots-4u-4)(u^{17}+2u^{16}+\cdots+3u+1)$

XI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y(y-1)^2(y^5-5y^4+8y^3-3y^2-y-1)$ $\cdot(y^7-3y^6+7y^5-8y^4+9y^3-6y^2+5y-1)^2$ $\cdot((y^{10}-5y^9+\cdots-4y+1)^2)(y^{17}-6y^{16}+\cdots+88y-16)$
c_2	$y(y-1)^2(y^5-9y^4+32y^3-35y^2-5y-1)$ $\cdot(y^7+5y^6+19y^5+36y^4+49y^3+38y^2+13y-1)^2$ $\cdot(y^{10}-y^9-6y^7+22y^6+6y^5+45y^4+15y^3+22y^2+4y+1)^2$ $\cdot(y^{17}+10y^{16}+\cdots+288y-256)$
c_3, c_8	$y^3(y^5+3y^4+4y^3+y^2-y-1)^5$ $\cdot(y^7+3y^6+4y^5+y^4-y^3+7y^2+8y-4)^2$ $\cdot(y^{17}+6y^{16}+\cdots+64y-64)$
c_5, c_6, c_7 c_9, c_{10}, c_{11}	$y(y-1)^2(y^5-5y^4+\cdots-y-1)^3(y^{10}-5y^9+\cdots-4y+1)$ $\cdot(y^{14}-11y^{13}+\cdots-40y+16)(y^{17}-20y^{16}+\cdots+27y-1)$