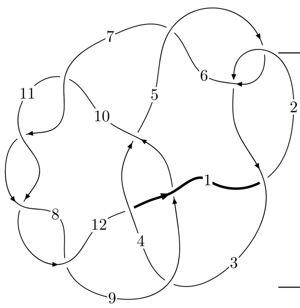
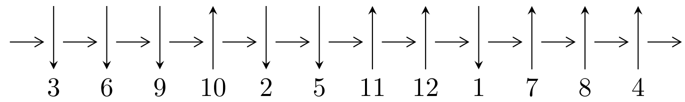
$12a_{0365}$ $(K12a_{0365})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 5.12893 \times 10^{45} u^{69} + 1.68277 \times 10^{46} u^{68} + \cdots + 4.63662 \times 10^{44} b - 6.98652 \times 10^{45}, \\ & 5.16448 \times 10^{45} u^{69} + 1.76696 \times 10^{46} u^{68} + \cdots + 4.63662 \times 10^{44} a - 1.03706 \times 10^{46},\ u^{70} + 4u^{69} + \cdots + 9u - 1 \end{aligned}$$

$$I_2^u = \langle u^2 + b,\ -u^2 + a + u,\ u^3 - u^2 + 1 \rangle$$

$$I_3^u = \langle b - a,\ a^2 + a - 1,\ u + 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 75 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.

$\boldsymbol{I_1^u = \langle 5.13\times10^{45}u^{69}+1.68\times10^{46}u^{68}+\cdots+4.64\times10^{44}b-6.99\times10^{45},\ 5.16\times10^{45}u^{69}+1.77\times10^{46}u^{68}+\cdots+4.64\times10^{44}a-1.04\times10^{46},\ u^{70}+4u^{69}+\cdots+9u-1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u \\ -u^3+u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^2+1 \\ u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -11.1385u^{69}-38.1088u^{68}+\cdots-173.343u+22.3667 \\ -11.0618u^{69}-36.2931u^{68}+\cdots-165.547u+15.0681 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -10.4892u^{69}-34.4257u^{68}+\cdots-156.393u+19.8877 \\ -14.0832u^{69}-46.3168u^{68}+\cdots-196.252u+18.2161 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 \\ u^5-u^3+u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -3.13298u^{69}-9.84215u^{68}+\cdots-17.5436u-1.28092 \\ 1.91095u^{69}+6.30251u^{68}+\cdots+32.7284u-2.47449 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -9.64324u^{69}-30.9560u^{68}+\cdots-143.863u+19.4560 \\ -13.0842u^{69}-43.4668u^{68}+\cdots-180.730u+16.7111 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 4.89906u^{69}+16.4905u^{68}+\cdots+65.1053u-7.37396 \\ 4.33074u^{69}+13.3350u^{68}+\cdots+61.2047u-5.58668 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -4.02982u^{69}-12.7973u^{68}+\cdots-53.5338u+10.0666 \\ -3.38116u^{69}-10.7655u^{68}+\cdots-42.5744u+3.57024 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -128.394u^{69}-417.002u^{68}+\cdots-1794.20u+180.894$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{70} + 20u^{69} + \cdots + 85u + 1$
c_2, c_5	$u^{70} + 4u^{69} + \cdots + 9u - 1$
c_3	$u^{70} - 3u^{69} + \cdots - 1882u - 203$
c_4	$u^{70} - u^{69} + \cdots - 1480438u - 582613$
c_7, c_8, c_{10} c_{11}	$u^{70} - 5u^{69} + \cdots - 5u - 1$
c_9	$u^{70} + 4u^{69} + \cdots + 8u + 4$
c_{12}	$u^{70} + 7u^{69} + \cdots + 20u + 8$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{70} + 64y^{69} + \cdots - 5893y + 1$
c_2, c_5	$y^{70} - 20y^{69} + \cdots - 85y + 1$
c_3	$y^{70} + 99y^{69} + \cdots + 1211930y + 41209$
c_4	$y^{70} + 27y^{69} + \cdots - 15150651595278y + 339437907769$
c_7, c_8, c_{10} c_{11}	$y^{70} - 87y^{69} + \cdots - 151y + 1$
c_9	$y^{70} + 12y^{69} + \cdots + 184y + 16$
c_{12}	$y^{70} - 23y^{69} + \cdots + 176y + 64$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.821992+0.604536I$ $a=-0.532818+0.414673I$ $b=-0.120277+1.017190I$	$3.21297+2.35752I$	0
$u=-0.821992-0.604536I$ $a=-0.532818-0.414673I$ $b=-0.120277-1.017190I$	$3.21297-2.35752I$	0
$u=0.936330+0.264637I$ $a=-0.896597-0.840149I$ $b=0.665791-0.751664I$	$-2.22755-3.95507I$	0
$u=0.936330-0.264637I$ $a=-0.896597+0.840149I$ $b=0.665791+0.751664I$	$-2.22755+3.95507I$	0
$u=-0.894877+0.344146I$ $a=0.584785-0.204131I$ $b=0.118346-0.802002I$	$-1.90739+1.11321I$	0
$u=-0.894877-0.344146I$ $a=0.584785+0.204131I$ $b=0.118346+0.802002I$	$-1.90739-1.11321I$	0
$u=0.853926+0.379140I$ $a=-1.07991+2.13533I$ $b=-0.768766-0.133800I$	$8.86997-3.71004I$	$5.02992+4.95815I$
$u=0.853926-0.379140I$ $a=-1.07991-2.13533I$ $b=-0.768766+0.133800I$	$8.86997+3.71004I$	$5.02992-4.95815I$
$u=0.076050+0.910271I$ $a=0.786878+0.417494I$ $b=-1.286790-0.266397I$	$12.21590+5.26874I$	$9.05075-4.23813I$
$u=0.076050-0.910271I$ $a=0.786878-0.417494I$ $b=-1.286790+0.266397I$	$12.21590-5.26874I$	$9.05075+4.23813I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.053090 + 0.329534I$ $a = 0.301987 + 0.839033I$ $b = -0.884319 + 0.768012I$	$0.05205 - 7.60424I$	0
$u = 1.053090 - 0.329534I$ $a = 0.301987 - 0.839033I$ $b = -0.884319 - 0.768012I$	$0.05205 + 7.60424I$	0
$u = -0.873719$ $a = 0.0354661$ $b = 0.465987$	-1.43825	-7.21730
$u = 0.839383 + 0.766541I$ $a = 1.97243 + 0.15164I$ $b = -1.28254 + 0.70957I$	$3.50192 - 1.96491I$	0
$u = 0.839383 - 0.766541I$ $a = 1.97243 - 0.15164I$ $b = -1.28254 - 0.70957I$	$3.50192 + 1.96491I$	0
$u = -1.130380 + 0.210061I$ $a = -0.464632 - 0.272711I$ $b = -0.451919 + 0.228098I$	$-0.745084 - 0.635310I$	0
$u = -1.130380 - 0.210061I$ $a = -0.464632 + 0.272711I$ $b = -0.451919 - 0.228098I$	$-0.745084 + 0.635310I$	0
$u = 0.879194 + 0.755731I$ $a = -2.58309 + 2.90548I$ $b = -0.13084 - 3.76242I$	$4.28859 - 2.86154I$	0
$u = 0.879194 - 0.755731I$ $a = -2.58309 - 2.90548I$ $b = -0.13084 + 3.76242I$	$4.28859 + 2.86154I$	0
$u = -0.818848 + 0.830702I$ $a = 1.51994 - 0.93351I$ $b = -1.068180 + 0.239833I$	$4.67474 - 1.95463I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.818848 - 0.830702I$ $a = 1.51994 + 0.93351I$ $b = -1.068180 - 0.239833I$	$4.67474 + 1.95463I$	0
$u = 0.756256 + 0.888290I$ $a = -0.908087 - 0.235986I$ $b = 0.978137 + 0.193385I$	$7.15283 - 0.79673I$	0
$u = 0.756256 - 0.888290I$ $a = -0.908087 + 0.235986I$ $b = 0.978137 - 0.193385I$	$7.15283 + 0.79673I$	0
$u = -0.779738 + 0.882642I$ $a = -1.34956 + 0.96896I$ $b = 1.40703 - 0.65492I$	$8.05847 - 6.46660I$	0
$u = -0.779738 - 0.882642I$ $a = -1.34956 - 0.96896I$ $b = 1.40703 + 0.65492I$	$8.05847 + 6.46660I$	0
$u = 0.921897 + 0.750500I$ $a = -1.04326 - 1.35120I$ $b = 1.282040 + 0.357501I$	$3.24664 - 3.77981I$	0
$u = 0.921897 - 0.750500I$ $a = -1.04326 + 1.35120I$ $b = 1.282040 - 0.357501I$	$3.24664 + 3.77981I$	0
$u = 0.890245 + 0.790410I$ $a = 2.42222 - 2.22983I$ $b = 0.02417 + 3.67851I$	$12.73530 - 2.97097I$	0
$u = 0.890245 - 0.790410I$ $a = 2.42222 + 2.22983I$ $b = 0.02417 - 3.67851I$	$12.73530 + 2.97097I$	0
$u = -0.795789 + 0.142506I$ $a = -1.53396 - 2.52646I$ $b = -1.17773 - 2.40528I$	$7.52169 + 0.34716I$	$21.0536 + 3.3715I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.795789 - 0.142506I$ $a = -1.53396 + 2.52646I$ $b = -1.17773 + 2.40528I$	$7.52169 - 0.34716I$	$21.0536 - 3.3715I$
$u = 1.140890 + 0.364834I$ $a = 0.103618 - 0.905249I$ $b = 1.175310 - 0.699942I$	$8.58977 - 9.64731I$	0
$u = 1.140890 - 0.364834I$ $a = 0.103618 + 0.905249I$ $b = 1.175310 + 0.699942I$	$8.58977 + 9.64731I$	0
$u = -0.879597 + 0.814650I$ $a = -1.56862 + 1.07443I$ $b = 0.986495 + 0.292630I$	$6.96123 + 3.17768I$	0
$u = -0.879597 - 0.814650I$ $a = -1.56862 - 1.07443I$ $b = 0.986495 - 0.292630I$	$6.96123 - 3.17768I$	0
$u = -0.765989 + 0.932811I$ $a = 1.26151 - 1.07522I$ $b = -1.77664 + 0.92423I$	$17.3945 - 9.1380I$	0
$u = -0.765989 - 0.932811I$ $a = 1.26151 + 1.07522I$ $b = -1.77664 - 0.92423I$	$17.3945 + 9.1380I$	0
$u = -0.861076 + 0.848477I$ $a = -0.859319 + 0.438890I$ $b = 1.26257 - 0.76714I$	$16.2859 - 0.4977I$	0
$u = -0.861076 - 0.848477I$ $a = -0.859319 - 0.438890I$ $b = 1.26257 + 0.76714I$	$16.2859 + 0.4977I$	0
$u = -0.908549 + 0.804614I$ $a = 1.43278 - 0.30075I$ $b = -1.103350 + 0.163447I$	$6.87034 + 2.88148I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.908549 - 0.804614I$ $a = 1.43278 + 0.30075I$ $b = -1.103350 - 0.163447I$	$6.87034 - 2.88148I$	0
$u = 0.744970 + 0.985585I$ $a = 0.647817 + 0.473956I$ $b = -1.163770 - 0.687098I$	$16.4531 - 0.4058I$	0
$u = 0.744970 - 0.985585I$ $a = 0.647817 - 0.473956I$ $b = -1.163770 + 0.687098I$	$16.4531 + 0.4058I$	0
$u = 0.069642 + 0.760028I$ $a = -0.793095 - 0.598689I$ $b = 0.859741 + 0.405238I$	$3.25439 + 3.89128I$	$8.22204 - 6.04817I$
$u = 0.069642 - 0.760028I$ $a = -0.793095 + 0.598689I$ $b = 0.859741 - 0.405238I$	$3.25439 - 3.89128I$	$8.22204 + 6.04817I$
$u = -0.958273 + 0.787843I$ $a = -1.80471 + 0.55498I$ $b = 1.167160 + 0.384223I$	$4.24350 + 8.00749I$	0
$u = -0.958273 - 0.787843I$ $a = -1.80471 - 0.55498I$ $b = 1.167160 - 0.384223I$	$4.24350 - 8.00749I$	0
$u = -0.939681 + 0.820477I$ $a = 1.49590 - 1.03839I$ $b = -1.084500 - 0.834712I$	$16.0406 + 6.7093I$	0
$u = -0.939681 - 0.820477I$ $a = 1.49590 + 1.03839I$ $b = -1.084500 + 0.834712I$	$16.0406 - 6.7093I$	0
$u = 0.715806 + 0.197898I$ $a = 1.90591 + 0.45104I$ $b = -0.684371 + 0.426921I$	$1.024240 - 0.486676I$	$5.73519 + 8.27485I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.715806 - 0.197898I$ $a = 1.90591 - 0.45104I$ $b = -0.684371 - 0.426921I$	$1.024240 + 0.486676I$	$5.73519 - 8.27485I$
$u = -0.731580 + 0.051178I$ $a = 0.44870 + 2.26858I$ $b = 0.01502 + 2.39231I$	$-0.138452 + 0.200334I$	$4.9583 + 27.7973I$
$u = -0.731580 - 0.051178I$ $a = 0.44870 - 2.26858I$ $b = 0.01502 - 2.39231I$	$-0.138452 - 0.200334I$	$4.9583 - 27.7973I$
$u = -1.250450 + 0.234036I$ $a = 0.590103 + 0.537183I$ $b = 0.859854 + 0.006608I$	$7.57482 - 1.28932I$	0
$u = -1.250450 - 0.234036I$ $a = 0.590103 - 0.537183I$ $b = 0.859854 - 0.006608I$	$7.57482 + 1.28932I$	0
$u = -1.001820 + 0.796995I$ $a = 1.91846 - 0.82073I$ $b = -1.44365 - 0.79366I$	$7.3655 + 12.6957I$	0
$u = -1.001820 - 0.796995I$ $a = 1.91846 + 0.82073I$ $b = -1.44365 + 0.79366I$	$7.3655 - 12.6957I$	0
$u = 1.012350 + 0.795855I$ $a = 1.031530 + 0.756442I$ $b = -0.955690 + 0.405302I$	$6.36559 - 5.43747I$	0
$u = 1.012350 - 0.795855I$ $a = 1.031530 - 0.756442I$ $b = -0.955690 - 0.405302I$	$6.36559 + 5.43747I$	0
$u = -1.033470 + 0.811620I$ $a = -1.97244 + 1.02030I$ $b = 1.74303 + 1.08840I$	$16.5467 + 15.5606I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.033470 - 0.811620I$ $a = -1.97244 - 1.02030I$ $b = 1.74303 - 1.08840I$	$16.5467 - 15.5606I$	0
$u = 0.597160 + 0.280730I$ $a = 0.35750 - 2.20071I$ $b = 0.268738 + 0.108233I$	$1.24480 - 1.64965I$	$7.01663 + 7.54846I$
$u = 0.597160 - 0.280730I$ $a = 0.35750 + 2.20071I$ $b = 0.268738 - 0.108233I$	$1.24480 + 1.64965I$	$7.01663 - 7.54846I$
$u = 1.069430 + 0.833772I$ $a = -1.142940 - 0.662361I$ $b = 1.013930 - 0.881403I$	$15.4304 - 6.2393I$	0
$u = 1.069430 - 0.833772I$ $a = -1.142940 + 0.662361I$ $b = 1.013930 + 0.881403I$	$15.4304 + 6.2393I$	0
$u = 0.345521 + 0.465734I$ $a = -1.78206 + 0.64019I$ $b = 1.51987 - 0.09297I$	$10.36090 + 0.46448I$	$7.45738 + 2.55790I$
$u = 0.345521 - 0.465734I$ $a = -1.78206 - 0.64019I$ $b = 1.51987 + 0.09297I$	$10.36090 - 0.46448I$	$7.45738 - 2.55790I$
$u = 0.049655 + 0.436764I$ $a = 1.29855 + 1.08613I$ $b = -0.333410 - 0.509182I$	$0.274835 + 1.373660I$	$2.74778 - 4.32482I$
$u = 0.049655 - 0.436764I$ $a = 1.29855 - 1.08613I$ $b = -0.333410 + 0.509182I$	$0.274835 - 1.373660I$	$2.74778 + 4.32482I$
$u = 0.114333$ $a = 5.43350$ $b = -0.726957$	1.36710	7.44230

II. $\boldsymbol{I_2^u = \langle u^2 + b,\ -u^2 + a + u,\ u^3 - u^2 + 1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^2 - u \\ -u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 2u^2 - u - 1 \\ -2u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^2 - 1 \\ -u^2 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} 2u^2 - u - 1 \\ -2u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u^2 - 1 \\ -u^2 \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2u^2 + 7u + 2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.877439 + 0.744862I$ $a = -0.662359 + 0.562280I$ $b = -0.215080 - 1.307140I$	$4.66906 - 2.82812I$	$7.71191 + 2.59975I$
$u = 0.877439 - 0.744862I$ $a = -0.662359 - 0.562280I$ $b = -0.215080 + 1.307140I$	$4.66906 + 2.82812I$	$7.71191 - 2.59975I$
$u = -0.754878$ $a = 1.32472$ $b = -0.569840$	0.531480	-4.42380

III. $I_3^u = \langle b - a,\ a^2 + a - 1,\ u + 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 5$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = \quad 0.618034$ $b = \quad 0.618034$	-0.657974	5.00000
$u = -1.00000$ $a = -1.61803$ $b = -1.61803$	7.23771	5.00000

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^2)(u^3-u^2+2u-1)(u^{70}+20u^{69}+\cdots+85u+1)$
c_2	$((u-1)^2)(u^3+u^2-1)(u^{70}+4u^{69}+\cdots+9u-1)$
c_3	$(u^2+u-1)(u^3+u^2+2u+1)(u^{70}-3u^{69}+\cdots-1882u-203)$
c_4	$(u^2+u-1)(u^3+u^2+2u+1)(u^{70}-u^{69}+\cdots-1480438u-582613)$
c_5	$((u+1)^2)(u^3-u^2+1)(u^{70}+4u^{69}+\cdots+9u-1)$
c_6	$((u+1)^2)(u^3+u^2+2u+1)(u^{70}+20u^{69}+\cdots+85u+1)$
c_7, c_8	$((u+1)^3)(u^2-u-1)(u^{70}-5u^{69}+\cdots-5u-1)$
c_9	$u^2(u+1)^3(u^{70}+4u^{69}+\cdots+8u+4)$
c_{10}, c_{11}	$((u-1)^3)(u^2+u-1)(u^{70}-5u^{69}+\cdots-5u-1)$
c_{12}	$u^3(u-1)^2(u^{70}+7u^{69}+\cdots+20u+8)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_6	$((y-1)^2)(y^3+3y^2+2y-1)(y^{70}+64y^{69}+\cdots-5893y+1)$
c_2, c_5	$((y-1)^2)(y^3-y^2+2y-1)(y^{70}-20y^{69}+\cdots-85y+1)$
c_3	$(y^2-3y+1)(y^3+3y^2+2y-1)$ $\cdot(y^{70}+99y^{69}+\cdots+1211930y+41209)$
c_4	$(y^2-3y+1)(y^3+3y^2+2y-1)$ $\cdot(y^{70}+27y^{69}+\cdots-15150651595278y+339437907769)$
c_7, c_8, c_{10} c_{11}	$((y-1)^3)(y^2-3y+1)(y^{70}-87y^{69}+\cdots-151y+1)$
c_9	$y^2(y-1)^3(y^{70}+12y^{69}+\cdots+184y+16)$
c_{12}	$y^3(y-1)^2(y^{70}-23y^{69}+\cdots+176y+64)$