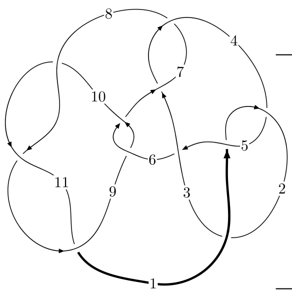
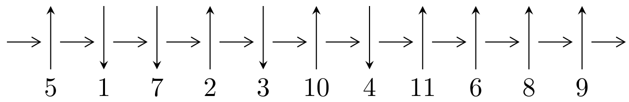
$11a_3$ ($K11a_3$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 4.73407 \times 10^{19} u^{65} - 1.78062 \times 10^{20} u^{64} + \cdots + 6.92121 \times 10^{19} b - 9.60242 \times 10^{19},$$
$$2.00992 \times 10^{19} u^{65} - 1.27810 \times 10^{20} u^{64} + \cdots + 6.92121 \times 10^{19} a + 5.30233 \times 10^{20},\ u^{66} - 4u^{65} + \cdots - 14u +$$
$$I_2^u = \langle b - 1,\ u^4 - u^3 + 2u^2 + a - u + 1,\ u^5 - u^4 + 2u^3 - u^2 + u - 1 \rangle$$
$$I_3^u = \langle -au + b + u,\ a^2 - au - 3a + 2,\ u^2 + u + 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 75 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. $\boldsymbol{I_1^u =}$
$\boldsymbol{\langle 4.73\times10^{19}u^{65}-1.78\times10^{20}u^{64}+\cdots+6.92\times10^{19}b-9.60\times10^{19},\ 2.01\times10^{19}u^{65}-1.28\times10^{20}u^{64}+\cdots+6.92\times10^{19}a+5.30\times10^{20},\ u^{66}-4u^{65}+\cdots-14u+1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_5 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_3 = \begin{pmatrix}u^2+1\\-u^2\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-u^5-2u^3-u\\u^5+u^3+u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-u\\u^3+u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-0.290400u^{65}+1.84665u^{64}+\cdots+17.1503u-7.66099\\-0.683994u^{65}+2.57271u^{64}+\cdots-8.88365u+1.38739\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0.477604u^{65}-0.313880u^{64}+\cdots+9.01518u-4.46864\\-1.76402u^{65}+7.20916u^{64}+\cdots-25.9654u+2.45043\end{pmatrix}$$
$$a_8 = \begin{pmatrix}0.352013u^{65}-2.74835u^{64}+\cdots+30.8461u-5.72790\\1.33994u^{65}-5.22709u^{64}+\cdots+16.3365u-0.873918\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0.996758u^{65}-2.80838u^{64}+\cdots+21.4371u-5.07963\\-1.17865u^{65}+4.19945u^{64}+\cdots-8.87499u+0.996758\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}0.773579u^{65}-2.81719u^{64}+\cdots+35.3229u-9.01284\\-0.443910u^{65}+1.66335u^{64}+\cdots-5.63834u+1.19827\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}0.773579u^{65}-2.81719u^{64}+\cdots+35.3229u-9.01284\\-0.443910u^{65}+1.66335u^{64}+\cdots-5.63834u+1.19827\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{8853653209808223794 1}{69212056571253139646}u^{65} - \frac{346942669555547012397}{69212056571253139646}u^{64} + \cdots - \frac{268268530941069986709 7}{69212056571253139646}u + \frac{417517236906079889612}{34606028285626569823}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{66} + 4u^{65} + \cdots + 14u + 1$
c_2	$u^{66} + 32u^{65} + \cdots - 86u + 1$
c_3, c_7	$u^{66} + 2u^{65} + \cdots - 16u - 16$
c_5	$u^{66} - 4u^{65} + \cdots + 4020u + 977$
c_6, c_9	$u^{66} - 3u^{65} + \cdots - 96u + 32$
c_8, c_{10}, c_{11}	$u^{66} + 8u^{65} + \cdots - 12u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{66} + 32y^{65} + \cdots - 86y + 1$
c_2	$y^{66} + 8y^{65} + \cdots - 8342y + 1$
c_3, c_7	$y^{66} - 30y^{65} + \cdots - 2688y + 256$
c_5	$y^{66} - 16y^{65} + \cdots - 97788750y + 954529$
c_6, c_9	$y^{66} - 39y^{65} + \cdots - 7680y + 1024$
c_8, c_{10}, c_{11}	$y^{66} - 64y^{65} + \cdots - 92y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.447737 + 0.886933I$ $a = 1.92832 + 1.33209I$ $b = 0.960667 + 0.075689I$	$1.35276 - 1.84672I$	$28.2718 + 21.5804I$
$u = -0.447737 - 0.886933I$ $a = 1.92832 - 1.33209I$ $b = 0.960667 - 0.075689I$	$1.35276 + 1.84672I$	$28.2718 - 21.5804I$
$u = -0.801015 + 0.661180I$ $a = 2.30437 + 0.57137I$ $b = -1.45947 + 0.22980I$	$7.91868 - 6.59447I$	$0. + 6.00646I$
$u = -0.801015 - 0.661180I$ $a = 2.30437 - 0.57137I$ $b = -1.45947 - 0.22980I$	$7.91868 + 6.59447I$	$0. - 6.00646I$
$u = 0.860042 + 0.369782I$ $a = 2.14032 + 0.32890I$ $b = -1.47569 + 0.33459I$	$6.19769 - 10.10890I$	$7.50011 + 5.44756I$
$u = 0.860042 - 0.369782I$ $a = 2.14032 - 0.32890I$ $b = -1.47569 - 0.33459I$	$6.19769 + 10.10890I$	$7.50011 - 5.44756I$
$u = -0.668703 + 0.641624I$ $a = -0.453771 + 0.163173I$ $b = 0.430801 - 0.625032I$	$1.84919 - 3.47096I$	$5.53731 + 7.57944I$
$u = -0.668703 - 0.641624I$ $a = -0.453771 - 0.163173I$ $b = 0.430801 + 0.625032I$	$1.84919 + 3.47096I$	$5.53731 - 7.57944I$
$u = -0.375168 + 1.011290I$ $a = 1.006090 + 0.919127I$ $b = 0.091003 + 0.416704I$	$-1.05484 - 1.47223I$	0
$u = -0.375168 - 1.011290I$ $a = 1.006090 - 0.919127I$ $b = 0.091003 - 0.416704I$	$-1.05484 + 1.47223I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.511878 + 0.976459I$ $a = 1.64988 - 1.32112I$ $b = -1.66385 + 0.06802I$	$8.80229 + 2.61597I$	0
$u = 0.511878 - 0.976459I$ $a = 1.64988 + 1.32112I$ $b = -1.66385 - 0.06802I$	$8.80229 - 2.61597I$	0
$u = 0.246513 + 1.075850I$ $a = -0.702183 - 0.085805I$ $b = 1.331250 - 0.286376I$	$-1.20633 - 0.98148I$	0
$u = 0.246513 - 1.075850I$ $a = -0.702183 + 0.085805I$ $b = 1.331250 + 0.286376I$	$-1.20633 + 0.98148I$	0
$u = -0.593695 + 0.930839I$ $a = 0.633018 - 0.417893I$ $b = 0.444003 + 0.428029I$	$0.99829 - 1.41928I$	0
$u = -0.593695 - 0.930839I$ $a = 0.633018 + 0.417893I$ $b = 0.444003 - 0.428029I$	$0.99829 + 1.41928I$	0
$u = 0.895716$ $a = 1.28200$ $b = -1.26436$	0.335750	9.51520
$u = 0.323236 + 1.068020I$ $a = -0.71514 + 1.43717I$ $b = 1.056090 + 0.536731I$	$-1.87944 + 1.86021I$	0
$u = 0.323236 - 1.068020I$ $a = -0.71514 - 1.43717I$ $b = 1.056090 - 0.536731I$	$-1.87944 - 1.86021I$	0
$u = 0.583954 + 0.630467I$ $a = 2.47273 - 1.26841I$ $b = -1.58923 - 0.11013I$	$9.82684 + 1.74748I$	$11.13070 + 1.76182I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.583954 - 0.630467I$ $a = 2.47273 + 1.26841I$ $b = -1.58923 + 0.11013I$	$9.82684 - 1.74748I$	$11.13070 - 1.76182I$
$u = 0.779756 + 0.337981I$ $a = -0.457305 + 0.348225I$ $b = 0.360992 - 0.860365I$	$0.29837 - 5.77580I$	$4.51138 + 5.26923I$
$u = 0.779756 - 0.337981I$ $a = -0.457305 - 0.348225I$ $b = 0.360992 + 0.860365I$	$0.29837 + 5.77580I$	$4.51138 - 5.26923I$
$u = -0.553417 + 1.013290I$ $a = -1.98755 - 2.54381I$ $b = 1.277910 - 0.085579I$	$2.55061 - 3.21838I$	0
$u = -0.553417 - 1.013290I$ $a = -1.98755 + 2.54381I$ $b = 1.277910 + 0.085579I$	$2.55061 + 3.21838I$	0
$u = -0.350315 + 0.758669I$ $a = 0.903762 - 0.185239I$ $b = -0.0960512 - 0.0497974I$	$-0.23109 - 1.44442I$	$-1.44757 + 4.95270I$
$u = -0.350315 - 0.758669I$ $a = 0.903762 + 0.185239I$ $b = -0.0960512 + 0.0497974I$	$-0.23109 + 1.44442I$	$-1.44757 - 4.95270I$
$u = -0.633698 + 0.542548I$ $a = -3.20205 + 0.42108I$ $b = 1.320010 - 0.014248I$	$3.94155 - 1.44668I$	$7.42047 + 3.11484I$
$u = -0.633698 - 0.542548I$ $a = -3.20205 - 0.42108I$ $b = 1.320010 + 0.014248I$	$3.94155 + 1.44668I$	$7.42047 - 3.11484I$
$u = 0.221525 + 1.144870I$ $a = 0.415305 - 0.704627I$ $b = 0.220112 - 0.840668I$	$-4.39164 - 2.99363I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.221525 - 1.144870I$ $a = 0.415305 + 0.704627I$ $b = 0.220112 + 0.840668I$	$-4.39164 + 2.99363I$	0
$u = -0.763032 + 0.307439I$ $a = 1.74149 - 0.72557I$ $b = -1.46443 - 0.20883I$	$8.22126 + 3.50783I$	$9.72944 - 1.69161I$
$u = -0.763032 - 0.307439I$ $a = 1.74149 + 0.72557I$ $b = -1.46443 + 0.20883I$	$8.22126 - 3.50783I$	$9.72944 + 1.69161I$
$u = -0.263556 + 1.157410I$ $a = -0.512295 - 0.085483I$ $b = -1.378620 - 0.146836I$	$3.75032 + 0.51941I$	0
$u = -0.263556 - 1.157410I$ $a = -0.512295 + 0.085483I$ $b = -1.378620 + 0.146836I$	$3.75032 - 0.51941I$	0
$u = -0.527326 + 1.065790I$ $a = -0.79696 - 1.22027I$ $b = 0.329323 - 0.680569I$	$0.11788 - 5.06683I$	0
$u = -0.527326 - 1.065790I$ $a = -0.79696 + 1.22027I$ $b = 0.329323 + 0.680569I$	$0.11788 + 5.06683I$	0
$u = 0.721013 + 0.363719I$ $a = -2.95924 - 0.12833I$ $b = 1.41518 - 0.16379I$	$3.08928 - 3.39261I$	$6.58379 + 2.75306I$
$u = 0.721013 - 0.363719I$ $a = -2.95924 + 0.12833I$ $b = 1.41518 + 0.16379I$	$3.08928 + 3.39261I$	$6.58379 - 2.75306I$
$u = -0.711073 + 0.974927I$ $a = 1.58757 + 1.06886I$ $b = -1.44305 - 0.18150I$	$6.98766 + 0.95393I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.711073 - 0.974927I$ $a = 1.58757 - 1.06886I$ $b = -1.44305 + 0.18150I$	$6.98766 - 0.95393I$	0
$u = 0.363610 + 1.151710I$ $a = 0.015002 + 0.368525I$ $b = -0.207558 + 0.642919I$	$-6.04161 + 2.45340I$	0
$u = 0.363610 - 1.151710I$ $a = 0.015002 - 0.368525I$ $b = -0.207558 - 0.642919I$	$-6.04161 - 2.45340I$	0
$u = 0.536106 + 1.092070I$ $a = 0.109685 + 0.492756I$ $b = 0.901979 - 0.712422I$	$-0.40126 + 5.25319I$	0
$u = 0.536106 - 1.092070I$ $a = 0.109685 - 0.492756I$ $b = 0.901979 + 0.712422I$	$-0.40126 - 5.25319I$	0
$u = 0.156166 + 1.218030I$ $a = 0.085968 + 0.372608I$ $b = -1.40723 + 0.32906I$	$0.79611 - 7.18319I$	0
$u = 0.156166 - 1.218030I$ $a = 0.085968 - 0.372608I$ $b = -1.40723 - 0.32906I$	$0.79611 + 7.18319I$	0
$u = 0.563876 + 1.106240I$ $a = -1.90945 + 1.84534I$ $b = 1.46658 + 0.20344I$	$0.91936 + 8.30279I$	0
$u = 0.563876 - 1.106240I$ $a = -1.90945 - 1.84534I$ $b = 1.46658 - 0.20344I$	$0.91936 - 8.30279I$	0
$u = 0.492275 + 1.150200I$ $a = 0.949530 - 0.599065I$ $b = -0.409340 - 0.495814I$	$-5.17298 + 5.63394I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.492275 - 1.150200I$ $a = 0.949530 + 0.599065I$ $b = -0.409340 + 0.495814I$	$-5.17298 - 5.63394I$	0
$u = -0.563535 + 1.134560I$ $a = 0.88677 + 2.16349I$ $b = -1.43841 + 0.26048I$	$5.80147 - 8.50464I$	0
$u = -0.563535 - 1.134560I$ $a = 0.88677 - 2.16349I$ $b = -1.43841 - 0.26048I$	$5.80147 + 8.50464I$	0
$u = 0.575045 + 1.130160I$ $a = -1.128290 + 0.629597I$ $b = 0.356915 + 0.930272I$	$-2.03842 + 10.86450I$	0
$u = 0.575045 - 1.130160I$ $a = -1.128290 - 0.629597I$ $b = 0.356915 - 0.930272I$	$-2.03842 - 10.86450I$	0
$u = 0.712768 + 0.146826I$ $a = 0.827880 - 0.176126I$ $b = -0.256675 + 0.450186I$	$-2.30399 - 1.13049I$	$-0.90491 + 1.23607I$
$u = 0.712768 - 0.146826I$ $a = 0.827880 + 0.176126I$ $b = -0.256675 - 0.450186I$	$-2.30399 + 1.13049I$	$-0.90491 - 1.23607I$
$u = 0.626648 + 0.353158I$ $a = -1.406460 + 0.110890I$ $b = 0.808652 + 0.620740I$	$1.72098 - 0.65765I$	$7.06140 + 0.81107I$
$u = 0.626648 - 0.353158I$ $a = -1.406460 - 0.110890I$ $b = 0.808652 - 0.620740I$	$1.72098 + 0.65765I$	$7.06140 - 0.81107I$
$u = -0.578683 + 0.421784I$ $a = -0.654555 + 0.516153I$ $b = 0.475930 + 0.593283I$	$1.99483 + 0.60906I$	$7.48413 - 1.51323I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.578683 - 0.421784I$ $a = -0.654555 - 0.516153I$ $b = 0.475930 - 0.593283I$	$1.99483 - 0.60906I$	$7.48413 + 1.51323I$
$u = 0.611501 + 1.147440I$ $a = 1.49873 - 1.96189I$ $b = -1.48463 - 0.36648I$	$3.8588 + 15.5500I$	0
$u = 0.611501 - 1.147440I$ $a = 1.49873 + 1.96189I$ $b = -1.48463 + 0.36648I$	$3.8588 - 15.5500I$	0
$u = 0.444892 + 1.249160I$ $a = 0.162825 - 0.849550I$ $b = -1.218660 - 0.058791I$	$-3.53690 + 4.73542I$	0
$u = 0.444892 - 1.249160I$ $a = 0.162825 + 0.849550I$ $b = -1.218660 + 0.058791I$	$-3.53690 - 4.73542I$	0
$u = 0.104581$ $a = -6.15002$ $b = 0.755340$	1.11358	9.06930

II. $\boldsymbol{I_2^u = \langle b-1,\ u^4-u^3+2u^2+a-u+1,\ u^5-u^4+2u^3-u^2+u-1\rangle}$

(i) Arc colorings

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

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

$$a_2 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$

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

$$a_6 = \begin{pmatrix}-u^4-u^2-1\\u^4-u^3+u^2+1\end{pmatrix}$$

$$a_4 = \begin{pmatrix}-u\\u^3+u\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-u^4+u^3-2u^2+u-1\\1\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}-u^4+u^3-2u^2+u\\1\end{pmatrix}$$

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

$$a_7 = \begin{pmatrix}-u^4-u^2-1\\u^4-u^3+u^2+1\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-u^4+u^3-2u^2+u-1\\1\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-u^4+u^3-2u^2+u-1\\1\end{pmatrix}$$

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.339110 + 0.822375I$ $a = 0.428550 + 1.039280I$ $b = 1.00000$	$1.31583 - 1.53058I$	$8.47842 - 1.00973I$
$u = -0.339110 - 0.822375I$ $a = 0.428550 - 1.039280I$ $b = 1.00000$	$1.31583 + 1.53058I$	$8.47842 + 1.00973I$
$u = 0.766826$ $a = -1.30408$ $b = 1.00000$	-0.756147	1.86520
$u = 0.455697 + 1.200150I$ $a = -0.276511 + 0.728237I$ $b = 1.00000$	$-4.22763 + 4.40083I$	$-2.41100 - 1.19010I$
$u = 0.455697 - 1.200150I$ $a = -0.276511 - 0.728237I$ $b = 1.00000$	$-4.22763 - 4.40083I$	$-2.41100 + 1.19010I$

III. $\boldsymbol{I_3^u = \langle -au + b + u,\ a^2 - au - 3a + 2,\ u^2 + u + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -3au - 6a + 10u + 14$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = 0.690983 - 0.535233I$ $b = 0.618034$	$0.98696 - 2.02988I$	$4.50000 + 9.27358I$
$u = -0.500000 + 0.866025I$ $a = 1.80902 + 1.40126I$ $b = -1.61803$	$8.88264 - 2.02988I$	$4.50000 - 2.34537I$
$u = -0.500000 - 0.866025I$ $a = 0.690983 + 0.535233I$ $b = 0.618034$	$0.98696 + 2.02988I$	$4.50000 - 9.27358I$
$u = -0.500000 - 0.866025I$ $a = 1.80902 - 1.40126I$ $b = -1.61803$	$8.88264 + 2.02988I$	$4.50000 + 2.34537I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2+u+1)^2)(u^5-u^4+\cdots+u-1)(u^{66}+4u^{65}+\cdots+14u+1)$
c_2	$((u^2+u+1)^2)(u^5+3u^4+\cdots-u-1)(u^{66}+32u^{65}+\cdots-86u+1)$
c_3	$u^4(u^5+u^4+\cdots+u-1)(u^{66}+2u^{65}+\cdots-16u-16)$
c_4	$((u^2-u+1)^2)(u^5+u^4+\cdots+u+1)(u^{66}+4u^{65}+\cdots+14u+1)$
c_5	$(u^2+u+1)^2(u^5-u^4-2u^3+u^2+u+1)$ $\cdot(u^{66}-4u^{65}+\cdots+4020u+977)$
c_6	$u^5(u^2-u-1)^2(u^{66}-3u^{65}+\cdots-96u+32)$
c_7	$u^4(u^5-u^4+\cdots+u+1)(u^{66}+2u^{65}+\cdots-16u-16)$
c_8	$((u+1)^5)(u^2-u-1)^2(u^{66}+8u^{65}+\cdots-12u-1)$
c_9	$u^5(u^2+u-1)^2(u^{66}-3u^{65}+\cdots-96u+32)$
c_{10}, c_{11}	$((u-1)^5)(u^2+u-1)^2(u^{66}+8u^{65}+\cdots-12u-1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y^2+y+1)^2)(y^5+3y^4+\cdots-y-1)(y^{66}+32y^{65}+\cdots-86y+1)$
c_2	$(y^2+y+1)^2(y^5-y^4+8y^3-3y^2+3y-1)$ $\cdot(y^{66}+8y^{65}+\cdots-8342y+1)$
c_3, c_7	$y^4(y^5-5y^4+\cdots-y-1)(y^{66}-30y^{65}+\cdots-2688y+256)$
c_5	$(y^2+y+1)^2(y^5-5y^4+8y^3-3y^2-y-1)$ $\cdot(y^{66}-16y^{65}+\cdots-97788750y+954529)$
c_6, c_9	$y^5(y^2-3y+1)^2(y^{66}-39y^{65}+\cdots-7680y+1024)$
c_8, c_{10}, c_{11}	$((y-1)^5)(y^2-3y+1)^2(y^{66}-64y^{65}+\cdots-92y+1)$