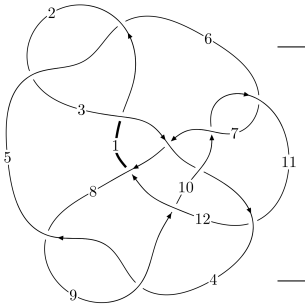
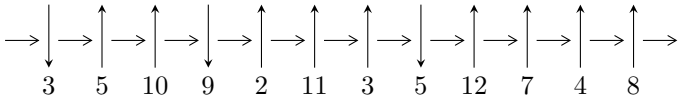
$12n_{0429}$ $(K12n_{0429})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 5.47377 \times 10^{153} u^{62} - 1.31028 \times 10^{154} u^{61} + \cdots + 3.40987 \times 10^{153} b - 1.11096 \times 10^{154}, \\ & - 1.23420 \times 10^{154} u^{62} + 3.17083 \times 10^{154} u^{61} + \cdots + 3.40987 \times 10^{153} a + 7.52944 \times 10^{153}, \\ & u^{63} - 3u^{62} + \cdots - 2u + 1 \rangle \\ I_2^u = \langle & 1.49872 \times 10^{24} u^{27} + 8.28499 \times 10^{24} u^{26} + \cdots + 1.24369 \times 10^{24} b + 2.46098 \times 10^{24}, \\ & 4.65953 \times 10^{23} u^{27} + 2.34056 \times 10^{24} u^{26} + \cdots + 1.24369 \times 10^{24} a - 2.67968 \times 10^{24}, \ u^{28} + 6u^{27} + \cdots + 2u + 1 \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 91 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. $\boldsymbol{I_1^u = \langle 5.47 \times 10^{153} u^{62} - 1.31 \times 10^{154} u^{61} + \cdots + 3.41 \times 10^{153} b - 1.11 \times 10^{154},\ -1.23 \times 10^{154} u^{62} + 3.17 \times 10^{154} u^{61} + \cdots + 3.41 \times 10^{153} a + 7.53 \times 10^{153},\ u^{63} - 3u^{62} + \cdots - 2u + 1 \rangle}$

(i) Arc colorings

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

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 3.61950u^{62} - 9.29897u^{61} + \cdots - 13.6429u - 2.20813 \\ -1.60527u^{62} + 3.84260u^{61} + \cdots + 0.655818u + 3.25806 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 2.01423u^{62} - 5.45637u^{61} + \cdots - 12.9870u + 1.04993 \\ -1.60527u^{62} + 3.84260u^{61} + \cdots + 0.655818u + 3.25806 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 3.54024u^{62} - 9.21354u^{61} + \cdots - 12.8013u - 1.62182 \\ -2.02759u^{62} + 4.91478u^{61} + \cdots + 0.540061u + 4.07895 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 3.74628u^{62} - 11.2722u^{61} + \cdots - 3.10623u + 2.72252 \\ -1.51679u^{62} + 3.81152u^{61} + \cdots + 1.37033u + 1.85130 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 2.19593u^{62} - 6.52686u^{61} + \cdots + 43.5636u - 10.7702 \\ -1.13065u^{62} + 2.95970u^{61} + \cdots - 2.68920u + 1.83845 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -2.38714u^{62} + 6.56354u^{61} + \cdots + 1.89950u - 0.514982 \\ 1.03714u^{62} - 2.42670u^{61} + \cdots - 2.07634u - 1.29115 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1.65476u^{62} - 5.01519u^{61} + \cdots + 39.9437u - 9.20657 \\ -1.68517u^{62} + 4.43717u^{61} + \cdots - 3.41249u + 3.07668 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -1.57756u^{62} + 3.19097u^{61} + \cdots + 25.5743u - 0.805183 \\ 0.777466u^{62} - 1.73082u^{61} + \cdots - 1.37482u - 1.84107 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -3.47962u^{62} + 11.2423u^{61} + \cdots + 14.4544u - 6.72853 \\ 0.0868469u^{62} - 0.443124u^{61} + \cdots - 4.50613u + 1.35000 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4.27944u^{62} + 11.2388u^{61} + \cdots + 21.3904u + 3.08407$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{63}+84u^{62}+\cdots+6421262u-290521$
c_2, c_5	$u^{63}+42u^{61}+\cdots+9624u-539$
c_3	$u^{63}+u^{62}+\cdots+41175u-7877$
c_4, c_8	$u^{63}+3u^{62}+\cdots-596u-79$
c_6, c_{10}	$u^{63}-u^{62}+\cdots-237u-113$
c_7	$u^{63}+2u^{62}+\cdots+3704u-3077$
c_9	$u^{63}+3u^{62}+\cdots-2u-1$
c_{11}	$u^{63}-5u^{62}+\cdots-6392u-811$
c_{12}	$u^{63}-u^{62}+\cdots+39596508u-17977599$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{63} - 188y^{62} + \cdots + 31966757369702y - 84402451441$
c_2, c_5	$y^{63} + 84y^{62} + \cdots + 6421262y - 290521$
c_3	$y^{63} + 27y^{62} + \cdots - 719912377y - 62047129$
c_4, c_8	$y^{63} + 27y^{62} + \cdots + 125010y - 6241$
c_6, c_{10}	$y^{63} + 49y^{62} + \cdots - 228139y - 12769$
c_7	$y^{63} + 94y^{62} + \cdots - 340978482y - 9467929$
c_9	$y^{63} - 7y^{62} + \cdots + 2y - 1$
c_{11}	$y^{63} + 3y^{62} + \cdots + 494194y - 657721$
c_{12}	$y^{63} + 111y^{62} + \cdots - 5213792993463072y - 323194065804801$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.854897+0.532929I$ $a=-0.100050-1.334720I$ $b=\ 1.29417+1.60493I$	$-10.02610-5.81545I$	$3.97856+5.33947I$
$u=-0.854897-0.532929I$ $a=-0.100050+1.334720I$ $b=\ 1.29417-1.60493I$	$-10.02610+5.81545I$	$3.97856-5.33947I$
$u=\ 0.718348+0.648111I$ $a=\ 0.449487+1.049550I$ $b=-0.87436-1.40145I$	$-3.35191+2.65403I$	$2.16615-3.99621I$
$u=\ 0.718348-0.648111I$ $a=\ 0.449487-1.049550I$ $b=-0.87436+1.40145I$	$-3.35191-2.65403I$	$2.16615+3.99621I$
$u=-0.577833+0.736890I$ $a=\ 0.459738+0.125771I$ $b=\ 0.646165+0.254111I$	$-1.42068-2.29477I$	$3.60284+3.89630I$
$u=-0.577833-0.736890I$ $a=\ 0.459738-0.125771I$ $b=\ 0.646165-0.254111I$	$-1.42068+2.29477I$	$3.60284-3.89630I$
$u=-0.384316+1.017510I$ $a=-0.775849-0.891790I$ $b=\ 0.619662-1.136280I$	$-11.98870+1.15184I$	0
$u=-0.384316-1.017510I$ $a=-0.775849+0.891790I$ $b=\ 0.619662+1.136280I$	$-11.98870-1.15184I$	0
$u=\ 0.012682+1.109030I$ $a=-0.273611+0.515935I$ $b=-0.344619+0.593299I$	$-4.43543-0.90885I$	0
$u=\ 0.012682-1.109030I$ $a=-0.273611-0.515935I$ $b=-0.344619-0.593299I$	$-4.43543+0.90885I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.695265 + 0.873390I$ $a = -0.668200 - 0.224791I$ $b = 1.78864 + 0.50256I$	$-16.4493 + 6.5283I$	0
$u = 0.695265 - 0.873390I$ $a = -0.668200 + 0.224791I$ $b = 1.78864 - 0.50256I$	$-16.4493 - 6.5283I$	0
$u = 0.711162 + 0.860779I$ $a = -0.608050 - 0.358721I$ $b = -0.773545 + 0.642592I$	$-3.49757 + 7.28817I$	0
$u = 0.711162 - 0.860779I$ $a = -0.608050 + 0.358721I$ $b = -0.773545 - 0.642592I$	$-3.49757 - 7.28817I$	0
$u = 0.152045 + 1.129920I$ $a = 0.543142 - 0.504864I$ $b = -0.517588 - 0.574682I$	$-8.52986 - 1.24389I$	0
$u = 0.152045 - 1.129920I$ $a = 0.543142 + 0.504864I$ $b = -0.517588 + 0.574682I$	$-8.52986 + 1.24389I$	0
$u = 0.927854 + 0.686316I$ $a = 0.129275 + 0.765769I$ $b = 0.790898 - 0.247331I$	$-2.96009 + 2.72627I$	0
$u = 0.927854 - 0.686316I$ $a = 0.129275 - 0.765769I$ $b = 0.790898 + 0.247331I$	$-2.96009 - 2.72627I$	0
$u = 0.811068 + 0.821995I$ $a = 1.20206 + 1.10469I$ $b = 0.385751 - 1.186730I$	$0.74682 + 6.31225I$	0
$u = 0.811068 - 0.821995I$ $a = 1.20206 - 1.10469I$ $b = 0.385751 + 1.186730I$	$0.74682 - 6.31225I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.614787+0.470038I$ $a=\ 1.118150+0.859293I$ $b=\ 0.237265-0.057936I$	$-1.33985-2.52478I$	$5.87677+6.20065I$
$u=-0.614787-0.470038I$ $a=\ 1.118150-0.859293I$ $b=\ 0.237265+0.057936I$	$-1.33985+2.52478I$	$5.87677-6.20065I$
$u=\ 0.606281+0.460474I$ $a=-0.11967-1.89327I$ $b=-0.80135+1.17152I$	$-6.06901+4.19971I$	$0.46981+4.89096I$
$u=\ 0.606281-0.460474I$ $a=-0.11967+1.89327I$ $b=-0.80135-1.17152I$	$-6.06901-4.19971I$	$0.46981-4.89096I$
$u=\ 0.742696+0.018030I$ $a=\ 0.802844-0.672931I$ $b=\ 0.123330-0.408590I$	$-2.29683-3.13725I$	$3.03113+2.28651I$
$u=\ 0.742696-0.018030I$ $a=\ 0.802844+0.672931I$ $b=\ 0.123330+0.408590I$	$-2.29683+3.13725I$	$3.03113-2.28651I$
$u=\ 1.157620+0.544016I$ $a=-0.53473+2.17350I$ $b=\ 0.888311-0.750993I$	$-14.8647-0.9237I$	0
$u=\ 1.157620-0.544016I$ $a=-0.53473-2.17350I$ $b=\ 0.888311+0.750993I$	$-14.8647+0.9237I$	0
$u=-0.679644+0.115394I$ $a=-0.016821+0.810279I$ $b=-1.298680-0.546785I$	$-0.552090-1.157580I$	$8.72526+2.52584I$
$u=-0.679644-0.115394I$ $a=-0.016821-0.810279I$ $b=-1.298680+0.546785I$	$-0.552090+1.157580I$	$8.72526-2.52584I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 1.044930 + 0.812912I$ $a = -0.75989 - 1.82673I$ $b = -0.442668 + 1.276840I$	$-2.69001 + 2.91714I$	0
$u = \quad 1.044930 - 0.812912I$ $a = -0.75989 + 1.82673I$ $b = -0.442668 - 1.276840I$	$-2.69001 - 2.91714I$	0
$u = -1.11456 + 0.87594I$ $a = -0.584881 + 1.062470I$ $b = -0.301834 - 1.243090I$	$4.07431 - 2.64903I$	0
$u = -1.11456 - 0.87594I$ $a = -0.584881 - 1.062470I$ $b = -0.301834 + 1.243090I$	$4.07431 + 2.64903I$	0
$u = \quad 0.73967 + 1.23237I$ $a = \quad 0.234778 + 0.158687I$ $b = -0.732813 - 0.431119I$	$-5.61316 - 1.82436I$	0
$u = \quad 0.73967 - 1.23237I$ $a = \quad 0.234778 - 0.158687I$ $b = -0.732813 + 0.431119I$	$-5.61316 + 1.82436I$	0
$u = \quad 0.489917 + 0.265929I$ $a = -0.631980 - 1.069290I$ $b = \quad 0.17708 + 1.44057I$	$0.77156 - 1.96953I$	$11.39719 + 1.23723I$
$u = \quad 0.489917 - 0.265929I$ $a = -0.631980 + 1.069290I$ $b = \quad 0.17708 - 1.44057I$	$0.77156 + 1.96953I$	$11.39719 - 1.23723I$
$u = -0.69545 + 1.27793I$ $a = \quad 0.589761 - 0.467742I$ $b = -1.013060 + 0.642851I$	$-10.25240 - 0.58456I$	0
$u = -0.69545 - 1.27793I$ $a = \quad 0.589761 + 0.467742I$ $b = -1.013060 - 0.642851I$	$-10.25240 + 0.58456I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.528848$ $a=-0.754706$ $b=-0.350552$	0.833691	12.5370
$u=1.17530+0.94653I$ $a=-0.099026-1.222920I$ $b=-0.902120+0.943721I$	$-4.22732+9.52870I$	0
$u=1.17530-0.94653I$ $a=-0.099026+1.222920I$ $b=-0.902120-0.943721I$	$-4.22732-9.52870I$	0
$u=0.469414+0.086831I$ $a=-0.24275+2.14834I$ $b=0.304078-1.019980I$	$0.75672+1.60252I$	$5.44397-2.96352I$
$u=0.469414-0.086831I$ $a=-0.24275-2.14834I$ $b=0.304078+1.019980I$	$0.75672-1.60252I$	$5.44397+2.96352I$
$u=1.11667+1.07117I$ $a=0.32680+1.51043I$ $b=0.91203-1.47375I$	$-13.1892+15.5433I$	0
$u=1.11667-1.07117I$ $a=0.32680-1.51043I$ $b=0.91203+1.47375I$	$-13.1892-15.5433I$	0
$u=-0.040555+0.445575I$ $a=-2.19312+1.06421I$ $b=-0.162171-1.085770I$	$-2.67022-3.59787I$	$1.26601+4.62354I$
$u=-0.040555-0.445575I$ $a=-2.19312-1.06421I$ $b=-0.162171+1.085770I$	$-2.67022+3.59787I$	$1.26601-4.62354I$
$u=-1.06557+1.17893I$ $a=0.465568-0.962520I$ $b=0.214621+1.324260I$	$3.14454-5.28865I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.06557-1.17893I$ $a=\ 0.465568+0.962520I$ $b=\ 0.214621-1.324260I$	$3.14454+5.28865I$	0
$u=-1.54201+0.46506I$ $a=-0.40850+1.52127I$ $b=-0.000517-1.179550I$	$4.85414-2.03164I$	0
$u=-1.54201-0.46506I$ $a=-0.40850-1.52127I$ $b=-0.000517+1.179550I$	$4.85414+2.03164I$	0
$u=-1.27163+0.99225I$ $a=-0.00808+1.62331I$ $b=-0.84144-1.21606I$	$-8.48368-7.48858I$	0
$u=-1.27163-0.99225I$ $a=-0.00808-1.62331I$ $b=-0.84144+1.21606I$	$-8.48368+7.48858I$	0
$u=-0.160337+0.343315I$ $a=\ 0.339442+0.084802I$ $b=\ 0.614423+1.266600I$	$0.79379-2.25708I$	$2.28794-4.37801I$
$u=-0.160337-0.343315I$ $a=\ 0.339442-0.084802I$ $b=\ 0.614423-1.266600I$	$0.79379+2.25708I$	$2.28794+4.37801I$
$u=\ 1.09583+1.21738I$ $a=-0.710263-0.627589I$ $b=\ 0.779094+1.174620I$	$-13.4744-7.2599I$	0
$u=\ 1.09583-1.21738I$ $a=-0.710263+0.627589I$ $b=\ 0.779094-1.174620I$	$-13.4744+7.2599I$	0
$u=-0.234232+0.257654I$ $a=\ 0.62787-9.86711I$ $b=\ 0.571174+0.777335I$	$-13.25520-3.60698I$	$0.0981+14.8573I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.234232-0.257654I$ $a=\ \ 0.62787+9.86711I$ $b=\ \ 0.571174-0.777335I$	$-13.25520+3.60698I$	$0.0981-14.8573I$
$u=-1.66651+0.55104I$ $a=-0.176083-0.957519I$ $b=\ \ 0.335346+0.557889I$	$2.14723-3.04462I$	0
$u=-1.66651-0.55104I$ $a=-0.176083+0.957519I$ $b=\ \ 0.335346-0.557889I$	$2.14723+3.04462I$	0

II.

$\boldsymbol{I_2^u = \langle 1.50\times 10^{24}u^{27}+8.28\times 10^{24}u^{26}+\cdots+1.24\times 10^{24}b+2.46\times 10^{24},\ 4.66\times 10^{23}u^{27}+2.34\times 10^{24}u^{26}+\cdots+1.24\times 10^{24}a-2.68\times 10^{24},\ u^{28}+6u^{27}+\cdots+2u+1\rangle}$

(i) Arc colorings

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

$$a_{12} = \begin{pmatrix}0\\u\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-0.374654u^{27}-1.88195u^{26}+\cdots+6.62313u+2.15462\\-1.20506u^{27}-6.66162u^{26}+\cdots-3.47743u-1.97877\end{pmatrix}$$

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

$$a_4 = \begin{pmatrix}-1.57971u^{27}-8.54357u^{26}+\cdots+3.14570u+0.175849\\-1.20506u^{27}-6.66162u^{26}+\cdots-3.47743u-1.97877\end{pmatrix}$$

$$a_3 = \begin{pmatrix}-0.347434u^{27}-1.83630u^{26}+\cdots+6.91281u+3.08931\\-1.28412u^{27}-7.15895u^{26}+\cdots-3.61794u-2.66516\end{pmatrix}$$

$$a_2 = \begin{pmatrix}1.99908u^{27}+12.7360u^{26}+\cdots+6.48433u+2.16177\\-0.842153u^{27}-4.69396u^{26}+\cdots-1.32507u-0.0688727\end{pmatrix}$$

$$a_6 = \begin{pmatrix}2.23949u^{27}+13.0407u^{26}+\cdots-12.3400u-5.56425\\-0.585524u^{27}-3.13244u^{26}+\cdots+2.42745u+0.356599\end{pmatrix}$$

$$a_8 = \begin{pmatrix}0.260068u^{27}+1.72336u^{26}+\cdots+5.30274u-0.950249\\0.0297660u^{27}+0.579857u^{26}+\cdots-1.78144u+1.63844\end{pmatrix}$$

$$a_1 = \begin{pmatrix}2.39626u^{27}+14.6108u^{26}+\cdots-17.2118u-6.13078\\-0.395076u^{27}-2.09431u^{26}+\cdots+3.82248u+0.336223\end{pmatrix}$$

$$a_7 = \begin{pmatrix}-0.463227u^{27}-3.40262u^{26}+\cdots+8.77999u+3.35500\\-0.00664464u^{27}+0.175348u^{26}+\cdots-2.87462u+0.243559\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}-1.26164u^{27}-8.15989u^{26}+\cdots-12.1726u-0.310184\\0.564215u^{27}+3.40566u^{26}+\cdots+0.108528u-0.289834\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{14196894526534098056419915}{1243689822254210224198313}u^{27}+\frac{771567725337471010687684 50}{1243689822254210224198313}u^{26}+\cdots+\frac{1800989044639007107940 2793}{1243689822254210224198313}u+\frac{241559276935381960224129 12}{1243689822254210224198313}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{28} - 29u^{27} + \cdots - 336u + 25$
c_2	$u^{28} + 3u^{27} + \cdots + 28u + 5$
c_3	$u^{28} + 2u^{26} + \cdots + u + 1$
c_4	$u^{28} + 12u^{26} + \cdots + 126u^2 + 13$
c_5	$u^{28} - 3u^{27} + \cdots - 28u + 5$
c_6	$u^{28} + 7u^{26} + \cdots + 3u + 1$
c_7	$u^{28} + u^{27} + \cdots - 238u + 79$
c_8	$u^{28} + 12u^{26} + \cdots + 126u^2 + 13$
c_9	$u^{28} + 6u^{27} + \cdots + 2u + 1$
c_{10}	$u^{28} + 7u^{26} + \cdots - 3u + 1$
c_{11}	$u^{28} - 4u^{26} + \cdots + 2u + 1$
c_{12}	$u^{28} + 6u^{26} + \cdots - 6u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{28} - 39y^{27} + \cdots + 18404y + 625$
c_2, c_5	$y^{28} + 29y^{27} + \cdots + 336y + 25$
c_3	$y^{28} + 4y^{27} + \cdots + 23y + 1$
c_4, c_8	$y^{28} + 24y^{27} + \cdots + 3276y + 169$
c_6, c_{10}	$y^{28} + 14y^{27} + \cdots + 17y + 1$
c_7	$y^{28} + 31y^{27} + \cdots + 69440y + 6241$
c_9	$y^{28} - 6y^{27} + \cdots - 8y + 1$
c_{11}	$y^{28} - 8y^{27} + \cdots + 16y + 1$
c_{12}	$y^{28} + 12y^{27} + \cdots - 14y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.940292 + 0.413387I$ $a = 1.23072 + 2.12971I$ $b = 0.300613 - 1.070080I$	$-1.05959 + 4.61100I$	$6.51158 - 5.52677I$
$u = 0.940292 - 0.413387I$ $a = 1.23072 - 2.12971I$ $b = 0.300613 + 1.070080I$	$-1.05959 - 4.61100I$	$6.51158 + 5.52677I$
$u = 0.806078 + 0.496313I$ $a = 0.083024 + 0.969496I$ $b = 0.175391 - 1.342910I$	$-0.16211 - 1.47199I$	$4.14534 - 0.40207I$
$u = 0.806078 - 0.496313I$ $a = 0.083024 - 0.969496I$ $b = 0.175391 + 1.342910I$	$-0.16211 + 1.47199I$	$4.14534 + 0.40207I$
$u = -0.653575 + 0.631653I$ $a = 0.16569 - 1.53605I$ $b = 0.85490 + 1.21262I$	$-5.97610 - 4.67435I$	$3.55527 + 10.86527I$
$u = -0.653575 - 0.631653I$ $a = 0.16569 + 1.53605I$ $b = 0.85490 - 1.21262I$	$-5.97610 + 4.67435I$	$3.55527 - 10.86527I$
$u = 0.217968 + 1.154320I$ $a = -0.564796 + 0.248293I$ $b = -0.066810 + 0.479178I$	$-4.21962 - 1.45210I$	$5.81625 + 6.66607I$
$u = 0.217968 - 1.154320I$ $a = -0.564796 - 0.248293I$ $b = -0.066810 - 0.479178I$	$-4.21962 + 1.45210I$	$5.81625 - 6.66607I$
$u = -0.216540 + 1.244680I$ $a = -0.414021 - 0.246811I$ $b = 0.522371 - 0.713383I$	$-8.29018 + 0.47114I$	$3.38775 + 2.13311I$
$u = -0.216540 - 1.244680I$ $a = -0.414021 + 0.246811I$ $b = 0.522371 + 0.713383I$	$-8.29018 - 0.47114I$	$3.38775 - 2.13311I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.622908 + 0.349779I$ $a = -0.216133 + 1.033420I$ $b = -0.632440 - 1.103600I$	$-1.58788 + 4.47956I$	$8.31123 - 10.39210I$
$u = 0.622908 - 0.349779I$ $a = -0.216133 - 1.033420I$ $b = -0.632440 + 1.103600I$	$-1.58788 - 4.47956I$	$8.31123 + 10.39210I$
$u = 0.926454 + 0.990307I$ $a = -1.014490 - 0.881408I$ $b = -0.219668 + 1.137670I$	$-0.67708 + 7.39786I$	$3.61944 - 6.76047I$
$u = 0.926454 - 0.990307I$ $a = -1.014490 + 0.881408I$ $b = -0.219668 - 1.137670I$	$-0.67708 - 7.39786I$	$3.61944 + 6.76047I$
$u = -1.104760 + 0.873270I$ $a = -0.517047 + 1.068910I$ $b = -0.355700 - 1.347290I$	$3.39497 - 2.92110I$	$2.45276 + 2.72271I$
$u = -1.104760 - 0.873270I$ $a = -0.517047 - 1.068910I$ $b = -0.355700 + 1.347290I$	$3.39497 + 2.92110I$	$2.45276 - 2.72271I$
$u = -0.354078 + 0.377348I$ $a = 0.67911 + 1.78144I$ $b = 0.908649 - 0.411620I$	$-1.76047 - 1.65206I$	$2.39742 + 0.15868I$
$u = -0.354078 - 0.377348I$ $a = 0.67911 - 1.78144I$ $b = 0.908649 + 0.411620I$	$-1.76047 + 1.65206I$	$2.39742 - 0.15868I$
$u = -0.462042 + 0.226447I$ $a = -0.364429 + 1.069470I$ $b = -0.86212 - 1.27313I$	$0.99320 - 2.56181I$	$15.9971 + 14.1165I$
$u = -0.462042 - 0.226447I$ $a = -0.364429 - 1.069470I$ $b = -0.86212 + 1.27313I$	$0.99320 + 2.56181I$	$15.9971 - 14.1165I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ 0.377108 + 0.341592I$ $a = \ 5.78433 + 1.20797I$ $b = -0.590667 - 0.703657I$	$-13.21040 - 3.22197I$	$2.66915 - 5.24743I$
$u = \ 0.377108 - 0.341592I$ $a = \ 5.78433 - 1.20797I$ $b = -0.590667 + 0.703657I$	$-13.21040 + 3.22197I$	$2.66915 + 5.24743I$
$u = -1.00439 + 1.16349I$ $a = \ 0.580992 - 0.879373I$ $b = \ 0.199655 + 1.398360I$	$2.49042 - 4.78963I$	$2.06444 + 2.28263I$
$u = -1.00439 - 1.16349I$ $a = \ 0.580992 + 0.879373I$ $b = \ 0.199655 - 1.398360I$	$2.49042 + 4.78963I$	$2.06444 - 2.28263I$
$u = -1.50088 + 0.54145I$ $a = \ 0.102083 + 0.905988I$ $b = -0.168069 - 0.765823I$	$2.69983 - 2.89612I$	$11.31267 + 1.19976I$
$u = -1.50088 - 0.54145I$ $a = \ 0.102083 - 0.905988I$ $b = -0.168069 + 0.765823I$	$2.69983 + 2.89612I$	$11.31267 - 1.19976I$
$u = -1.59455 + 0.53537I$ $a = \ 0.46497 - 1.63820I$ $b = -0.066099 + 1.175650I$	$4.33596 - 1.99981I$	0
$u = -1.59455 - 0.53537I$ $a = \ 0.46497 + 1.63820I$ $b = -0.066099 - 1.175650I$	$4.33596 + 1.99981I$	0

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{28}-29u^{27}+\cdots-336u+25)$ $\cdot(u^{63}+84u^{62}+\cdots+6421262u-290521)$
c_2	$(u^{28}+3u^{27}+\cdots+28u+5)(u^{63}+42u^{61}+\cdots+9624u-539)$
c_3	$(u^{28}+2u^{26}+\cdots+u+1)(u^{63}+u^{62}+\cdots+41175u-7877)$
c_4	$(u^{28}+12u^{26}+\cdots+126u^2+13)(u^{63}+3u^{62}+\cdots-596u-79)$
c_5	$(u^{28}-3u^{27}+\cdots-28u+5)(u^{63}+42u^{61}+\cdots+9624u-539)$
c_6	$(u^{28}+7u^{26}+\cdots+3u+1)(u^{63}-u^{62}+\cdots-237u-113)$
c_7	$(u^{28}+u^{27}+\cdots-238u+79)(u^{63}+2u^{62}+\cdots+3704u-3077)$
c_8	$(u^{28}+12u^{26}+\cdots+126u^2+13)(u^{63}+3u^{62}+\cdots-596u-79)$
c_9	$(u^{28}+6u^{27}+\cdots+2u+1)(u^{63}+3u^{62}+\cdots-2u-1)$
c_{10}	$(u^{28}+7u^{26}+\cdots-3u+1)(u^{63}-u^{62}+\cdots-237u-113)$
c_{11}	$(u^{28}-4u^{26}+\cdots+2u+1)(u^{63}-5u^{62}+\cdots-6392u-811)$
c_{12}	$(u^{28}+6u^{26}+\cdots-6u+1)(u^{63}-u^{62}+\cdots+3.95965\times10^{7}u-1.79776\times10^{7})$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{28} - 39y^{27} + \cdots + 18404y + 625)$ $\cdot (y^{63} - 188y^{62} + \cdots + 31966757369702y - 84402451441)$
c_2, c_5	$(y^{28} + 29y^{27} + \cdots + 336y + 25)$ $\cdot (y^{63} + 84y^{62} + \cdots + 6421262y - 290521)$
c_3	$(y^{28} + 4y^{27} + \cdots + 23y + 1)$ $\cdot (y^{63} + 27y^{62} + \cdots - 719912377y - 62047129)$
c_4, c_8	$(y^{28} + 24y^{27} + \cdots + 3276y + 169)$ $\cdot (y^{63} + 27y^{62} + \cdots + 125010y - 6241)$
c_6, c_{10}	$(y^{28} + 14y^{27} + \cdots + 17y + 1)(y^{63} + 49y^{62} + \cdots - 228139y - 12769)$
c_7	$(y^{28} + 31y^{27} + \cdots + 69440y + 6241)$ $\cdot (y^{63} + 94y^{62} + \cdots - 340978482y - 9467929)$
c_9	$(y^{28} - 6y^{27} + \cdots - 8y + 1)(y^{63} - 7y^{62} + \cdots + 2y - 1)$
c_{11}	$(y^{28} - 8y^{27} + \cdots + 16y + 1)(y^{63} + 3y^{62} + \cdots + 494194y - 657721)$
c_{12}	$(y^{28} + 12y^{27} + \cdots - 14y + 1)$ $\cdot (y^{63} + 111y^{62} + \cdots - 5213792993463072y - 323194065804801)$