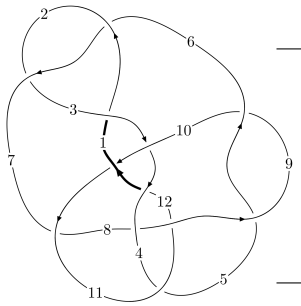
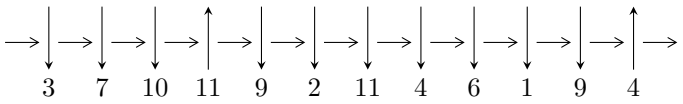
$\underline{12n_{0589}\ (K12n_{0589})}$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 2.15027 \times 10^{88} u^{78} + 3.02788 \times 10^{88} u^{77} + \cdots + 2.41970 \times 10^{87} b - 3.63043 \times 10^{89},$$
$$2.91093 \times 10^{89} u^{78} + 3.67504 \times 10^{89} u^{77} + \cdots + 1.57280 \times 10^{88} a - 4.88443 \times 10^{90},\ u^{79} + 2u^{78} + \cdots - u - 13\rangle$$
$$I_2^u = \langle -696u^{22} + 792u^{21} + \cdots + 302b - 1145,\ -655u^{22} + 334u^{21} + \cdots + 151a - 725,$$
$$u^{23} - u^{22} + \cdots + 3u - 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 102 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.

$\boldsymbol{I_1^u = \langle 2.15\times 10^{88}u^{78}+3.03\times 10^{88}u^{77}+\cdots+2.42\times 10^{87}b-3.63\times 10^{89},\ 2.91\times 10^{89}u^{78}+3.68\times 10^{89}u^{77}+\cdots+1.57\times 10^{88}a-4.88\times 10^{90},\ u^{79}+2u^{78}+\cdots-u-13\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$

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

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

$$a_{10} = \begin{pmatrix}-18.5079u^{78}-23.3662u^{77}+\cdots-380.443u+310.556\\-8.88654u^{78}-12.5135u^{77}+\cdots-158.149u+150.037\end{pmatrix}$$

$$a_4 = \begin{pmatrix}-1.64242u^{78}-5.44213u^{77}+\cdots-146.208u+80.9180\\-3.47633u^{78}-9.10119u^{77}+\cdots-197.562u+125.360\end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix}-12.0911u^{78}-16.6948u^{77}+\cdots-315.397u+227.813\\-5.48169u^{78}-10.3261u^{77}+\cdots-177.652u+129.008\end{pmatrix}$$

$$a_6 = \begin{pmatrix}u\\u\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-11.3809u^{78}-15.4740u^{77}+\cdots-263.755u+201.485\\-1.75952u^{78}-4.62127u^{77}+\cdots-41.4612u+40.9657\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-10.4501u^{78}-16.1921u^{77}+\cdots-418.113u+259.056\\3.24517u^{78}+1.05048u^{77}+\cdots-92.9910u+13.4345\end{pmatrix}$$

$$a_8 = \begin{pmatrix}25.1053u^{78}+33.6322u^{77}+\cdots+612.317u-456.608\\22.1871u^{78}+27.8524u^{77}+\cdots+413.354u-348.620\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}-11.2839u^{78}-11.8219u^{77}+\cdots-210.236u+164.805\\-9.08712u^{78}-6.33482u^{77}+\cdots-59.2341u+78.4719\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 25.2924u^{78}+32.9982u^{77}+\cdots+728.389u-509.327$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{79}+36u^{78}+\cdots+3641u+169$
c_2, c_6	$u^{79}-2u^{78}+\cdots-u+13$
c_3	$u^{79}+2u^{78}+\cdots-49u+29$
c_4	$u^{79}-2u^{78}+\cdots+107183u+13051$
c_5, c_9	$u^{79}+3u^{78}+\cdots+12688u+2456$
c_7	$u^{79}-3u^{78}+\cdots-2215654u+836419$
c_8	$u^{79}-u^{78}+\cdots+77402u+12427$
c_{10}	$u^{79}-9u^{78}+\cdots+106u+47$
c_{11}	$u^{79}+2u^{78}+\cdots+84233u+4289$
c_{12}	$u^{79}+12u^{78}+\cdots+280u+8$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{79} + 24y^{78} + \cdots - 134679y - 28561$
c_2, c_6	$y^{79} - 36y^{78} + \cdots + 3641y - 169$
c_3	$y^{79} + 2y^{78} + \cdots - 1079y - 841$
c_4	$y^{79} - 90y^{78} + \cdots + 7988152207y - 170328601$
c_5, c_9	$y^{79} - 37y^{78} + \cdots + 161614080y - 6031936$
c_7	$y^{79} + 41y^{78} + \cdots - 12372523428214y - 699596743561$
c_8	$y^{79} + 105y^{78} + \cdots - 6895853666y - 154430329$
c_{10}	$y^{79} + 23y^{78} + \cdots + 385450y - 2209$
c_{11}	$y^{79} + 84y^{78} + \cdots - 314032055y - 18395521$
c_{12}	$y^{79} - 32y^{78} + \cdots + 3520y - 64$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.940912+0.374623I$ $a=\ 1.04398+1.79768I$ $b=\ 1.77718+1.09794I$	$-3.10628+1.42293I$	0
$u=-0.940912-0.374623I$ $a=\ 1.04398-1.79768I$ $b=\ 1.77718-1.09794I$	$-3.10628-1.42293I$	0
$u=-0.907169+0.464698I$ $a=\ 1.56697+0.93171I$ $b=\ 0.718320-0.310140I$	$-2.40821+3.46296I$	0
$u=-0.907169-0.464698I$ $a=\ 1.56697-0.93171I$ $b=\ 0.718320+0.310140I$	$-2.40821-3.46296I$	0
$u=\ 0.611431+0.761311I$ $a=-0.210481+1.145050I$ $b=-1.68554+0.65090I$	$9.90785+3.17209I$	0
$u=\ 0.611431-0.761311I$ $a=-0.210481-1.145050I$ $b=-1.68554-0.65090I$	$9.90785-3.17209I$	0
$u=-0.362511+0.898774I$ $a=\ 0.549996+0.889051I$ $b=\ 0.831285-0.017175I$	$0.89320-3.95862I$	0
$u=-0.362511-0.898774I$ $a=\ 0.549996-0.889051I$ $b=\ 0.831285+0.017175I$	$0.89320+3.95862I$	0
$u=-0.857614+0.445269I$ $a=-0.015635+1.020300I$ $b=\ 1.60077+1.38290I$	$-2.20981+0.24877I$	0
$u=-0.857614-0.445269I$ $a=-0.015635-1.020300I$ $b=\ 1.60077-1.38290I$	$-2.20981-0.24877I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.941507 + 0.443174I$ $a = 0.17692 - 1.53807I$ $b = 0.964686 - 0.947975I$	$-2.31907 - 1.56521I$	0
$u = 0.941507 - 0.443174I$ $a = 0.17692 + 1.53807I$ $b = 0.964686 + 0.947975I$	$-2.31907 + 1.56521I$	0
$u = 0.467521 + 0.836388I$ $a = -1.24982 + 0.92072I$ $b = -0.870558 - 0.363496I$	$-0.94854 + 2.58619I$	0
$u = 0.467521 - 0.836388I$ $a = -1.24982 - 0.92072I$ $b = -0.870558 + 0.363496I$	$-0.94854 - 2.58619I$	0
$u = -0.882470 + 0.371777I$ $a = -1.09764 - 1.93772I$ $b = -1.59024 - 2.39194I$	$4.16992 - 1.43305I$	0
$u = -0.882470 - 0.371777I$ $a = -1.09764 + 1.93772I$ $b = -1.59024 + 2.39194I$	$4.16992 + 1.43305I$	0
$u = 1.020540 + 0.220943I$ $a = -0.877902 - 0.130605I$ $b = 0.274153 - 0.994301I$	$0.64583 + 1.61580I$	0
$u = 1.020540 - 0.220943I$ $a = -0.877902 + 0.130605I$ $b = 0.274153 + 0.994301I$	$0.64583 - 1.61580I$	0
$u = -0.471684 + 0.939721I$ $a = -1.06369 - 1.04214I$ $b = -1.211420 + 0.417868I$	$7.30955 - 10.88550I$	0
$u = -0.471684 - 0.939721I$ $a = -1.06369 + 1.04214I$ $b = -1.211420 - 0.417868I$	$7.30955 + 10.88550I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.627645+0.696624I$ $a=-0.521853-0.958627I$ $b=-1.092110-0.473148I$	$2.90030+0.96581I$	0
$u=-0.627645-0.696624I$ $a=-0.521853+0.958627I$ $b=-1.092110+0.473148I$	$2.90030-0.96581I$	0
$u=-1.057960+0.098937I$ $a=\ \ 0.378289+0.870614I$ $b=-0.607534+0.534343I$	$-4.85614-2.30083I$	0
$u=-1.057960-0.098937I$ $a=\ \ 0.378289-0.870614I$ $b=-0.607534-0.534343I$	$-4.85614+2.30083I$	0
$u=\ \ 0.273338+0.890041I$ $a=-0.037137-1.377140I$ $b=\ \ 0.452185-0.240610I$	$7.98072-0.14474I$	0
$u=\ \ 0.273338-0.890041I$ $a=-0.037137+1.377140I$ $b=\ \ 0.452185+0.240610I$	$7.98072+0.14474I$	0
$u=\ \ 0.759344+0.535178I$ $a=\ \ 1.06812-2.48880I$ $b=\ \ 0.58587-1.28840I$	$5.86813+1.74808I$	0
$u=\ \ 0.759344-0.535178I$ $a=\ \ 1.06812+2.48880I$ $b=\ \ 0.58587+1.28840I$	$5.86813-1.74808I$	0
$u=\ \ 0.933724+0.535155I$ $a=\ \ 0.071714+1.051390I$ $b=-1.12899+1.53303I$	$-1.39285-4.16896I$	0
$u=\ \ 0.933724-0.535155I$ $a=\ \ 0.071714-1.051390I$ $b=-1.12899-1.53303I$	$-1.39285+4.16896I$	0

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.542872+0.745330I$		
$a=$	$1.34954-0.72392I$	$0.17356+3.61204I$	0
$b=$	$1.337630+0.203188I$		
$u=$	$0.542872-0.745330I$		
$a=$	$1.34954+0.72392I$	$0.17356-3.61204I$	0
$b=$	$1.337630-0.203188I$		
$u=$	$0.930941+0.549205I$		
$a=$	$1.69027-0.27289I$	$5.30360-6.13091I$	0
$b=$	$2.75476-0.40173I$		
$u=$	$0.930941-0.549205I$		
$a=$	$1.69027+0.27289I$	$5.30360+6.13091I$	0
$b=$	$2.75476+0.40173I$		
$u=$	$-0.815186+0.737750I$		
$a=$	$-0.94268+1.55544I$	$6.71179+3.15745I$	0
$b=$	$-0.07515+1.62017I$		
$u=$	$-0.815186-0.737750I$		
$a=$	$-0.94268-1.55544I$	$6.71179-3.15745I$	0
$b=$	$-0.07515-1.62017I$		
$u=$	$1.019360+0.512227I$		
$a=$	$0.764778-0.153365I$	$-2.03912-4.35351I$	0
$b=$	$0.010158+0.738965I$		
$u=$	$1.019360-0.512227I$		
$a=$	$0.764778+0.153365I$	$-2.03912+4.35351I$	0
$b=$	$0.010158-0.738965I$		
$u=$	$-0.608761+0.981615I$		
$a=$	$-0.335444+0.466549I$	$8.04761+5.62058I$	0
$b=$	$0.565088+0.783410I$		
$u=$	$-0.608761-0.981615I$		
$a=$	$-0.335444-0.466549I$	$8.04761-5.62058I$	0
$b=$	$0.565088-0.783410I$		

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.985708+0.605627I$ $a=-0.81681-1.24509I$ $b=-1.28457-0.74568I$	$1.81620+4.04906I$	0
$u=-0.985708-0.605627I$ $a=-0.81681+1.24509I$ $b=-1.28457+0.74568I$	$1.81620-4.04906I$	0
$u=-1.037610+0.540324I$ $a=-0.45101-2.02196I$ $b=-1.99466-1.64145I$	$2.56496+8.05404I$	0
$u=-1.037610-0.540324I$ $a=-0.45101+2.02196I$ $b=-1.99466+1.64145I$	$2.56496-8.05404I$	0
$u=-0.916312+0.741875I$ $a=\ 1.36975-0.80644I$ $b=\ 1.09987-1.49474I$	$6.41833+2.47068I$	0
$u=-0.916312-0.741875I$ $a=\ 1.36975+0.80644I$ $b=\ 1.09987+1.49474I$	$6.41833-2.47068I$	0
$u=\ 0.686522+0.449971I$ $a=-0.994721+0.690689I$ $b=-0.228585-0.178106I$	$-0.628640-0.060262I$	$-8.00000-0.61912I$
$u=\ 0.686522-0.449971I$ $a=-0.994721-0.690689I$ $b=-0.228585+0.178106I$	$-0.628640+0.060262I$	$-8.00000+0.61912I$
$u=-1.138860+0.375005I$ $a=-1.064920-0.554165I$ $b=-1.31033-0.94425I$	$3.56906+3.76087I$	0
$u=-1.138860-0.375005I$ $a=-1.064920+0.554165I$ $b=-1.31033+0.94425I$	$3.56906-3.76087I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.017080 + 0.650523I$ $a = -1.27012 + 1.34740I$ $b = -1.74770 + 0.03462I$	$8.68316 - 8.52671I$	0
$u = 1.017080 - 0.650523I$ $a = -1.27012 - 1.34740I$ $b = -1.74770 - 0.03462I$	$8.68316 + 8.52671I$	0
$u = 1.055610 + 0.635989I$ $a = 0.51016 - 1.81699I$ $b = 1.35422 - 1.71757I$	$-1.35466 - 8.89232I$	0
$u = 1.055610 - 0.635989I$ $a = 0.51016 + 1.81699I$ $b = 1.35422 + 1.71757I$	$-1.35466 + 8.89232I$	0
$u = 0.494380 + 0.579415I$ $a = -0.834985 + 0.184019I$ $b = 0.276708 - 0.757910I$	$-0.472071 + 0.051721I$	$-5.92155 + 0.65415I$
$u = 0.494380 - 0.579415I$ $a = -0.834985 - 0.184019I$ $b = 0.276708 + 0.757910I$	$-0.472071 - 0.051721I$	$-5.92155 - 0.65415I$
$u = 1.106110 + 0.651817I$ $a = -0.42547 + 1.55137I$ $b = -1.46435 + 1.84739I$	$-2.85013 - 8.13954I$	0
$u = 1.106110 - 0.651817I$ $a = -0.42547 - 1.55137I$ $b = -1.46435 - 1.84739I$	$-2.85013 + 8.13954I$	0
$u = -1.283900 + 0.091471I$ $a = 0.262627 - 0.128542I$ $b = 1.262290 + 0.004627I$	$-6.78094 - 0.09960I$	0
$u = -1.283900 - 0.091471I$ $a = 0.262627 + 0.128542I$ $b = 1.262290 - 0.004627I$	$-6.78094 + 0.09960I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.313830 + 0.011159I$ $a = -0.048796 + 0.275193I$ $b = 0.872827 - 0.172654I$	$0.65850 + 8.14248I$	0
$u = 1.313830 - 0.011159I$ $a = -0.048796 - 0.275193I$ $b = 0.872827 + 0.172654I$	$0.65850 - 8.14248I$	0
$u = -1.156760 + 0.633167I$ $a = 0.708871 + 1.213790I$ $b = 1.55018 + 1.10678I$	$-1.48361 + 9.57252I$	0
$u = -1.156760 - 0.633167I$ $a = 0.708871 - 1.213790I$ $b = 1.55018 - 1.10678I$	$-1.48361 - 9.57252I$	0
$u = -1.141240 + 0.679924I$ $a = -0.65831 - 1.65912I$ $b = -1.89648 - 1.66806I$	$5.2565 + 16.8078I$	0
$u = -1.141240 - 0.679924I$ $a = -0.65831 + 1.65912I$ $b = -1.89648 + 1.66806I$	$5.2565 - 16.8078I$	0
$u = -0.652165 + 0.009763I$ $a = -2.17420 + 1.86731I$ $b = -1.233600 + 0.301725I$	$4.63896 + 3.70393I$	$-9.04475 - 4.60639I$
$u = -0.652165 - 0.009763I$ $a = -2.17420 - 1.86731I$ $b = -1.233600 - 0.301725I$	$4.63896 - 3.70393I$	$-9.04475 + 4.60639I$
$u = -1.091590 + 0.818788I$ $a = 0.478452 + 0.097869I$ $b = 0.341198 - 0.516786I$	$6.60861 + 0.87644I$	0
$u = -1.091590 - 0.818788I$ $a = 0.478452 - 0.097869I$ $b = 0.341198 + 0.516786I$	$6.60861 - 0.87644I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.354853+0.520671I$ $a=-0.83695-1.88653I$ $b=-1.269650+0.448387I$	$4.33372-3.68615I$	$-6.79933+3.65640I$
$u=-0.354853-0.520671I$ $a=-0.83695+1.88653I$ $b=-1.269650-0.448387I$	$4.33372+3.68615I$	$-6.79933-3.65640I$
$u=\ 1.231940+0.615361I$ $a=\ 0.811090-0.511199I$ $b=\ 1.71104-0.49726I$	$5.09949-5.43093I$	0
$u=\ 1.231940-0.615361I$ $a=\ 0.811090+0.511199I$ $b=\ 1.71104+0.49726I$	$5.09949+5.43093I$	0
$u=\ 1.379720+0.181096I$ $a=-0.098843-0.186105I$ $b=-0.616745+0.001577I$	$-4.88567+0.41876I$	0
$u=\ 1.379720-0.181096I$ $a=-0.098843+0.186105I$ $b=-0.616745-0.001577I$	$-4.88567-0.41876I$	0
$u=\ 0.286502+0.487686I$ $a=\ 0.661056-0.092637I$ $b=\ 0.397208+0.778164I$	$-0.67083-1.82213I$	$-2.69672+4.61690I$
$u=\ 0.286502-0.487686I$ $a=\ 0.661056+0.092637I$ $b=\ 0.397208-0.778164I$	$-0.67083+1.82213I$	$-2.69672-4.61690I$
$u=\ 0.437288$ $a=-1.25497$ $b=\ 0.141138$	-0.841651	-11.1020

II. $I_2^u = \langle -696u^{22} + 792u^{21} + \cdots + 302b - 1145,\ -655u^{22} + 334u^{21} + \cdots + 151a - 725,\ u^{23} - u^{22} + \cdots + 3u - 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_{10} = \begin{pmatrix} 4.33775u^{22} - 2.21192u^{21} + \cdots - 12.4636u + 4.80132 \\ 2.30464u^{22} - 2.62252u^{21} + \cdots - 6.48675u + 3.79139 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -1.14901u^{22} + 2.65232u^{21} + \cdots + 7.64570u - 3.79470 \\ -0.0860927u^{22} + 1.63245u^{21} + \cdots + 0.539735u - 2.12583 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} 1.88411u^{22} - 0.937086u^{21} + \cdots - 4.83113u + 1.71523 \\ 0.298013u^{22} - 2.30464u^{21} + \cdots - 1.29139u + 1.58940 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 2.69205u^{22} - 1.21854u^{21} + \cdots - 7.16556u + 2.35762 \\ 0.658940u^{22} - 1.62914u^{21} + \cdots - 1.18874u + 1.34768 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 2.21854u^{22} - 0.490066u^{21} + \cdots - 4.44702u + 2.66556 \\ 0.218543u^{22} + 0.509934u^{21} + \cdots - 0.447020u - 0.334437 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -5.84106u^{22} + 2.37086u^{21} + \cdots + 15.3113u - 7.15232 \\ -4.19868u^{22} + 0.536424u^{21} + \cdots + 10.3609u - 4.55960 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1.57947u^{22} - 2.31457u^{21} + \cdots - 5.84437u + 4.42384 \\ 1.21192u^{22} - 2.17219u^{21} + \cdots - 5.75166u + 3.96358 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{452}{151}u^{22} - \frac{350}{151}u^{21} + \cdots - \frac{860}{151}u - \frac{1253}{151}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{23} - 13u^{22} + \cdots + 5u - 1$
c_2	$u^{23} - u^{22} + \cdots + 3u - 1$
c_3	$u^{23} - u^{22} + \cdots - u + 1$
c_4	$u^{23} + u^{22} + \cdots + 13u + 7$
c_5	$u^{23} + 2u^{22} + \cdots + 8u + 8$
c_6	$u^{23} + u^{22} + \cdots + 3u + 1$
c_7	$u^{23} + 4u^{22} + \cdots + 88u - 17$
c_8	$u^{23} + 8u^{21} + \cdots - 2u + 1$
c_9	$u^{23} - 2u^{22} + \cdots + 8u - 8$
c_{10}	$u^{23} - 8u^{22} + \cdots + 4u - 1$
c_{11}	$u^{23} + 5u^{22} + \cdots + u + 1$
c_{12}	$u^{23} - 5u^{22} + \cdots - 28u^2 - 8$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{23} + 3y^{22} + \cdots - 35y - 1$
c_2, c_6	$y^{23} - 13y^{22} + \cdots + 5y - 1$
c_3	$y^{23} - 3y^{22} + \cdots + 25y - 1$
c_4	$y^{23} - 15y^{22} + \cdots - 377y - 49$
c_5, c_9	$y^{23} - 18y^{22} + \cdots + 768y - 64$
c_7	$y^{23} + 12y^{22} + \cdots + 3902y - 289$
c_8	$y^{23} + 16y^{22} + \cdots - 10y - 1$
c_{10}	$y^{23} + 6y^{22} + \cdots + 2y - 1$
c_{11}	$y^{23} + 11y^{22} + \cdots + 21y - 1$
c_{12}	$y^{23} - 9y^{22} + \cdots - 448y - 64$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.965287 + 0.385719I$ $a = -0.68324 + 1.83490I$ $b = -1.56709 + 1.13629I$	$-3.50819 - 1.32177I$	$-22.3687 + 1.0798I$
$u = 0.965287 - 0.385719I$ $a = -0.68324 - 1.83490I$ $b = -1.56709 - 1.13629I$	$-3.50819 + 1.32177I$	$-22.3687 - 1.0798I$
$u = -0.754686 + 0.722533I$ $a = -1.39345 + 0.64128I$ $b = -0.670981 + 0.711403I$	$6.60939 + 4.34186I$	$-4.57444 - 6.63960I$
$u = -0.754686 - 0.722533I$ $a = -1.39345 - 0.64128I$ $b = -0.670981 - 0.711403I$	$6.60939 - 4.34186I$	$-4.57444 + 6.63960I$
$u = 0.437863 + 0.826816I$ $a = -1.27002 + 0.83666I$ $b = -0.911985 - 0.315070I$	$-1.59333 + 3.37311I$	$-10.90858 - 4.53716I$
$u = 0.437863 - 0.826816I$ $a = -1.27002 - 0.83666I$ $b = -0.911985 + 0.315070I$	$-1.59333 - 3.37311I$	$-10.90858 + 4.53716I$
$u = -0.983336 + 0.489926I$ $a = -1.297940 - 0.449684I$ $b = -0.449112 + 0.805818I$	$-2.88701 + 4.40761I$	$-17.3868 - 7.7618I$
$u = -0.983336 - 0.489926I$ $a = -1.297940 + 0.449684I$ $b = -0.449112 - 0.805818I$	$-2.88701 - 4.40761I$	$-17.3868 + 7.7618I$
$u = 1.084130 + 0.467715I$ $a = 1.29340 - 0.63485I$ $b = 2.26155 - 0.48718I$	$3.54516 - 5.85101I$	$-9.82180 + 6.28067I$
$u = 1.084130 - 0.467715I$ $a = 1.29340 + 0.63485I$ $b = 2.26155 + 0.48718I$	$3.54516 + 5.85101I$	$-9.82180 - 6.28067I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.704630+0.385059I$ $a=\ \ 0.897277-0.755242I$ $b=-0.96705-1.21608I$	$-1.85596-0.62485I$	$-10.44943+4.04776I$
$u=-0.704630-0.385059I$ $a=\ \ 0.897277+0.755242I$ $b=-0.96705+1.21608I$	$-1.85596+0.62485I$	$-10.44943-4.04776I$
$u=\ \ 0.688425+0.382723I$ $a=\ \ 1.56817-2.80264I$ $b=\ \ 1.18209-1.51989I$	$5.02161+2.27444I$	$-6.96616-2.99379I$
$u=\ \ 0.688425-0.382723I$ $a=\ \ 1.56817+2.80264I$ $b=\ \ 1.18209+1.51989I$	$5.02161-2.27444I$	$-6.96616+2.99379I$
$u=-1.009220+0.751191I$ $a=\ \ 0.390476-0.766392I$ $b=\ \ 0.134329-1.282050I$	$5.82923+1.29072I$	$-9.50178-0.22534I$
$u=-1.009220-0.751191I$ $a=\ \ 0.390476+0.766392I$ $b=\ \ 0.134329+1.282050I$	$5.82923-1.29072I$	$-9.50178+0.22534I$
$u=\ \ 1.120850+0.644008I$ $a=-0.41762+1.53390I$ $b=-1.33726+1.77241I$	$-3.61686-8.88790I$	$-13.3243+8.1123I$
$u=\ \ 1.120850-0.644008I$ $a=-0.41762-1.53390I$ $b=-1.33726-1.77241I$	$-3.61686+8.88790I$	$-13.3243-8.1123I$
$u=-1.299510+0.176549I$ $a=\ \ 0.253627-0.264770I$ $b=\ \ 1.191850-0.068265I$	$-7.09111-0.49453I$	$-17.0782+7.2270I$
$u=-1.299510-0.176549I$ $a=\ \ 0.253627+0.264770I$ $b=\ \ 1.191850+0.068265I$	$-7.09111+0.49453I$	$-17.0782-7.2270I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 1.36565$ $a = -0.302971$ $b = -0.808918$	-4.53589	-1.44890
$u = \quad 0.272004 + 0.397025I$ $a = -1.18920 + 0.98777I$ $b = -0.461878 - 0.889928I$	$-1.47485 - 1.57628I$	$-12.39539 + 2.11690I$
$u = \quad 0.272004 - 0.397025I$ $a = -1.18920 - 0.98777I$ $b = -0.461878 + 0.889928I$	$-1.47485 + 1.57628I$	$-12.39539 - 2.11690I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{23}-13u^{22}+\cdots+5u-1)(u^{79}+36u^{78}+\cdots+3641u+169)$
c_2	$(u^{23}-u^{22}+\cdots+3u-1)(u^{79}-2u^{78}+\cdots-u+13)$
c_3	$(u^{23}-u^{22}+\cdots-u+1)(u^{79}+2u^{78}+\cdots-49u+29)$
c_4	$(u^{23}+u^{22}+\cdots+13u+7)(u^{79}-2u^{78}+\cdots+107183u+13051)$
c_5	$(u^{23}+2u^{22}+\cdots+8u+8)(u^{79}+3u^{78}+\cdots+12688u+2456)$
c_6	$(u^{23}+u^{22}+\cdots+3u+1)(u^{79}-2u^{78}+\cdots-u+13)$
c_7	$(u^{23}+4u^{22}+\cdots+88u-17)(u^{79}-3u^{78}+\cdots-2215654u+836419)$
c_8	$(u^{23}+8u^{21}+\cdots-2u+1)(u^{79}-u^{78}+\cdots+77402u+12427)$
c_9	$(u^{23}-2u^{22}+\cdots+8u-8)(u^{79}+3u^{78}+\cdots+12688u+2456)$
c_{10}	$(u^{23}-8u^{22}+\cdots+4u-1)(u^{79}-9u^{78}+\cdots+106u+47)$
c_{11}	$(u^{23}+5u^{22}+\cdots+u+1)(u^{79}+2u^{78}+\cdots+84233u+4289)$
c_{12}	$(u^{23}-5u^{22}+\cdots-28u^2-8)(u^{79}+12u^{78}+\cdots+280u+8)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{23}+3y^{22}+\cdots-35y-1)(y^{79}+24y^{78}+\cdots-134679y-28561)$
c_2, c_6	$(y^{23}-13y^{22}+\cdots+5y-1)(y^{79}-36y^{78}+\cdots+3641y-169)$
c_3	$(y^{23}-3y^{22}+\cdots+25y-1)(y^{79}+2y^{78}+\cdots-1079y-841)$
c_4	$(y^{23}-15y^{22}+\cdots-377y-49)$ $\cdot(y^{79}-90y^{78}+\cdots+7988152207y-170328601)$
c_5, c_9	$(y^{23}-18y^{22}+\cdots+768y-64)$ $\cdot(y^{79}-37y^{78}+\cdots+161614080y-6031936)$
c_7	$(y^{23}+12y^{22}+\cdots+3902y-289)$ $\cdot(y^{79}+41y^{78}+\cdots-12372523428214y-699596743561)$
c_8	$(y^{23}+16y^{22}+\cdots-10y-1)$ $\cdot(y^{79}+105y^{78}+\cdots-6895853666y-154430329)$
c_{10}	$(y^{23}+6y^{22}+\cdots+2y-1)(y^{79}+23y^{78}+\cdots+385450y-2209)$
c_{11}	$(y^{23}+11y^{22}+\cdots+21y-1)$ $\cdot(y^{79}+84y^{78}+\cdots-314032055y-18395521)$
c_{12}	$(y^{23}-9y^{22}+\cdots-448y-64)(y^{79}-32y^{78}+\cdots+3520y-64)$